



DUE TO THE COVID-19 STATE OF EMERGENCY AND PURSUANT TO WAIVERS TO CERTAIN BROWN ACT PROVISIONS UNDER THE GOVERNOR'S EXECUTIVE ORDERS, THIS MEETING IS BEING CONDUCTED VIA TELECONFERENCE AND THERE WILL BE NO PHYSICAL LOCATION FROM WHICH MEMBERS OF THE PUBLIC MAY PARTICIPATE.

MEMBERS OF THE PUBLIC ARE ENCOURAGED TO PARTICIPATE IN THE BOARD MEETING OPEN SESSION BY GOING TO <https://us02web.zoom.us/j/87694492372> OR BY CALLING 1-669-900-6833 or 1-346-248-7799 or 1-253-215-8782 or 1-301-715-8592 or 1-312-626- 6799 or 1-929-205-6099 (WEBINAR/MEETING ID: 876 9449 2372). (CLOSED SESSION WILL NOT BE ACCESSIBLE TO MEMBERS OF THE PUBLIC; HOWEVER, INSTRUCTIONS FOR SUBMITTING PUBLIC COMMENT ON CLOSED SESSION ITEMS ARE PROVIDED IN ITEM #4.)

MEMBERS OF THE PUBLIC WISHING TO ADDRESS THE BOARD UNDER PUBLIC COMMENT OR ON A SPECIFIC AGENDA ITEM MAY SUBMIT WRITTEN COMMENTS TO OUR BOARD SECRETARY BY EMAIL AT DWASHBURN@RAINBOWMWD.COM OR BY MAIL TO 3707 OLD HIGHWAY 395, FALLBROOK, CA 92028. ALL PUBLIC COMMENTS RECEIVED AT LEAST ONE HOUR IN ADVANCE OF THE MEETING WILL BE READ TO THE BOARD DURING THE APPROPRIATE PORTION OF THE MEETING. THESE PUBLIC COMMENT PROCEDURES SUPERSEDE THE DISTRICT'S STANDARD PUBLIC COMMENT POLICIES AND PROCEDURES TO THE CONTRARY.

RAINBOW MUNICIPAL WATER DISTRICT BOARD MEETING

Tuesday, May 25, 2021

Closed Session 12:00 p.m.

Open Session 1:00 p.m.

THE PURPOSE OF THE REGULAR BOARD MEETING IS TO DISCUSS THE ATTACHED AGENDA

District Office

3707 Old Highway 395

Fallbrook, CA 92028

Board Agenda Policies

Board of Directors Meeting Schedule Regular Board meetings are normally scheduled for the 4th Tuesday of the month with Open Session discussions starting time certain at 1:00 p.m.

Breaks It is the intent of the Board to take a ten-minute break every hour and one-half during the meeting.

Public Input on Specific Agenda Items and those items not on the Agenda, Except Public Hearings Any person of the public desiring to speak shall fill out a "Speaker's Slip", encouraging them to state their name, though not mandatory. Such person shall be allowed to speak during public comment time and has the option of speaking once on any agenda item when it is being discussed. Speaking time shall generally be limited to three minutes, unless a longer period is permitted by the Board President.

Public Items for the Board of Directors' agenda must be submitted in writing and received by the District office no later than 10 business days prior to a regular Board of Directors' Meeting.

Agenda Posting and Materials Agendas for all regular Board of Directors' meetings are posted at least seventy-two hours prior to the meeting on bulletin boards outside the entrance gate and the main entrance door of the District, 3707 Old Highway 395, Fallbrook, California 92028. The agendas and all background material may also be inspected at the District Office.

You may also visit us at www.rainbowmwd.com.

Time Certain Agenda items identified as "time certain" indicate the item will not be heard prior to the time indicated.

Board meetings will be audio and video recorded with copies available upon request. Requests for audio recordings will be fulfilled once draft minutes for such meeting have been prepared. There are no costs associated with obtaining copies of audio and video recordings; however, these recordings will only be retained according to the policies provided in the District's Administrative Code. Copies of public records are available as a service to the public; a charge of \$.10 per page up to 99 pages will be collected and \$.14 per page for 100 pages or more.

If you have special needs because of a disability which makes it difficult for you to participate in the meeting or you require assistance or auxiliary aids to participate in the meeting, please contact the District Secretary, (760) 728-1178, by at least noon on the Friday preceding the meeting. The District will attempt to make arrangements to accommodate your disability.

Notice is hereby given that the Rainbow Municipal Water District Board of Directors will hold Closed Session at 12:00 p.m. and Open Session at 1:00 p.m. Tuesday, May 25, 2021, at the District Office located at 3707 Old Highway 395, Fallbrook, CA 92028. At any time during the session, the Board of Directors Meeting may adjourn to Closed Session to consider litigation or to discuss with legal counsel matters within the attorney client privilege.

AGENDA

1. **CALL TO ORDER**
2. **ROLL CALL: Gasca___ Hamilton___ Mack___ Moss___ Rindfleisch___**
3. **ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)**
4. **INSTRUCTIONS TO ALLOW PUBLIC COMMENT ON AGENDA ITEMS FROM THOSE ATTENDING THIS MEETING VIA TELECONFERENCE OR VIDEO CONFERENCE**

CHAIR TO READ ALOUD - "If at any point, anyone would like to ask a question or make a comment and have joined this meeting with their computer, they can click on the "Raise Hand" button located at the bottom of the screen. We will be alerted that they would like to speak. When called upon, please unmute the microphone and ask the question or make comments in no more than three minutes.

*Those who have joined by dialing a number on their telephone, will need to press *6 to unmute themselves and then *9 to alert us that they would like to speak.*

A slight pause will also be offered at the conclusion of each agenda item discussion to allow public members an opportunity to make comments or ask questions."

5. **ORAL/Written COMMUNICATIONS FROM THE PUBLIC OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD REGARDING CLOSED SESSION AGENDA ITEMS (Government Code § 54954.2).**

Under Oral Communications, any person wishing to address the Board on matters regarding the Closed Session agenda should email or mailing their comments to the Board Secretary one hour before the Closed Session scheduled start time. All written public comments will be read to the Board prior to their adjournment to Closed Session. Any person wishing to speak to the Board regarding Closed Session agenda items may do so by calling (760) 728-1178, listening for "Thank you for calling Rainbow Municipal Water District", dialing Extension 429, and entering pin 8607 at the Closed Session scheduled start time. Once all public comment is heard, this call will be disconnected, and the Board will adjourn to Closed Session. To participate in the Open Session portion of the meeting, please follow the instructions provided at the top of Page 1 of this agenda. Speaking time shall generally be limited to three minutes unless a longer period is permitted by the Board President.

6. **CLOSED SESSION**

- A. **Conference with Legal Counsel-Anticipated Litigation (Government Code §54956.9(d)(2))**

* One Item

(*) - Asterisk indicates a report is attached.

- B. Conference with Legal Counsel - Anticipated Initiation of Litigation (Government Code §54956.9(d)(4))

* One Item

- C. Conference with Labor Negotiators (Government Code §54957.6 and §54957)

Agency Designated Representatives

Tom Kennedy
Karleen Harp
Tracy Largent

Discussions regarding labor negotiations for:

Rainbow Employees Association
Rainbow Association of Supervisors and Confidential Employees
Rainbow Exempt Employees Association

- D. Conference with Legal Counsel - Existing Litigation Pursuant to Government Code Section 54956.9(d)(1)

* *Kessner et al., v. Rainbow Municipal Water District, et al.*

7. REPORT ON POTENTIAL ACTION FROM CLOSED SESSION

Time Certain: 1:00 p.m.

8. REPEAT CALL TO ORDER

9. PLEDGE OF ALLEGIANCE

10. REPEAT ROLL CALL

11. REPEAT REPORT ON POTENTIAL ACTION FROM CLOSED SESSION

12. REPEAT ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)

13. REPEAT INSTRUCTIONS TO ALLOW PUBLIC COMMENT ON AGENDA ITEMS FROM THOSE ATTENDING THIS MEETING VIA TELECONFERENCE OR VIDEO CONFERENCE

CHAIR TO READ ALOUD - "If at any point, anyone would like to ask a question or make a comment and have joined this meeting with their computer, they can click on the "Raise Hand" button located at the bottom of the screen. We will be alerted that they would like to speak. When called upon, please unmute the microphone and ask the question or make comments in no more than three minutes.

Those who have joined by dialing a number on their telephone, will need to press *6 to unmute themselves and then *9 to alert us that they would like to speak.

A slight pause will also be offered at the conclusion of each agenda item discussion to allow public members an opportunity to make comments or ask questions."

(*) - Asterisk indicates a report is attached.

**14. ORAL/WRITTEN COMMUNICATIONS FROM THE PUBLIC
OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD REGARDING
ITEMS NOT ON THIS AGENDA (Government Code § 54954.2).**

Under Oral Communications, any person wishing to address the Board on matters not on this agenda should indicate their desire to speak or may email or mail their comments to the Board Secretary one hour before the Open Session scheduled start time. All written public comments received will be read to the Board during the appropriate portion of the meeting. No action will be taken on any oral communications item since such item does not appear on this Agenda, unless the Board of Directors makes a determination that an emergency exists or that the need to take action on the item arose subsequent to posting of the Agenda (Government Code §54954.2). Speaking time shall generally be limited to three minutes unless a longer period is permitted by the Board President.

Time Certain 1:00 p.m. Public Hearings

***15. PUBLIC HEARINGS**

A. PUBLIC HEARING TO SOLICIT PUBLIC INPUT ON THE DRAFT 2020 WATER SHORTAGE CONTINGENCY PLAN (WSCP) INCLUDING DISCUSSION AND POSSIBLE ACTION ON ADOPTION OF RESOLUTION NO. 21-10, APPROVING THE DISTRICT'S DRAFT 2020 WSCP

(The District has updated its Water Shortage Contingency Plan in accordance with the requirements of the California Urban Water Management Planning Act and California Water Code. A public hearing will be held for public input and the Board may consider approving the draft report and adopting the associated resolution.)

B. PUBLIC HEARING TO SOLICIT PUBLIC INPUT ON THE DRAFT 2020 URBAN WATER MANAGEMENT PLAN (UWMP) INCLUDING DISCUSSION AND POSSIBLE ACTION ON ADOPTION OF RESOLUTION NO. 21-11, APPROVING THE DISTRICT'S DRAFT 2020 UWMP

(The District has updated its Urban Water Management Plan in accordance with the requirements of the California Urban Water Management Planning Act and California Water Code. A public hearing will be held for public input and the Board may consider approving the draft report and adopting the associated resolution.)

16. EMPLOYEE RECOGNITIONS

A. Karleen Harp (5 Years)

***17. APPROVAL OF MINUTES**

A. April 27, 2021 - Regular Board Meeting

***18. BOARD OF DIRECTORS' COMMENTS/REPORTS**

Directors' comments are comments by Directors concerning District business, which may be of interest to the Board. This is placed on the agenda to enable individual Board members to convey information to the Board and to the public. There is to be no discussion or action taken by the Board of Directors unless the item is noticed as part of the meeting agenda.

A. President's Report (Director Hamilton)

(*) - Asterisk indicates a report is attached.

- B. Representative Report (Appointed Representative)
 - 1. SDCWA
 - A. Summary of Board Meeting April 22, 2021
 - 2. CSDA
 - 3. LAFCO
 - 4. San Luis Rey Watershed Council
 - 5. Santa Margarita River Watershed Watermaster Steering Committee
 - 6. ACWA
- C. Meeting, Workshop, Committee, Seminar, Etc. Reports by Directors (AB1234)
 - 1. Board Seminar/Conference/Workshop Training Attendance Reports
- D. Directors Comments
- E. Legal Counsel Comments
 - 1. Attorney Report: Brown Act and CEQA Update 150152-0005

19. COMMITTEE REPORTS

- A. Budget and Finance Committee
- B. Communications and Customer Service Committee
- C. Engineering and Operations Committee

PRESENTATIONS

20. COST OF SERVICE PRESENTATION

21. OPERATING AND CAPITAL BUDGET PRESENTATION

BOARD ACTION ITEMS

- *22. DISCUSSION AND POSSIBLE ACTION TO CHANGE PROPERTY AND LIABILITY COVERAGE LIMITS TO MITIGATE DRASTIC PREMIUM INCREASES**
(This item is to provide the Board with an opportunity to consider directing staff to reduce the liability coverage from \$10 million to \$5 million per occurrence.)
- 23. DISCUSSION AND POSSIBLE ACTION TO APPROVE A THREE-YEAR PROFESSIONAL SERVICES AGREEMENT FOR THE PROCUREMENT AND INSTALLATION OF SUPERVISORY CONTROL AND DATA ACQUISITION RELATED INSTRUMENTATION, RADIOS, SWITCHES, ENCLOSURES AND THE PROGRAMMING OF THIS EQUIPMENT**
(Parts of the District's (SCADA) system are outdated and are in need of upgrade. To date, Staff has been working on the required SCADA upgrades; however, these staff are often called off to assist on emergency situations and attend to higher priority failures within the system. The proposed professional services agreement will allow for the necessary upgrades to be completed by a consultant.)
- *24. DISCUSSION AND POSSIBLE ACTION TO APPROVE A LEASE AGREEMENT FOR THE SITE OF THE BONSALL RESERVOIR**
(The Bonsall Reservoir has not been utilized as a part of the District's potable water distribution system for many years. The proposed lease agreement allows for use of the property for agricultural purpose for the appraised market rate.)

(*) - Asterisk indicates a report is attached.

- *25. **CONSIDER APPROVAL OF AN AGREEMENT FOR OUT OF AGENCY SERVICE TO TRANSFER WATER AND WASTEWATER SERVICE FUNCTIONS FOR APN 123-230-46-00 FROM RAINBOW MUNICIPAL WATER DISTRICT TO FALLBROOK PUBLIC UTILITIES DISTRICT**
(A property owner within the RMWD Service Area has requested to be served by FPUD because the FPUD facilities are more accessible for their specific property. Approval of an Agreement for Out-of-Agency Service by both RWMD and FPUD will allow the customer to be served by FPUD.)
- 26. **DISCUSSION AND POSSIBLE ACTION TO APPROVE THE INSTALLATION OF A HELI-HYDRANT FIRE PROTECTION SYSTEM AT PALA MESA TANK SITE**
(Over the last six months, staff from RMWD, Cal-Fire, and North County Fire have worked diligently to find an ideal site for a Heli-Hydrant. If approved, this will be the first Heli-Hydrant in the County and will supply unprecedented protection against wildfires to North San Diego County.)
- *27. **DISCUSSION AND POSSIBLE ACTION REGARDING SPECIAL DISTRICT BALLOT FORM FROM SAN DIEGO LOCAL AGENCY COMMISSION (LAFCO) ALTERNATE SPECIAL DISTRICT MEMBER ON LAFCO COMMISSION**
(RMWD received an election packet from LAFCO inviting each special district to cast a ballot. Each district is to cast only one vote for each nominee on the ballot and vote certification form to avoid being disregarded. The deadline for receipts of the ballots is Friday, July 2, 2021.)
- 28. **BOARD MEMBER REQUESTS FOR AUTHORIZATION TO ATTEND UPCOMING MEETINGS / CONFERENCES / SEMINARS**

BOARD INFORMATION ITEMS

- *29. **RECEIVE AND FILE INFORMATION AND FINANCIAL ITEMS**
 - A. **General Manager Comments**
 - 1. Meetings, Conferences and Seminar Calendar
 - B. **Operations Comments**
 - 1. Operations Report
 - C. **Engineering Comments**
 - 1. Engineering Report
 - 2. As-Needed Services Expenditures Summary
 - 3. RMWD Sewer Equivalent Dwelling Units (EDU's) Status
 - D. **Human Resource & Safety Comments**
 - 1. Human Resources Report
 - E. **Finance Comments**
 - 1. Board Information Report
 - 2. Budget vs. Actuals
 - 3. Fund Balance & Developer Projections
 - 4. Treasury Report
 - 5. Five Year Water Purchases Demand Chart
 - 6. Water Sales Summary
 - 7. Check Register
 - 8. Directors' Expenses Report
 - 9. Credit Card Breakdown
 - 10. RMWD Properties
- 30. **LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT REGULAR BOARD MEETING**

(*) - Asterisk indicates a report is attached.

31. ADJOURNMENT - To Tuesday, June 22, 2021 at 1:00 p.m.

ATTEST TO POSTING:

Pam Moss
Pam Moss
Secretary of the Board

5-19-21 @ 800 a.m.
Date and Time of Posting
Outside Display Cases

(*) - Asterisk indicates a report is attached.

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

PUBLIC HEARING TO SOLICIT PUBLIC INPUT ON THE DRAFT 2020 WATER SHORTAGE CONTINGENCY PLAN (WSCP) INCLUDING DISCUSSION AND POSSIBLE ACTION ON ADOPTION OF RESOLUTION NO. 21-10, APPROVING THE DISTRICT'S DRAFT 2020 WSCP

BACKGROUND

The District is required to update its Water Shortage Contingency Plan (WSCP) every five years in accordance with the requirements of California's Urban Water Management Planning Act (Act) and related provisions of the California Water Code. The WSCP is part of the Urban Water Management Plan (UWMP). The WSCP documents how the District will respond in the event of a water shortage. A water shortage means that the available water supply cannot sufficiently meet the normally expected customer water use at a given point in time. This WSCP provides guidance for managing and mitigating a potential shortage of water supply. In the event of any water shortage emergencies, this WSCP should be followed in coordination with the District's emergency response plan. The last WSCP was prepared in 2015.

In July of 2020, the District executed a professional services agreement (PSA) to prepare the 2020 WSCP and UWMP with Brown and Caldwell (B&C) Team that included experts in the field that helped successfully prepare the District's 2015 WSCP. On March 24, 2021, the District sent out 60-Day Notice of Preparation for both the WSCP and UWMP to cities and county within the District's water service area per California Water Code Section 10621. The notice informed the agencies that the District will be reviewing the WSCP/UWMP and considering amendments or changes through a public hearing process. The letter further stated that RMWD will hold public hearings for the WSCP/UWMP within 60 days or more from the date of the letter. A 14-day notice for public hearing and public review period of the WSCP/UWMP was advertised on May 11, 2021 in the Daily Journal and the Draft WSCP/UWMP posted on the District's website. A presentation was also given to the Engineering and Operations Committee on May 5, 2021 on the Draft 2020 WSCP and UWMP. The next section provides a description of the 2020 WSCP.

DESCRIPTION

As described in the previous section, the District has updated its WSCP/UWMP and released the Draft plan on May 11, 2021 for a 14-day public review. It is worth noting that the WSCP is Appendix D of the UWMP and per California Water Code Section 10640-10645 must be adopted separately from the UWMP. The Draft 2020 UWMP is described in more detail in a separate Board Action Letter.

The Draft 2020 WSCP was prepared in compliance with the California Water Code and conforms with DWR's 2020 UWMP Guidebook. The plan includes the following 12 sections (Exhibit A):

Section 1: Introduction - background information.

Section 2: Water Supply Reliability Analysis Summary - reliability of supplies and key issues.

Section 3: Annual Water Supply and Demand Assessment Procedures – annual reporting and forecasting near term water supply.

Section 4: Six Standard Water Shortage Stages – describes the water shortage levels.

Section 5: Shortage Response Actions- actions to reduce gap between supply and demand.

Section 6: Emergency Response Plan- response plan for catastrophic events impacting water supply.

Section 7: Communication Protocols – District’s protocol in event of water shortage conditions.

Section 8: Compliance and Enforcement – process during water shortage conditions.

Section 9: Legal Authorities– authority to enforce demand reduction measures.

Section 10: Financial Consequences of WSCP Activation – estimate of cost with revenue loss and mitigation actions.

Section 11: Monitoring and Reporting – implementation of the WSCP.

Section 12: WSCP Refinement, Adoption, Submittal, and Availability – how plan is adopted and publicly available.

Appendix A: Seismic Risk Assessment and Mitigation Plan – seismic risks to critical assets and mitigation measures.

The primary component of the WSCP is how it addresses water shortage scenarios. The plan addresses six stages of drought. Water shortage scenarios are defined in six (6) levels ranging from Level 1 – less than 10% shortage of available water supply to Level 6 – more than 50% shortage of available water supply. The District’s WSCP has identified 25 demand reductions measures to be implemented at varying stages of water shortage levels to offset a potential shortage in supply. The demand reduction actions range from limit of landscape irrigation on specific days to keeping decorative water features such as fountains drained and dry. It also includes compliance and enforcement measures. It is important to note that the District’s UWMP and WSCP efforts have verified that the District’s water supplies are adequate to serve existing and planned demands over the next 20 years, for both normal and dry year conditions.

As mentioned earlier in the report, the Draft 2020 WSCP/UWMP was noticed in the Daily Journal and the plans provided for public review and input. The Board meeting will require holding a public hearing, taking testimony, addressing public comments at the board meeting, and consider adopting resolution 21-10. If board or public comments are not able to be addressed adequately at the board meeting, updates to the Draft 2020 WSCP will be made and brought back to the Board for discussion and consideration of adoption at the June 2021 Board Meeting.

Lastly, the District’s 2016 Drought Ordinance will be required to be updated to conform with the 2020 WSCP/UWMP. The District will wait until DWR accepts the 2020 UWMP including the WSCP before updating the ordinance should there be comments and or modifications to the plan that would impact the ordinance update. It is anticipated that District staff will be returning to the board in 2022 to present an updated draft ordinance

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area One and Five: Water Resources and Customer Service. The 2020 WSCP/UWMP will assess current demands and supplies over a 20-year planning horizon and addresses methods to ensure reliable and adequate water service to meet the needs of our customers. The 2020 WSCP provides guidance for managing and mitigating a potential shortage of water supply.

ENVIRONMENTAL

In accordance with CEQA guidelines Section 15378, the action before the Board does not constitute a “project” as defined by CEQA.

BOARD OPTIONS/FISCAL IMPACTS

The current PSA amount for the 2020 UWMP/WSCP with B&C is \$85,590 that includes Change Order #1 approved by the Board of Directors on March 23, 2021. Adequate funds are available under Engineering Professional Services GL Account 03-91-70000 Project Number 300018, which is budgeted at \$257,500.

1) Option 1:

- Open public hearing, take testimony, and close public hearing.
- Adopt resolution 21-10, approving the 2020 WSCP with any amendments presented at the public hearing.
- Make a determination that the action identified herein does not constitute a “project” as defined by CEQA.

2) Option 2:

- Address board and public comments on the WSCP and return to the June 22, 2021 board meeting with an amended 2020 WSCP.

3) Option 3:

- Provide other direction to staff.

STAFF RECOMMENDATION

Staff recommends Option 1.



Chad Williams
Engineering and CIP Program Manager

05/25/2021

RESOLUTION NO. 21-10

**RESOLUTION OF THE BOARD OF DIRECTORS OF THE
RAINBOW MUNICIPAL WATER DISTRICT
ADOPTING 2020 WATER SHORTAGE CONTINGENCY PLAN**

WHEREAS, the Urban Water Management Planning Act (Water Code section 10620 – 10645) requires every urban water supplier as defined in the act to prepare and adopt a Water Shortage Contingency Plan as part of its urban water management plan (Water Code section 10632); and

WHEREAS, Rainbow Municipal Water District is an urban water supplier within the meaning of the act; and

WHEREAS, the District has prepared its 2020 Water Shortage Contingency Plan, made the plan available for public inspection, and held a public hearing thereon following publication within the jurisdiction of the District of a notice of the time and place of the hearing pursuant to Section 6066 of the Government Code; and

WHEREAS, it is in the interest of the District to adopt a revised water shortage contingency plan;

NOW THEREFORE BE IT RESOLVED DETERMINED AND ORDERED by the Board of Directors of the Rainbow Municipal Water District as follows:

1. That the WATER SHORTAGE CONTINGENCY PLAN FOR RAINBOW MUNICIPAL WATER DISTRICT, a copy of which is on file with the District be approved and adopted as the plan required by the Urban Water Management Planning Act.
2. That the District shall implement its updated plan.
3. That District staff is authorized and directed to file with the Department of Water Resources of the State of California a copy of the District's updated plan by July 1, 2021.

PASSED AND ADOPTED at an adjourned regular meeting of the Board of Directors of the Rainbow Municipal Water District held on May 25, 2021 by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

Hayden Hamilton, Board President

ATTEST:

Dawn Washburn, Board Secretary

DRAFT

2020 Water Shortage Contingency Plan

Prepared for
Rainbow Municipal Water District
Fallbrook, California
May 2021



Prepared By:



In association with:



This is a draft and is not intended to be a final representation of the work done or recommendations made by Brown and Caldwell. It should not be relied upon; consult the final report.



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List of Abbreviations

AFY	acre-feet per year
AMI	advanced metering infrastructure
Annual	
Assessment	annual water supply and demand assessment
CWC	California Water Code
District	Rainbow Municipal Water District
DWR	Department of Water Resources
EOC	Emergency Operations Center
ERP	Emergency Response Plan
SCADA	supervisory control and data acquisition system
PSAWR	Permanent Special Agriculture Water Rate
UWMP	Urban Water Management Plan
Water Authority	San Diego County Water Authority
WSCP	Water Shortage Contingency Plan

Section 1

Introduction

The Water Shortage Contingency Plan (WSCP) documents how Rainbow Municipal Water District (District) will respond in the event of a water shortage. A water shortage means that the available water supply cannot sufficiently meet the normally expected customer water use at a given point in time. This WSCP provides guidance for managing and mitigating a potential shortage of water supply. In the event of any water shortage emergencies, this WSCP should be followed in coordination with the District's emergency response plan.

The San Diego County Water Authority (Water Authority) is a wholesale water supplier that provides 100 percent of the supply to the District in normal years. The Water Authority has their own WSCP that guides their response to a water shortage.

The WSCP is an element of the District's Urban Water Management Plan (UWMP), both of which are updated every five years in accordance with the California Water Code and submitted to the Department of Water Resources (DWR). The WSCP must be able to be amended separately from the UWMP. As such there is the flexibility to be able to separate the WSCP from the UWMP for future needs.

The WSCP is structured as recommended by DWR in the 2020 Urban Water Management Plan Guidebook. The WSCP consists of the following elements:

- **Section 2:** Water Supply Reliability Analysis Summary
- **Section 3:** Annual Water Supply and Demand Assessment Procedures
- **Section 4:** Six Standard Water Shortage Stages
- **Section 5:** Shortage Response Actions
- **Section 6:** Emergency Response Plan
- **Section 7:** Communication Protocols
- **Section 8:** Compliance and Enforcement
- **Section 9:** Legal Authorities
- **Section 10:** Financial Consequences of WSCP Activation
- **Section 11:** Monitoring and Reporting
- **Section 12:** WSCP Refinement, Adoption, Submittal, and Availability

Section 2

Water Supply Reliability Analysis Summary

The water supply reliability analysis is documented in Section 7 of the UWMP. To comply with the Water Code, the analysis is summarized in this section. The reliability of supplies and the key issues that may create shortage conditions relative to the District's water supply portfolio are summarized below.

2.1 Water System Reliability

The water system reliability analysis to meet demands in normal, single dry, and multiple dry years over a five-year drought period is described narratively and in tabulated format in Section 7 of the UWMP. Historically, the Water Authority supply has been very reliable with only occasional supply reductions during droughts impacting California or the Colorado River Watershed. The District anticipates there will be no supply shortages within the District's service area in a normal year, single dry-year or multiple dry- years through 2045.

2.2 Key Risks for a Potential Shortage Condition

Though the District's supply is highly reliable, there are scenarios that could result in the District declaring water shortage stage conditions. For example, water shortage stages may be declared if the California Governor enacts an Executive Order calling for water demand reductions. Below is a list of the key risks to the District that could potentially result in a shortage condition.

- Regional drought circumstances that lead to water supply allocations/cutbacks from the Water Authority
- Regulatory restrictions enacted upon imported supplies
- Earthquakes or other hazards that may cause catastrophic failure of conveyances for water supplies imported via the Water Authority, which partially originate from the State Water Project or the Colorado River Aqueduct

Section 3

Annual Water Supply and Demand Assessment Procedures

The annual water supply and demand assessment (Annual Assessment) shall be conducted annually and submitted to DWR on or before July 1 of each year beginning with the first Annual Assessment due by July 1, 2022. The Annual Assessment forecasts near-term water supply conditions to ensure shortage response actions are triggered in a timely manner. The Annual Assessment is submitted to DWR with information on anticipated water supply shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with this WSCP.

This section presents the decision-making process that the District will use each year to determine its water supply reliability. The District will conduct an annual water supply and demand assessment that follows the steps illustrated in Figure 3-1 and described below. The decision-making process also includes the key data inputs and assessment methodology that will be used to evaluate the District's water supply and demand. The evaluation criteria, unconstrained demand, water supply, infrastructure considerations, and other factors are included in the steps. Once DWR finalizes the Annual Assessment guidelines, this process may be modified.

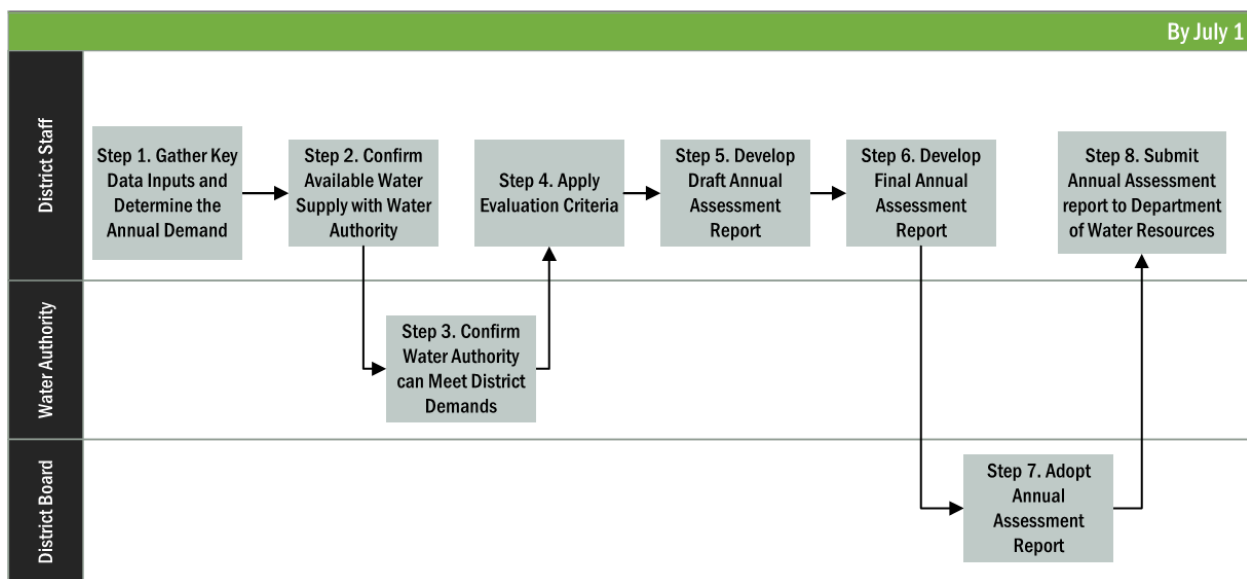


Figure 3-1. Annual Assessment Procedure and Decision-Making Process

Step 1. District Gathers Key Data Inputs and Determines the Unconstrained Demand

Prior to March 1st of each year, the District will estimate unconstrained customer demand for the current year and one dry year using a method similar to that used by the District for its 2020 UWMP water demand projections. DWR defines unconstrained customer demand as the District's water use before any projected demand reduction response actions are implemented due to WSCP activation. The projections shall be based on recent water use, while considering impacts on demand from

changing agricultural demands, climate patterns, potential service area expansion or population growth, and other influencing factors.

Step 2. District Coordinates with Water Authority to Confirm Available Water Supply

Prior to March 1st of each year, the District will coordinate with the Water Authority to confirm that their available water supply will meet the District's unconstrained demand. The District receives 100 percent of its supply from the Water Authority without supply limitations in normal years. In times of drought, the Water Authority may determine a reduced annual water allocation for their member agencies based on a predetermined methodology.

Step 3: Water Authority Confirms Supply

The Water Authority will confirm whether the available water supply can meet the District's water demands for the current year and one subsequent dry year. The Water Authority will determine their methodology for this analysis, but the basis of this methodology is as follows:

- Consider hydrological and regulatory conditions in the current year when making their determination.
- Consider how dry-year hydrological and regulatory conditions in the subsequent year may impact their water supplies
- Identify any water transmission or storage infrastructure constraints that may impact water supply deliveries to the District
- Provide descriptive text of the available water supply to the District for both scenarios

Step 4. Apply Evaluation Criteria

The Annual Assessment is based on evaluating the key data inputs to determine water supply reliability. The water supply and demand information will be compared in an Excel table or other tool using a DWR specified timestep (i.e., monthly data, quarterly, or annual data), and reliability will be assessed by considering local conditions, potential supply uncertainties, and any possible constraints on water distribution infrastructure from events such as planned maintenance, construction, equipment outages, etc.

Step 5. Develop Draft Annual Assessment Report

The District will compile the draft Annual Assessment report using the key data inputs, evaluation criteria, and results of the analysis. The report will contain a description and quantification of each source of water supply for the current year and one subsequent dry year. The report will also identify and quantify any anticipated water supply shortages. If any water shortages are anticipated, the report will indicate which water shortage level of the Water Shortage Contingency Plan to recommend for initiation.

Step 6. Develop Final Annual Assessment Report

The District will conduct an internal review and approval process of the draft, in order to prepare the Final Annual Assessment Report. The Final Report will be submitted to the District's Board of Directors for approval.

Step 7. Adopt Annual Assessment Report

The District's Board of Directors will review and adopt the Annual Assessment report, declaring a water shortage if necessary.

Step 8. Submit Annual Assessment Report to DWR

The District will submit the Annual Assessment report to DWR on or before July 1st of each year.

Section 4

Six Standard Water Shortage Stages

The District has developed a six-stage WSCP that defines the shortage levels based upon the percent of water supply shortage in comparison to unconstrained demand, as shown in Table 4-1. The District's WSCP contains six-stages to provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions. The six standard water shortage levels correspond to progressively increasing estimated shortage conditions and align with the response action the District would implement to meet the severity of the impending shortages.

Table 4-1. Water Shortage Contingency Plan Levels (DWR Table 8-1)		
Shortage Level	Percent Shortage Range ¹	Water Shortage Condition
1	Up to 10%	Water supply conditions are sufficient to meet 90 to 100% of projected unconstrained demand for the next two years.
2	Up to 20%	Water supply conditions are sufficient to meet 80 to 90% of projected unconstrained demand for the next two years.
3	Up to 30%	Water supply conditions are sufficient to meet 70 to 80% of projected unconstrained demand for the next two years.
4	Up to 40%	Water supply conditions are sufficient to meet 60 to 70% of projected unconstrained demand for the next two years.
5	Up to 50%	Water supply conditions are sufficient to meet 50 to 60% of projected unconstrained demand for the next two years.
6	>50%	Water supply conditions are sufficient to meet less than 50% of projected unconstrained demand for the next two years.

Notes: Water shortage condition is based on unconstrained demand compared to projected supply. Projected supply is based on water deliveries from the Water Authority.

Section 5

Shortage Response Actions

Shortage response actions are aligned with the defined shortage levels defined in Table 4-1. Shortage response actions include locally appropriate supply augmentation actions and locally appropriate demand reduction actions such as operational changes, mandatory prohibitions against specific water use practices, and state mandated prohibitions. Each shortage response action is intended to reduce a portion of the gap between supplies and demand. The percent of water demand reduction for each action is estimated in Section 5.1.

5.1 Demand Reduction Actions

Prioritized use of available potable water during shortages is based on the difference between basic needs (i.e., drinking, toilet flushing) and discretionary uses (i.e., landscape irrigation), and legal requirements set forth in the California Water Code (CWC), Sections 350-358. Water reduction actions implemented during shortages will not affect the following water use types:

- Minimum health and safety allocations for interior residential needs (includes single family, multifamily, hospitals and convalescent facilities, retirement and mobile home communities, student housing, firefighting, and public safety)
- Commercial, industrial, institutional/governmental operations, where water is used for manufacturing, to meet minimum health and safety allocations for employees and visitors, or to maintain jobs and economic base of the community, but not for landscape uses
- Commercial growers or nurseries

Locally appropriate demand reduction actions to adequately respond to shortages are specified in Table 5-1 on page 5-3. Table 5-1 includes:

- Demand reduction actions by shortage level. All demand reduction actions in lower levels continue to be implemented as the shortage level increases, unless otherwise noted in the table.
- Estimated annual reduction in water by volume and percent for each demand reduction action.
- Customer Outreach/Penalty, charge, or other enforcement for each demand reduction action.

The assumptions and references for the estimated annual reduction in water by volume are provided in Attachment A.

5.1.1 Special Water Feature Distinction

Water features that are not pools or spas are analyzed and defined separately from pools and spas in the WSCP. Non-pool or non-spa water features including ponds, lakes, waterfalls, and fountains that do not require the use of potable water for health and safety considerations, are defined as decorative water features and recreational water features and are included as such in the response actions and are enforced and monitored as part of the WSCP process.

Under all conditions and stages, the WSCP prohibits using potable water in an ornamental fountain or other decorative water feature, except where the water is part of a recirculating system. At Shortage Level 4 all decorative water features that use potable water must be drained and kept dry.

5.2 Supply Augmentation and Other Actions

Locally appropriate supply augmentation actions and operational changes are listed in Table 5-2. Because the District is reliant on water deliveries from the Water Authority, localized supply augmentation options are currently limited.

Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1 through 5	Landscape - Restrict or prohibit runoff from landscape irrigation	43	0.30	Prohibit the application of potable water on outdoor landscapes in a manner that causes excessive runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	Other - Require automatic shut off hoses	43	0.30	Prohibit the use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use. ^a	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	Other - Prohibit use of potable water for washing hard surfaces	87	0.61	Prohibit the application of potable water to driveways and sidewalks.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	Water Features - Restrict water use for decorative water features, such as fountains	43	0.30	Prohibit the use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 5	Landscape - Other landscape restriction or prohibition	43	0.30	Prohibit the application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall. ^a	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	CII - Restaurants may only serve water upon request	4	0.03	Prohibit the serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1	Landscape - Limit landscape irrigation to specific days	760	5.31	Limit residential and commercial landscape irrigation to no more than three (3) assigned days per week on a schedule established by the General Manager and posted by the District. ^a	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 5	Landscape - Prohibit certain types of landscape irrigation	16	0.11	Prohibit the irrigation with potable water of ornamental turf on public street medians.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 5	Landscape - Prohibit certain types of landscape irrigation	129	0.90	Prohibit the irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1

Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
				Building Standards Commission and the Department of Housing and Community Development.	
2 through 5	Landscape - Limit landscape irrigation to specific days	1,140	7.97	Limit residential and commercial landscape irrigation to no more than two (2) assigned days per week on a schedule established by the General Manager and posted by the District. ^a	Customer Outreach/Penalty
2 through 5	Landscape - Limit landscape irrigation to specific times	597	4.17	Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to weather-based controllers, drip/micro-irrigation systems and stream rotor sprinklers. ^a	Customer Outreach/Penalty
2 through 6	Offer Water Use Surveys	574	4.01	Offer District customers water use surveys to identify existing passive leaks or inefficiencies in plumbing or irrigation systems.	Incentive
3 through 6	Moratorium or Net Zero Demand Increase on New Connections	129	0.90	No new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) shall be issued, unless (1) a valid, unexpired building permit has already been issued for the project; (2) In the opinion of the District Board of Directors the project is necessary to protect the public's health, safety, and welfare; or (3) The applicant provides substantial evidence of an enforceable binding commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.	None
3 through 5	Landscape - Prohibit certain types of landscape irrigation	557	3.89	Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 5 (b) (1), on the same schedule set forth in section 5 (b) (1) by using a bucket, hand-held hose with positive shut-off nozzle, or low-volume non-spray irrigation. ^a	Customer Outreach/Penalty



Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3 and 4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	132	0.92	Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the General Manager.	Customer Outreach/Penalty
3 through 6	Other water feature or swimming pool restriction	43	0.30	Stop filling or re-filling swimming pools, spas, ornamental fountains, lakes, ponds, or other water features, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a drought response level under this ordinance.	Customer Outreach/Penalty
4 through 5	Landscape - Limit landscape irrigation to specific days	611	4.27	During the months of November through May, landscape irrigation is limited to no more than once per week on a schedule established by the General Manager and posted by the District. This section shall not apply to commercial growers or nurseries.	Customer Outreach/Penalty
4 through 6	Other water feature or swimming pool restriction	43	0.30	All decorative water features that use potable water must be drained and kept dry	Customer Outreach/Penalty
4 through 6	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	43	0.30	Stop washing vehicles except at commercial carwashes that recirculate water, or by high pressure/low volume wash systems.	Customer Outreach/Penalty
4	Other	1,322	9.24	The District may establish up to a 10% reduction in water allocation for any property served by the District. ^b	Customer Outreach/Penalty
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	66	0.46	Repair all leaks within forty-eight (48) hours of notification by the District unless other arrangements are made with the General Manager.	Customer Outreach/Penalty
5	Other	2,645	18.84	The District may establish up to a 20% reduction in water allocation for any property served by the District ^b	Customer Outreach/Penalty
6	Landscape - Prohibit all landscape irrigation	1,942	13.57	Stop all landscape irrigation ^{ac}	Customer Outreach/Penalty
6	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	397	2.77	Repair all water leaks within twenty-four (24) hours of notification by the District unless other arrangements are made with the General Manager	Customer Outreach/Penalty



Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
6	Other	3,967	27.72	The District may establish up to a 30% reduction in water allocation for any property served by the District. ^b	Customer Outreach/Penalty

Notes:

- a. *This reduction action shall not apply to commercial growers or nurseries.*
- b. *The District may establish a water allocation for any property served by the District using a method that does not penalize persons for previous implementation of conservation methods or the installation of water saving devices. The decision to establish a water allocation and the method utilized to determine the amount of the allocation shall be at the sole discretion of District.*
- c. *If recycled water is available, it may be used to (1) maintain trees and shrubs on a limited schedule and by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation, (2) maintain existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection agency having jurisdiction over the property to be irrigated, (3) maintain existing landscaping for erosion control, (4) maintain landscaping within active public facilities, including parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week, (5) provide watering of livestock, and (6) supply public works projects and actively irrigated environmental mitigation projects.*



Table 5-2. Supply Augmentation and Other Actions (DWR Table 8-3)				
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference
1 through 6	Expand Public Information Campaign	217.30	1.5	Offer workshops, increased use of bill inserts
2 through 6	Expand Public Information Campaign	43.46	0.3	Promotion of District-wide advanced metering infrastructure (AMI) hourly water use data to communicate with customers. The District offers rebates for AMI capable meters to their customers so they can easily access insights into their water use.



5.3 Shortage Response Action Effectiveness

The purpose of implementing demand reduction and supply augmentation actions is to reduce water demand and increase other sources of supply to make up for the water shortage gaps. If implemented, the demand reduction and supply augmentation actions outlined in Table 5-1 and Table 5-2 will allow the District to sufficiently meet the water shortage gaps at each shortage level. Table 5-3 presents the WSCP shortage gap reduction goals and compares them to the total shortage gap reduction possible if all demand reduction and supply augmentation actions are implemented for the associated shortage level.

Table 5-3. Shortage Gap Reduction from Demand Reduction and Supply Augmentation Actions						
	Shortage Level					
	1	2	3	4	5	6
WSCP Shortage Gap Reduction Goal (%)	10	20	30	40	50	>50
Shortage Gap Reduction due to Demand Reduction Actions (%)^a	8	19	28	42	50	55
Shortage Gap Reduction due to Supply Augmentation Actions (%)^a	2	2	2	2	2	2
Total Shortage Gap Reduction (%)	10	21	30	44	52	57

a. Based upon assumed reduction percentages from Table 5-1 and compared to total actual water use for 2020.

b. Based upon assumed supply augmentation percentages from Table 5-2 and compared to total actual water use for 2020.

Section 6

Emergency Response Plan

A catastrophic water shortage could occur when a natural disaster such as an earthquake results in damage to water supply conveyances, other state water infrastructure, or District water facilities. This could possibly result in deficient water supplies for the region and/or the District. In response to potential natural disasters and other emergencies, the District prepared an Emergency Response Plan (ERP) in 2018. The ERP includes standardized response and recovery procedures to minimize customer water service interruptions and to prevent, minimize, and mitigate human injury and infrastructure damage resulting from emergencies or disasters of human-made or natural origin. The information contained in the ERP is intended to prepare and guide staff and inform emergency response agencies. The ERP includes plans, procedures, lists, and identification of equipment that may be useful during an emergency. The ERP includes the following sections:

- **Section 1:** Introduction
- **Section 2:** Emergency Planning Process
- **Section 3:** Mutual Aid System
- **Section 4:** Water System Information and Hazard Identification
- **Section 5:** Preparedness Phase Operations
- **Section 6:** Response Phase Overview
- **Section 7:** EOC Staff Assignments and Responsibility
- **Section 8:** Restoration and Recovery Phase
- **Section 9:** Mitigation Phase

Additionally, the ERP provides specific guidelines for the four items listed below. These guidelines will give District emergency responders support when determining the necessary response actions to manage an incident in a timely manner.

- Establishing an Emergency Operations Center (EOC) including the location and resources required, as well as a secondary EOC if the primary EOC is compromised.
- Organization and responsibilities of the EOC personnel to evaluate and direct the overall response to the emergency.
- Strategies for emergency response, repair, and restoration of the water system.
- Responsibilities of District personnel during the emergency response.

6.1 Seismic Risk Assessment and Mitigation Plan

A seismic risk assessment of the District's critical water system assets, including storage tanks, pump stations, and critical transmission and distribution pipelines was conducted. This assessment includes a description of the likelihood of occurrence near the critical facilities, a list of the assets that may be impacted, potential impacts, and suggested mitigation measures. The seismic risk assessment is documented as a technical memorandum, and it is included as Attachment A.

Section 7

Communication Protocols

Timely and effective communication is a key element of water shortage contingency planning implementation. The District's communication protocols and procedures in the event of a water shortage are intended for activation only with District Board authorization. Under a water shortage condition, the District would assess the actual water supply and demand information and conditions to determine whether activating the WSCP is warranted. If activation is warranted, the General Manager will call for an emergency Board meeting to request District Board authorization, if needed. The District would recommend activation of the appropriate stage and request District Board authorization to initiate the measures necessary to achieve the appropriate demand reduction target. The public would be encouraged to understand and be involved in the decision-making process and provide feedback to the District Board on such an action.

The list below outlines the specific communication methods to inform customers, the public, interested parties, and local, regional, and the state government of any current or anticipated water shortage stage and the associated water demand reduction actions:

- Customers, the public, and other interested parties:
 - Announcements on District website homepage
 - Press releases via the River Village News
 - Public information and awareness program with workshops, park signage, water bill inserts, and educational programs at schools
- Local, regional, and state government
 - Email officials at cities and counties impacted by the water shortage
 - Email or place phone call to designated officials at regional and state level (DWR)

Section 8

Compliance and Enforcement

The District adopted Ordinance No 16-10: An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program in June 2016 which provides a description of penalties and the District's authority to fine or terminate water service. The ordinance will be revised in accordance with the water shortage stages, demand reduction actions, and other measures outlined in this WSCP. The ordinance will go before the District's Board for approval after the WSCP has been revised and adopted.

8.1 Ensuring Ordinance Compliance

When water shortage stages are enacted, the District will ensure compliance with the ordinance by launching education and communication programs with District customers. If violations are identified, the fines described in Section 8.2 may apply if the offender has already been issued a warning. In the event of a water shortage, customers participating in the Permanent Special Agriculture Water Rate (PSAWR) program must affirmatively accept the condition that service may be interrupted during water supply shortages before other classes of water service are interrupted. During shortages, the District notifies customers participating in PSAWR through, newsletters, mailers, and the District website.

8.2 Enforcement of Demand Reduction Actions

Any person who uses, causes to be used, or permits the use of water in violation of the ordinance is guilty of an offense punishable as outlined below. Each day that a violation of the ordinance occurs is a separate offense.

Similarly, the District will ensure compliance with and enforce provisions of the WSCP reduction actions taken at each shortage level as noted in Table 5-1 by the following means:

- Prior to issuing administrative fines for violations, the District will first conduct public outreach and issue a warning to customers not in compliance. The District will provide the customer with a fact sheet about water shortage demand reduction actions to explain why the measures are in place.
- Administrative fines may be levied for each subsequent violation, with increasing fees as follows:
 - \$100 for a first violation.
 - \$200 for a second violation within one year from occurrence of the first violation.
 - \$500 for each additional violation within one year of the first violation.
- Installation of a flow-restricting device in the meter.
- Violations may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than 30 days or by a fine not exceeding \$1,000, or by both as provided in CWC section 377.
- Willful violations of the mandatory conservation measures and water use restrictions applicable during a Level 6 Drought Emergency condition may be enforced by discontinuing service to the property at which the violation occurs, as provided by CWC section 356.

All remedies provided for herein shall be cumulative and not exclusive.

8.3 Exemptions and Appeals

If, due to unique circumstances, a specific requirement of this WSCP would result in undue hardship and disproportionate impact to a District customer, then an exemption may be granted or conditionally granted by following the procedures detailed below.

1. **Request an Exemption or Appeal.** The customer shall submit a letter to the District requesting an exemption or appeal.
2. **Provide supporting documentation.** The exemption application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.
3. **Basis is found to support exemption.** An exemption shall be granted only if the District finds, based on the information provided in the application, supporting documents, any additionally requested information, and the District's records of water use information for the property, all of the following:
 - a. The exemption does not grant special privilege inconsistent with those available to all other District customers.
 - b. Unique circumstances specific to the applicant are found to have a disproportionate impact on the property or use that exceeds the impacts to customers generally.
 - c. The granted exemption will not cause harm to adjacent properties and will not impede the District's ability to fulfill the purpose of the WSCP.

The rationale and reason for the exemption request is not common, recurrent, or general in nature.

Approval Authority. The General Manager shall exercise approval authority and act upon any completed application no later than 30 days after submittal and may approve, conditionally approve, or deny the exemption. The applicant requesting the exemption shall be promptly notified in writing of any action taken. Unless specified otherwise at the time an exemption is approved, the variance applies to the subject property during the term of the mandatory shortage response.

Appeals to the District Board of Directors. An applicant may appeal a decision or condition of the General Manager on a variance application. The appeal must be in the form of a written request for a hearing and shall state the grounds for the appeal. At a public meeting, the District Board of Directors shall act as the approval authority and review the appeal. The decision of the District Board of Directors is final.

Section 9

Legal Authorities

The District's legal authority to enforce demand reduction measures during water shortages is codified by local ordinance, Rainbow Drought Ordinance 16-10: An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program.

The District shall declare a water shortage emergency condition in accordance with CWC Chapter 3 (commencing with Section 350) of Division 1 as stated below:

“Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.”

The District shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558.)

Section 10

Financial Consequences of WSCP Activation

The financial consequence of implementing the WSCP include potential revenue reductions and expense increases for the District. The District has estimated the costs associated with the revenue losses and has developed mitigation actions to reduce these impacts.

10.1 Potential Revenue Reductions and Expense Increases

Upon implementation of a shortage stage and the associated reduction actions, the District anticipates that revenues generated from the quantity charge component of customers' bills would be reduced proportionately to the water shortage percentage. In addition to reduced revenues, the District may also experience increased expenses due to the need for staff to carry out monitoring and enforcement actions identified by each shortage stage.

10.2 Mitigation Actions to Address Revenue Reductions

Throughout extended water shortage periods, the District would attempt to avoid rate adjustments.

Potential mitigation actions include:

- Use of financial reserves - The District has financial reserves to address decreased water sales during a water shortage.
- Postponement of capital improvements - The District could delay work on non-essential capital improvements until water sales become more sustainable.

10.3 Cost of Compliance

For the District to ensure its customers comply with the ordinance and CWC Chapter 3.3, Excessive Residential Water Use During Drought, additional costs will be incurred. These costs are associated with the increased costs for monitoring and enforcement of water use reduction measures.

Section 11

Monitoring and Reporting

The District will monitor and report implementation of the WSCP by collecting, tracking, and analyzing appropriate data for the purposes of monitoring reduction in customer water demands, customer compliance, and meeting state reporting requirements. Potable water use figures are recorded daily by District staff. The District operates its water system on a computerized supervisory control and data acquisition system (SCADA), which allows instantaneous viewing of water system conditions.

During a Shortage level 1 or 2, District staff would compare the daily and monthly water distribution totals to the target distribution totals to verify that the appropriate reduction goal is being met. The District Engineering and CIP Program Manager reviews the monthly distribution reports and determines if further action is required to meet demand reduction goals. Monthly distribution reports shall be sent to the District Board. If reduction goals are not met, the District Engineering and CIP Program Manager would notify the District Board so that corrective action is considered and/or taken.

During a Shortage Level 3 and higher, the procedure described above would be followed, with the addition of a weekly distribution report to the General Manager.

Section 12

WSCP Refinement, Adoption, Submittal, and Availability

As part of the District's commitment to ensuring reliable supplies, the WSCP will be adopted by the District Board and made available to the public.

12.1 Refinement Procedures

The WSCP is routinely updated to ensure water demand reduction actions and supply augmentation measures continue to accurately reflect the District's planned response to water shortage outages. The modifications to this WSCP for 2020 were adjusted to comply with the 2019 CWC revisions. Experience with recent drought conditions and recommendations from the Water Authority for regional consistency in water shortage contingency planning also played a role in the revisions to this WSCP.

Review and update of the WSCP shall occur in parallel with the update of the UWMP, at a minimum of every five years. However, the WSCP may also be updated independently of the UWMP and with greater frequency, at the District's discretion.

12.2 Adoption, Submittal, and Availability

The updated WSCP shall be adopted, submitted, and made available as part of the same process for the 2020 UWMP per the CWC requirements. During each WSCP review and update process, the revised WSCP will go through internal review prior to adoption by the District's Board. The WSCP must be reviewed and adopted prior to or in conjunction with the UWMP review and adoption process. The WSCP may also be periodically amended independently of the UWMP, as needed. In either instance, the public review period and adoption process follows that which is defined in Government Code 6066. The associated notifications for the public hearing process and the Board adoption resolution for the WSCP are provided as appendices to the UWMP.

The updated WSCP shall be made available on the District's website no later than 30 days after it is adopted. The WSCP shall also be available as an appendix to the UWMP document, which will be posted to the District's website and DWR's public Water Use Efficiency data portal website. The UWMP and its WSCP appendix will also be submitted to the California State Library and be available for review in hardcopy format in the District's offices during normal working hours.

Attachment A: Seismic Risk Assessment and Mitigation Plan



Technical Memorandum

450 B Street, Ste 1500
San Diego, CA 92101

T: 858.514.8822

Prepared for: Rainbow Municipal Water District
Project Title: 2020 Urban Water Management Plan
Project No.: 155487

Technical Memorandum

Subject: Water System Seismic Assessment
Date: April 14, 2021
To: Malik Tamimi, Project Manager
From: Cheryl Dilks, Project Manager
Copy to: J.P. Semper

Prepared by: Amber Pulido_____

Reviewed by: Paul Selsky, P.E._____

Limitations:

This document was prepared solely for Rainbow Municipal Water District in accordance with professional standards at the time the services were performed and in accordance with the contract between Rainbow Municipal Water District and Brown and Caldwell dated July 24, 2020. This document is governed by the specific scope of work authorized by Rainbow Municipal Water District; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Rainbow Municipal Water District and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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Section 1: Seismic Assessment Purpose and Methodology

The California Water Code (CWC), Section 10632.5, states that beginning January 1, 2020, the Urban Water Management Plan (UWMP) “shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.” In response to this CWC requirement, the Department of Water Resources (DWR) now requires that a seismic assessment be included as part of the UWMP. Water suppliers may comply with this requirement by submitting a local hazard mitigation plan if that plan addresses seismic risk for the water system or the Risk and Resilience Assessment (RRA) and associated Emergency Response Plan (ERP) mandated by America’s Water Infrastructure Act (AWIA) of 2018. While there is a Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) for San Diego County, there is no specific seismic assessment for the major water facilities in the Rainbow Municipal Water District (District). The District has not yet completed its RRA and ERP updated for AWIA compliance, so they are not referenced in this seismic assessment.

1.1 Purpose of Seismic Assessment

The purpose of this assessment is to comply with the CWC by conducting a seismic risk assessment of the District’s critical water system assets, including storage tanks, pump stations, and critical transmission and distribution pipelines. This assessment includes a description of the likelihood of occurrence near the critical facilities, a list of the assets that may be impacted, potential impacts, and suggested mitigation measures.

1.2 Methodology

The seismic risk assessment uses the simplified approach outlined in the earthquake components of Tables 2b, 3b, 5b, 6b, 10b, and 11 from the U.S. Environmental Protection Agency (EPA)’s *Guidance for Small Community Water Systems on Risk and Resilience Assessments under AWIA*. Completed tables are attached to this TM as Attachment A. The District may choose to complete these tables for other water system risks at a later time.

Additionally, the District’s 2016 Water and Wastewater Master Plan Update was used to extract detailed information about the critical system assets. The EPA’s March 2018 *Earthquake Resilience Guide for Water and Wastewater Utilities* was used to determine the potential seismic impacts for the critical assets. San Diego County’s MJHMP was relied upon to describe the seismic risk for the District’s service area, and the EPA’s Vulnerability Self-Assessment Tool (VSAT) 2.0 was used to determine the annual threat likelihood of earthquake in the District’s area. Mitigation and resilience measures were determined using the EPA’s *Earthquake Incident Action Checklist* (see Attachment B) and FEMA’s *A Guide to Using HAZUS for Mitigation*.

Section 2: Seismic Risk for the District

In 2017, San Diego County updated its Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). The MJHMP intends to enhance public awareness and local policies around hazard mitigation, create a tool for decision-making, promote compliance with State and Federal requirements, provide inter-jurisdictional coordination, and achieve regulatory compliance. The 2017 update includes an evaluation of seismic impacts and potential mitigation actions for certain areas of the county.

In the MJHMP, most hazards were given a risk level of high, medium, or low depending on several factors unique to the hazard. The plan also provided the likeliness of the hazard occurrence with either a “highly likely”, “likely” or “somewhat likely” rating. Earthquakes in the San Diego region were determined to be a

“high” risk and “somewhat likely to occur.” According to the MJHMP, there are several major active faults in San Diego County, including the Rose Canyon, La Nacion, Elsinore, San Jacinto, Coronado Bank, and San Clemente Fault Zone. The fault zones that are nearest the District’s service area are the Elsinore and San Jacinto fault zones. The San Jacinto Fault is the most active fault in the county. It branches off the major San Andreas Fault as it passes through the San Bernardino Mountains. Two other faults that can generate moderately sized but potentially damaging earthquakes are the Rose Canyon and Elsinore Faults. The MJHMP suggests maximum likely magnitudes based on the Richter scale for local faults, as shown in Table 1.

Fault	Maximum Magnitude
Coronado Bank	7.7
Elsinore	7.3
La Nacion	6.6
Rose Canyon	7.0
San Clemente	7.7
San Jacinto	7.3

Additionally, the EPA’s VSAT Web 2.0 provides a database of earthquake likelihood values by zip code. Earthquake severities are based on ranges of Peak Ground Acceleration (PGA). Refer to Table 2 below for the annual likelihood of an earthquake occurring for zip code 92028 (Fallbrook).

Earthquake Severity	Definition	Annual Threat Likelihood
EQ 1 - PGA 0.0 - 0.2	Earthquake with weak to light shaking, causing minimal structural damage.	100%
EQ 2 - PGA 0.2 - 0.4	Earthquake with moderate to strong shaking, causing light to moderate damage, particularly to poorly built or badly designed structures	0.24%
EQ 3 - PGA 0.4 - 0.8	Earthquake with very strong to severe shaking, causing moderate to heavy damage to integrity of masonry and frame structures.	0.097%
EQ 4 - PGA 0.8 - 1.1	Earthquake with violent shaking, causing heavy damage, partial building collapses, and potentially shifting structures off foundations; some underground pipes are broken.	0.012%
EQ 5 - PGA > 1.1	Earthquake with extreme shaking, causing very heavy damage to masonry, frame structures, foundations, dams, and bridges; considerable damage to underground pipelines; large landslides may occur.	0.0048%

Section 3: Seismic Risk Assessment

This section describes vulnerabilities to the District’s critical assets by using EPA’s *Guidance for Small Community Water Systems on Risk and Resilience Assessments under AWIA* as a guide.

3.1 Source Water

The District’s supply is fully reliant upon purchased imported potable water from the San Diego County Water Authority (Water Authority), which relies upon two aqueducts to convey water to southern California. An earthquake may impact the source water supply if the aqueducts experience structural failure. Seismic assessment of the aqueducts and source water supply are covered under the Water Authority’s and Metropolitan Water District of Southern California’s seismic assessment components of their Water Shortage Contingency Plans.

3.2 Constructed Conveyances and Water Supply Connections

The purchased water is delivered to the District through eight District Flow Control Facility (FCF) locations (i.e., Water Authority Aqueduct Connections) and two emergency connection locations. An earthquake may cause structural failure at the FCFs and emergency connections, potentially causing water loss from pipe breakage or cracking.

3.3 Storage and Distribution Facilities

The District has 3 operational reservoirs, 13 enclosed storage tanks, 7 booster pump stations (PS), 6 emergency pumps, and 56 pressure regulating stations within the District’s distribution system.

The District’s storage and distribution facilities and potential earthquake impacts are described in the following sections.

3.3.1 Distribution Pipelines

The District’s system includes 323 miles of distribution pipeline, ranging in diameter from 4-inch to 42-inches in diameter. Table 3 summarizes pipeline lengths by diameter. Ground shaking and liquefaction from earthquakes can cause pipes to crack at brittle joints and sink into the liquefied ground potentially causing significant sudden water loss, flood damage to nearby structures, and the inability to deliver water to some customers.

Table 3. Pipeline Summary by Diameter

Pipeline Diameter (inches)	Total Pipeline Length (miles)	Pipeline Diameter (inches)	Total Pipeline Length (miles)
4	4.5	20	10.9
6	65.1	22	1
8	114.7	24	5.8
10	17.7	27	0.3
12	42.2	30	0.6
14	20.3	36	0.4
16	27	42	0.6
18	11.7		
Total Length of Pipe			323



3.3.2 Storage Facilities

The District has 3 operational reservoirs and 13 enclosed storage tanks. The three operational reservoirs are either concrete or asphalt lined. Reservoir failure from an earthquake can cause loss of control of water supply and downstream flooding of nearby structures.

There is one pre-stressed concrete tank, and the other 12 storage tanks are circular above-ground steel tanks. Some common earthquake effects on above ground tanks are structural stability failure, water sloshing within the tank causing structural failure, sliding on the foundation, cracking or shearing of walls for concrete tanks, and elephant foot buckling for steel tanks.

Table 4 lists the operational reservoirs and storage tanks for the District and their associated pressure zones and storage capacities. Asset names have been changed to protect sensitive information.

Table 4. Storage Facilities		
Storage Facility	Pressure Zone	Capacity (MG)
Tank/Reservoir 1	Magee	3.0
Tank/Reservoir 2 ⁽¹⁾	Rainbow Heights	0.9
Tank/Reservoir 3	Rainbow Heights	4.0
Tank/Reservoir 4	Gomez	3.5
Tank/Reservoir 5	U-1	0.6
Tank/Reservoir 6	U-1	1.5
Tank/Reservoir 7	Vallecitos	0.4
Tank/Reservoir 8	Northside	22.8
Tank/Reservoir 9	North	7.8
Tank/Reservoir 10	North	4.0
Tank/Reservoir 11	Canonita	6.0
Tank/Reservoir 12	South	4.0
Tank/Reservoir 13	South	4.0
Tank/Reservoir 14	South	4.0
Tank/Reservoir 15 ⁽¹⁾	Pala Mesa	203.7
Tank/Reservoir 16	Pala Mesa	6.0
Tank/Reservoir 17	Morro Tank	4.0
Tank/Reservoir 18	Morro Res	151.5

⁽¹⁾ Out of Service Facility

3.3.3 Booster Pump Stations

There are seven booster PS facilities. The PS buildings are susceptible to structural damage from earthquakes, and the pump operations may be impacted by earthquake associated power outages. Liquefaction may occur, causing the entire facility and its assets, such as booster pumps, generators, and piping, to lose bearing strength and collapse from liquefaction of the soil underlying the structures. Table 5 lists the



District’s booster pump stations, the total number of pumps in each facility, and capacity information. Asset names have been changed to protect sensitive information.

Table 5. Booster Pump Stations				
Pump Station Name	Total Number of Pumps	Pump Station Capacity		
		Total Capacity		Firm Capacity
		gpm	MGD	MGD
PS 1	4	3,509	5.1	3.6
PS 2	3	1,615	2.3	1.5
PS 3	1	679	1.0	1.0
PS 4	2	6,296	5.8	3.2
PS 5	1	3,455	5.0	5.0
PS 6	4	4,552	6.6	4.1
PS 7	2	1,398	2.0	1.0

3.3.4 Other Water Distribution System Assets

The pressure regulating stations house one or more hydraulically actuated pressure reducing valves (PRV). Six pressure control stations have only one PRV. The other 50 stations have more than one PRV. In the event of an earthquake, these PRVs could crack or break, causing valve failure and localized flooding. Refer to the 2016 Master Plan for the full list of PRVs.

3.4 Electronic, Computer, or Other Automated Systems

The District has one centralized SCADA system to control their distribution system. Earthquakes commonly cause power outages due to damage to power lines, transformers, and generators which could disrupt SCADA functionality.

3.5 Operations and Maintenance of the System

This section describes critical assets related to the operation and maintenance of the District’s system. An earthquake may cause structural damage to the administrative and operational buildings, which may then impact internal and external system communications.

Customer Center and Operations Center

The District has a customer service center and an operations center.

Power

The District receives its power supply from San Diego Gas & Electric (SDG&E). The District is subject to any associated earthquake impacts to SDG&E’s facilities in the District’s service area.

Section 4: Mitigation and Resilience Measures

This section discusses potential actions that could be taken to improve the resiliency of the system to earthquakes and mitigate the risk of failure. Strategies to improve the District’s assets’ resilience to earthquakes and enhancements to operational strategies to improve system resilience are described in the following sections.

4.1.1 Mitigation and Resilience for Water System Assets

To mitigate the threat of earthquakes to District FCFs, reservoirs, storage tanks, distribution pipelines, booster pumps, emergency pumps, emergency connections, and other District buildings, the District should first consider conducting a complete structural assessment of the assets to seismically evaluate their performance if subjected to earthquakes of varying degrees. This evaluation can identify the “high risk” assets that should take priority for replacement or seismic design retrofits in the future. Assets associated with source water resilience, such as aqueducts, shall be addressed by the Water Authority and MWD independently.

4.1.2 Operational Strategies to Improve Water System Resilience

Given the District’s dependence on a wholesaler, improving reliability and redundancy can help strengthen preparedness and reduce response times in case of earthquake impacts to the Water Authority or MWD systems. The District could consider identifying interconnectivity strategies between nearby systems, such as City of Oceanside, Carlsbad Municipal Water District, and Vista Irrigation District to maximize reliability and resiliency. Although Water Authority supplies are considered reliable, improved interconnection with other systems could help address an earthquake event that may impact some or all District FCFs. Another strategy involves enhancing or establishing clear earthquake event communication protocols and documenting emergency equipment and other resources in advance. See Section 3.1.3 for further suggestions for the Emergency Response Plan (ERP).

The District should also consider identifying and updating lists of priority water customers (e.g., hospitals, dialysis clinics, schools) to develop a plan to restore water service to those customers first. Back-up supplies of water (bulk water delivery or bottled water supplies) should also be identified and documented in the ERP.

Because earthquakes will impact multiple utilities simultaneously, it is also recommended that the District establish coordination with SDG&E now to foster better communication and response times immediately after an earthquake. Sharing information with the power utility regarding critical asset locations could help facilitate faster power recovery to priority assets. Locations of back-up generators and fuel reserves should be updated regularly and included with the ERP.

4.1.3 Emergency Response Planning

The District should review and update their ERP to ensure all earthquake procedures, equipment lists, and emergency contacts are current. The current ERP specifically addresses earthquakes and procedures to follow in Section 4.1.1. To supplement this, the EPA’s earthquake checklist in Attachment B can serve as a helpful guide for emergency planning and response. Additionally, the following are tools that can be used to revise an ERP:

- [Earthquake Hazard Mitigation Handbook](#) (Federal Emergency Management Agency [FEMA])
- [Planning for an Emergency Drinking Water Supply](#) (EPA)
 - Incident monitoring: [USGS recent earthquake activity map](#) (U.S. Geological Survey [USGS])
- Drinking Water Emergency Response Plan Guidelines (State Water Resources Control Board [SWRCB])

- [ERP Template from Division of Drinking Water \(DDW\)'s ERP Workshop](#)
- [EPA Region 1 Water/Wastewater System Generator Preparedness Brochure](#) (EPA)

Finally, it is recommended that all District staff review the ERP, understand where the emergency operations center (EOC) is located, how it will be activated, and what their role is during an earthquake emergency. Desktop trainings and exercises for seismic scenarios are also suggested.

References

Atkins, Rainbow Municipal Water District Water and Wastewater Master Plan Update, Rainbow Municipal Water District, 2016.

County of San Diego – Office of Emergency Services, San Diego County – Unified District Council, Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) for San Diego County, California, 2017.

Environmental Protection Agency (EPA), “Earthquake Resilience Guide for Water and Wastewater Utilities,” Earthquake Resilience Guide for Water and Wastewater Utilities, March 2018, <https://www.epa.gov/sites/production/files/2018-02/documents/180112-earthquakeresiliencguide.pdf>.

Environmental Protection Agency (EPA), “Water Sector Incident Action Checklist – Earthquake,” Incident Action Checklist – Earthquake, January 2015, https://www.epa.gov/sites/production/files/2015-06/documents/earthquake_1.pdf.

National Institute of Building Sciences for the Federal Emergency Management Agency, “A Guide to Using HAZUS for Mitigation,” April 2002, https://www.fema.gov/pdf/plan/prevent/hazus/hazus_for_mitigation.pdf.

Attachment A: Guidance for Small Community Water Systems on Risk and Resilience Assessments under AWIA

Table 2b: Source Water (Natural Hazards)

Asset Category: <i>Source Water</i> Examples of Assets in this Category: Encompasses all sources that supply water to a water system. Possible examples include rivers, streams, lakes, source water reservoirs, groundwater, and purchased water.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Source Water</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	The District’s supply is fully reliant upon purchased imported potable water from the San Diego County Water Authority (Water Authority), which relies upon two aqueducts to convey water to southern California. An earthquake may impact the source water supply if the aqueducts experience structural failure. Seismic assessment of the aqueducts and source water supply are covered under the Water Authority’s and Metropolitan Water District of Southern California’s seismic assessment components of their Water Shortage Contingency Plans.
<input type="checkbox"/> Tornado	Click or tap here to enter text.

Asset Category: <i>Source Water</i> Examples of Assets in this Category: Encompasses all sources that supply water to a water system. Possible examples include rivers, streams, lakes, source water reservoirs, groundwater, and purchased water.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Source Water</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Ice storm	Click or tap here to enter text.
<input type="checkbox"/> Fire	Click or tap here to enter text.
<input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.	Click or tap here to enter text.

Table 3b: Pipes and Constructed Conveyances, Water Collection, and Intake (Natural Hazards)

Asset Category: Pipes and Constructed Conveyances, Water Collection, and Intake Examples of Assets in this Category: Encompasses the infrastructure that collects and transports water from a source water to treatment or distribution facilities. Possible examples include holding facilities, intake structures and associated pumps and pipes, aqueducts, and other conveyances.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Pipes and Constructed Conveyances, Water Collection, and Intake</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	The purchased water is delivered to the District through eight District Flow Control Facility (FCF) locations (i.e., Water Authority Aqueduct Connections) and two emergency connection locations. An earthquake may cause structural failure at the FCFs and emergency connections, potentially causing water loss from pipe breakage or cracking.
<input type="checkbox"/> Tornado	Click or tap here to enter text.
<input type="checkbox"/> Ice storm	Click or tap here to enter text.

<p>Asset Category: <i>Pipes and Constructed Conveyances, Water Collection, and Intake</i></p> <p>Examples of Assets in this Category: Encompasses the infrastructure that collects and transports water from a source water to treatment or distribution facilities. Possible examples include holding facilities, intake structures and associated pumps and pipes, aqueducts, and other conveyances.</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Pipes and Constructed Conveyances, Water Collection, and Intake</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<p><input type="checkbox"/> Fire</p>	<p>Click or tap here to enter text.</p>
<p><input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.</p>	<p>Click or tap here to enter text.</p>

Table 5b: Storage and Distribution Facilities (Natural Hazards)

<p>Asset Category: Storage and Distribution Facilities</p> <p>Examples of Assets in this Category: Encompasses all infrastructure used to store water after treatment, maintain water quality, and distribute water to customers. Possible examples include residual disinfection, pumps, tanks, reservoirs, valves, pipes, and meters.</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Storage and Distribution Facilities</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	<p>The District’s system includes 323 miles of distribution pipeline, ranging in diameter from 4-inch to 42-inches in diameter. There are 3 operational reservoirs, 13 enclosed storage tanks, 7 booster pump stations, 6 emergency pumps, and 56 pressure reducing stations within the distribution system.</p> <p>Distribution Pipelines:</p> <p>Ground shaking and liquefaction from earthquakes can cause pipes to crack at brittle joints and sink into the liquefied ground potentially causing significant sudden water loss, flood damage to nearby structures, and the inability to deliver water to some customers.</p> <p>Storage Facilities</p> <p>Reservoir failure from an earthquake can cause loss of control of water supply and downstream flooding of nearby structures. There is one pre-stressed concrete tank, and the other 12 storage tanks are circular above-ground steel tanks. Some common earthquakes effects on above ground tanks are structural stability failure, water sloshing within the tank causing structural failure, sliding on the foundation, cracking or shearing of walls for concrete tanks, and elephant foot buckling for steel tanks.</p>

Asset Category: <i>Storage and Distribution Facilities</i> Examples of Assets in this Category: Encompasses all infrastructure used to store water after treatment, maintain water quality, and distribute water to customers. Possible examples include residual disinfection, pumps, tanks, reservoirs, valves, pipes, and meters.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Storage and Distribution Facilities</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input checked="" type="checkbox"/> Earthquake	<p>Booster Pump Stations There are seven booster PS facilities. The PS buildings are susceptible to structural damage from earthquakes, and the pump operations may be impacted by earthquake associated power outages. Liquefaction may occur, causing the entire facility and its assets, such as booster pumps, generators, and piping, to lose bearing strength and collapse from liquefaction of the soil underlying the structures.</p> <p>Pressure Reducing Valves The pressure regulating stations house one or more hydraulically actuated pressure reducing valves (PRV). In the event of an earthquake, the PRVs could crack or break, causing valve failure and localized flooding.</p>
<input type="checkbox"/> Tornado	
<input type="checkbox"/> Ice storm	Click or tap here to enter text.
<input type="checkbox"/> Fire	Click or tap here to enter text.

Table 6b: Electronic, Computer, or Other Automated Systems (including the security of such systems) (Natural Hazards)

<p>Asset Category: <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i></p> <p>Examples of Assets in this Category: Encompasses all treatment and distribution process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the sensors, controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	The District has one centralized SCADA system to control their distribution system. Earthquakes commonly cause power outages due to damage to power lines, transformers, and generators which could disrupt SCADA functionality.
<input type="checkbox"/> Tornado	Click or tap here to enter text.

<p>Asset Category: <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i></p> <p>Examples of Assets in this Category: Encompasses all treatment and distribution process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the sensors, controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<input type="checkbox"/> Ice storm	Click or tap here to enter text.
<input type="checkbox"/> Fire	Click or tap here to enter text.
<input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.	Click or tap here to enter text.

Table 10b: The Operation and Maintenance of the System (Natural Hazards)

<p>Asset Category: <i>The Operation and Maintenance of the System</i></p> <p>Examples of Assets in this Category: Encompasses critical processes required for operation and maintenance of the water system that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outage), loss of suppliers (e.g., interruption in chemical delivery), and loss of key employees (e.g., disease outbreak or employee displacement).</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Operation and Maintenance of the System</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	<p>An earthquake may cause structural damage to the administrative and operational buildings, which may then impact internal and external system communications. The District has a customer service center and a water operations center.</p> <p>The District receives its power supply from San Diego Gas & Electric (SDG&E). The District is subject to any associated earthquake impacts to SDG&E’s facilities in the District’s service area.</p>
<input type="checkbox"/> Tornado	Click or tap here to enter text.
<input type="checkbox"/> Ice storm	Click or tap here to enter text.



<p>Asset Category: <i>The Operation and Maintenance of the System</i> Examples of Assets in this Category: Encompasses critical processes required for operation and maintenance of the water system that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outage), loss of suppliers (e.g., interruption in chemical delivery), and loss of key employees (e.g., disease outbreak or employee displacement).</p>	
<p>Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Operation and Maintenance of the System</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<p><input type="checkbox"/> Fire</p>	<p>Click or tap here to enter text.</p>
<p><input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.</p>	<p>Click or tap here to enter text.</p>

Table 11: Countermeasures (Optional)¹

<p>Countermeasures (optional) List countermeasures in the left column the CWS could potentially implement to reduce risk from the malevolent acts and natural hazards that were selected.</p>	<p>Brief Description of Risk Reduction or Increased Resilience For each countermeasure, in the right column, describe how the countermeasure could reduce risk or increase resilience for CWS assets from malevolent acts or natural hazards that were selected in the analysis. A countermeasure may reduce risk across multiple malevolent acts, natural hazards and asset categories.</p>
<p>1. Mitigate the threat of earthquakes to water system assets.</p>	<p>To mitigate the threat of earthquakes to District FCFs, reservoirs, storage tanks, distribution pipelines, booster pumps, emergency pumps, emergency connections, and other District buildings, the District should first consider conducting a complete structural assessment of the assets to seismically evaluate their performance if subjected to earthquakes of varying degrees. This evaluation can identify the “high risk” assets that should take priority for replacement or design retrofits in the future.</p>
<p>2. Operational Strategies to Improve Water System Resilience.</p>	<p>Given the District’s dependence on a wholesaler, improving reliability and redundancy can help strengthen preparedness and reduce response times in case of earthquake impacts to the Water Authority or MWD systems. The District could consider identifying interconnectivity strategies between nearby systems, such as City of Oceanside, Carlsbad Municipal Water District, and Vista Irrigation District to maximize reliability and resiliency. Although Water Authority supplies are considered reliable, improved interconnection with other systems could help address an earthquake event that may impact some or all District FCFs.</p> <p>Another strategy involves enhancing or establishing clear earthquake event communication protocols and documenting emergency equipment and other resources in advance. The District should also consider identifying and updating lists of priority water customers (e.g., hospitals, dialysis clinics, schools) to develop a plan to restore water service to those customers first. Back-up supplies of water (bulk water delivery or bottled water supplies) should also be considered and documented in the ERP.</p> <p>Because earthquakes will impact multiple utilities simultaneously, it is also recommended that the District establish coordination with SDG&E now to establish better communication and response times immediately after an earthquake. Sharing information with the power utility regarding critical asset locations could help facilitate faster power recovery to priority assets. Locations of back-up generators and fuel reserves should be updated regularly and included with the ERP.</p>

¹ IMPORTANT NOTE: The assessment does not require a specific number of countermeasures. You may have fewer than five countermeasures or add more countermeasures on a separate sheet.

Attachment B: Earthquake Incident Action Checklist



Incident Action Checklist – Earthquake

The actions in this checklist are divided up into three “rip & run” sections and are examples of activities that water and wastewater utilities can take to: prepare for, respond to and recover from an earthquake. For on-the-go convenience, you can also populate the “My Contacts” section with critical information that your utility may need during an incident.

Earthquake Impacts on Water and Wastewater Utilities

An earthquake is caused by the shifting of tectonic plates beneath the Earth’s surface. Ground shaking from moving geologic plates collapses buildings and bridges, and sometimes triggers landslides, avalanches, flash floods, fires and tsunamis. The strong ground motion of earthquakes has the potential to cause a great deal of damage to drinking water and wastewater utilities, particularly since most utility components are constructed from inflexible materials (e.g., concrete, metal pipes). Earthquakes create many cascading and secondary impacts that may include, but are not limited to:

- Structural damage to facility infrastructure and equipment
- Water tank damage or collapse
- Water source transmission line realignment or damage
- Damage to distribution lines due to shifting ground and soil liquefaction, resulting in potential water loss, water service interruptions, low pressure, contamination and sinkholes and/or large pools of water throughout the service area
- Loss of power and communication infrastructure
- Restricted access to facilities due to debris and damage to roadways



FEMA

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from an earthquake.

Example of Water Sector Impacts and Response to an Earthquake

East Bay Municipal Utility District Mitigates Earthquake Impacts

Following the 1989 Loma Prieta earthquake, the East Bay Municipal Utility District (EBMUD) in Oakland, California, began developing a comprehensive seismic program to increase their ability to recover from earthquake impacts and reduce water and wastewater service interruptions. Taking a proactive approach, EBMUD was the first US water utility to comprehensively retrofit its service area facilities to address seismic weaknesses.

The utility began by assessing its entire water distribution network to determine areas of improvement. Upgrades included installation of flexible joints and hoses to minimize pipe ruptures and to facilitate rerouting of water around broken pipes. The utility also created alternative transmission routes for pipes that cross fault zones.

EBMUD did a great deal of work to reinforce aqueducts to make them more resilient to earthquake impacts, including strengthening levees at aqueduct crossings and pipe foundations at river crossings, reinforcing pipe joints on buried portions of pipe, and strengthening pipe support structures on elevated portions of the aqueduct. The utility is also designing aqueduct interconnections to create bypasses around damaged segments after a levee failure or earthquake. These bypasses allow the utility to continue providing service to customers while permanent repairs are being made.

Since 1989, EBMUD has invested more than \$350 million in their seismic program, which has been primarily funded by bonds that are being repaid through a seismic surcharge on customers’ water bill of just over one dollar per month for single-family residential homes.

Source: EBMUD’s 2011 “Earthquake Readiness: Protecting Life Safety and Public Health.”



My Contacts and Resources



CONTACT NAME	UTILITY/ORGANIZATION NAME	PHONE NUMBER
	Local EMA	
	State EMA	
	State Primacy Agency	
	WARN Chair	
	Power Utility	

Planning

- Incident monitoring:
 - [USGS recent earthquake activity map](#) (U.S. Geological Survey [USGS])
 - [NOAA National Weather Service tsunami alerts](#) (National Oceanic and Atmospheric Administration [NOAA])
- [Earthquake Hazard Mitigation Handbook](#) (Federal Emergency Management Agency [FEMA])
- [Earthquake Hazards Program](#) (USGS)
- [Earthquake Shaking Maps and Information for California Residents](#) (Association of Bay Area Governments)
- [Recent Earthquakes: Implications for U.S. Water Utilities](#) (Water Research Foundation)
- [Planning for an Emergency Drinking Water Supply](#) (EPA)
- [All-Hazard Consequence Management Planning for the Water Sector](#) (Water Sector Emergency Response Critical Infrastructure Partnership Advisory Council [CIPAC] Workgroup)
- [Vulnerability Self Assessment Tool \(VSAT\)](#) (EPA)
- [Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response, and Climate Resiliency](#) (EPA)
- [How to Develop a Multi-Year Training and Exercise \(T&E\) Plan](#) (EPA)
- [Make a Plan](#) (FEMA)

Coordination

- [Water/Wastewater Agency Response Network \(WARN\)](#) (EPA)
- [Community Based Water Resiliency](#) (EPA)

Facility and Service Area

- [Oregon Earthquake Resiliency Plan](#) (see Chapter 8: Water and Wastewater Systems) (Oregon Seismic Safety Policy Advisory Commission)
- [Seismic Guidelines for Water Pipelines](#) (American Lifelines Alliance)

Power, Energy and Fuel

- [EPA Region 1 Water/Wastewater System Generator Preparedness Brochure](#) (EPA)

Documentation and Reporting

- [Federal Funding for Utilities In National Disasters \(Fed FUNDS\)](#) (EPA)

Mitigation

- [Earthquake Publications: Building Designers, Managers and Regulators](#) (FEMA)
- [IS-323: Earthquake Mitigation Basics for Mitigation Staff](#) (FEMA)
- [HAZUS: FEMA's Methodology for Estimating Potential Losses from Disasters](#) (FEMA)
- [Earthquake Hazard Mitigation for Utility Lifeline Systems](#) (FEMA)



Actions to Prepare for an Earthquake



Planning

- Review and update your utility's emergency response plan (ERP), and ensure all emergency contacts are current.
- Conduct briefings, training and exercises to ensure utility staff is aware of all preparedness, response and recovery procedures.
- Identify priority water customers (e.g., hospitals), obtain their contact information, map their locations and develop a plan to restore those customers first.
- Develop an emergency drinking water supply plan and establish contacts (potentially through your local emergency management agency [EMA] or mutual aid network) to discuss procedures, which may include bulk water hauling, mobile treatment units or temporary supply lines, as well as storage and distribution.
- Conduct a hazard vulnerability analysis in which you review historical records to understand the past frequency and intensity of earthquakes and how your utility may have been impacted. Consider taking actions to mitigate seismic impacts to the utility, including those provided in the "Actions to Recover from an Earthquake: Mitigation" section.
- Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/local officials with connections to funding, set up a system to document damage and costs, take photographs of the facility for comparison to post-damage photographs).

Coordination

- Join your state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.

- Coordinate with WARN members and other neighboring utilities to discuss:
 - Outlining response activities, roles and responsibilities and mutual aid procedures (e.g., how to request and offer assistance)
 - Conducting joint tabletop or full-scale exercises
 - Obtaining resources and assistance, such as equipment, personnel, technical support or water
 - Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates and demand on the water sources need to be considered and addressed in the design and operations
 - Establishing communication protocols and equipment to reduce misunderstandings during the incident
- Coordinate with other key response partners, such as your local EMA, to discuss:
 - How restoring system operations may have higher priority than establishing an alternative water source
 - Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water
- Understand how the local and utility emergency operations center (EOC) will be activated and what your utility may be called on to do, as well as how local emergency responders and the local EOC can support your utility during a response. If your utility has assets outside of the county EMA's jurisdiction, consider coordination or preparedness efforts that should be done in those areas.
- Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.

Actions to Prepare for an Earthquake *(continued)*



Communication with Customers _____

- Develop outreach materials to provide your customers with information they will need after an earthquake (e.g., clarification about water advisories, instructions for private well and septic system maintenance and information about earthquake mitigation).
- Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g., boil water) and distributing them to customers using appropriate mechanisms, such as reverse 911.

Facility and Service Area _____

- Inventory and order extra equipment and supplies, as needed:
 - Motors
 - Fuses
 - Chemicals (ensure at least a two week supply)
 - Cellular phones or other wireless communications device
 - Emergency Supplies
 - Tarps/tape/rope
 - Cots/blankets
 - First aid kits
 - Foul weather gear
 - Plywood
 - Flashlights/flares
 - Sandbags (often, sand must be ordered as well)
 - Bottled water
 - Batteries
 - Non-perishable food

- Ensure communication equipment (e.g., radios, satellite phones) works and is fully charged.
- Develop a GIS map of all system components and prepare a list of coordinates for each facility.
- Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
- Establish a seismically hardened or offsite facility to store essential records and equipment.
- Inspect utility for structural stability and consider implementing actions to improve the utility's ability to withstand damage from earthquakes, such as:
 - Secure fixtures, shelves and equipment
 - Anchor or stabilize utility equipment to withstand earthquake forces and movements
 - Reinforce, secure or improve utility transmission lines and connections to withstand earthquake forces, soil movements and differential settlements
 - Anchor or improve tank structures to withstand earthquake forces and movements

Personnel _____

- Identify essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shut down and start up of the system.
- Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter in place procedures.
- Pre-identify emergency operations and clean-up crews. Establish alternative transportation strategies if roads are impassable.

Actions to Prepare for an Earthquake *(continued)*



- Consider how evacuations or limited staffing due to transportation issues (potentially all utility personnel) will impact your response procedures.
- Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- Encourage personnel, especially those that may be on duty for extended periods of time, to develop family emergency plans.

Power, Energy and Fuel

- Evaluate condition of electrical panels to accept generators; inspect connections and switches.
- Document power requirements of the facility; options for doing this may include:
 - Placing a request with the US Army Corps of Engineers 249th Engineer Battalion (Prime Power): <http://www.usace.army.mil/249thEngineerBattalion.aspx>
 - Using the US Army Corps of Engineers on-line Emergency Power Facility Assessment Tool (EPFAT): <http://epfat.swf.usace.army.mil/>

- Confirm and document generator connection type, capacity load and fuel consumption. Test regularly, exercise under load and service backup generators.
- Contact fuel vendors and inform them of estimated fuel volumes needed if utility is impacted. Determine your ability to establish emergency contract provisions with vendors and your ability to transport fuel if re-fueling contractors are not available. Develop a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- Collaborate with your local power provider and EOC to ensure that your water utility is on the critical facilities list for priority electrical power restoration, generators and emergency fuel.



FEMA

Notes:

Actions to Respond to an Earthquake



Planning

- For coastal communities with an increased risk for tsunami activity following an earthquake; review the Tsunami Incident Action Checklist for more information.

Coordination

- Notify your local EMA and state regulatory/primacy agency of system status.
- If needed, request or offer assistance (e.g., water buffalos, water sampling teams, generators) through mutual aid networks, such as WARN.
- Assign a representative of the utility to the incident command post or the community's EOC.

Communication with Customers

- Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

Overall

- Conduct damage assessments of the utility to prioritize repairs and other actions.

- Check that back-up equipment and facility systems, such as controls and pumps, are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- Inspect the utility and service area for damage. Identify facility components (e.g., valve boxes) and fire hydrants that have been buried, are inaccessible or have been destroyed.
- Investigate drinking water wells for damage caused by liquefaction. This could result in the loss of storage for groundwater or ground subsidence.
- Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- Isolate and control leaks in water transmission and distribution piping.
- Turn off water meters at destroyed homes and buildings.
- Monitor water quality, develop a sampling plan and adjust treatment as necessary.
- Notify regulatory/primacy agency if operations and/or water quality or quantity are affected.
- Utilize pre-established emergency connections or setup temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from pre-determined tanks or hydrants. Notify employees of the activated sites.

Notes:

Actions to Respond to an Earthquake *(continued)*



Wastewater Utilities

- Inspect the utility and service area, including lift stations, for damage, downed trees, and power availability. Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run system in manual operation.
- Notify regulatory/primacy agency of any changes to the operations or required testing parameters.

Documentation and Reporting

- Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- Work with your local EMA on the required paperwork for public assistance requests.

Personnel

- Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from earthquakes.
- Deploy emergency operations and clean-up crews (e.g., securing heavy equipment). Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy and Fuel

- Use backup generators, as needed, to supply power to system components.
- Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to the generators.
- Maintain contact with electric provider for power outage duration estimates.

Notes:

Actions to Recover from an Earthquake



Coordination

- Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information.

Facility and Service Area

- Complete damage assessments.
- Complete permanent repairs, replace depleted supplies and return to normal service.



FEMA

Documentation and Reporting

- Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications. Visit EPA's web-based tool, Federal Funding for Utilities—Water/Wastewater—in National Disasters (Fed FUNDS), for tailored information and application forms for various federal disaster funding programs: <http://water.epa.gov/infrastructure/watersecurity/funding/fedfunds/>
- Develop a lessons learned document and/or an after action report to keep a record of your response activities. Update your vulnerability assessment, ERP and contingency plans.
- Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades (e.g., replacing pipes, wellheads and water tanks to address seismic weaknesses).

Notes:

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

PUBLIC HEARING TO SOLICIT PUBLIC INPUT ON THE DRAFT 2020 URBAN WATER MANAGEMENT PLAN (UWMP) INCLUDING DISCUSSION AND POSSIBLE ACTION ON ADOPTION OF RESOLUTION NO. 21-11, APPROVING THE DISTRICT'S DRAFT 2020 UWMP

BACKGROUND

The District is required to prepare an Urban Water Management Plan (UWMP) every five years in accordance with the requirements of California's Urban Water Management Planning Act (Act) and related provisions of the California Water Code. The Act establishes as state policy that, "the management of urban water demands, and efficient use of water shall be actively pursued to protect both the people of the state and their water resources." To advance that goal, the Act requires that urban water suppliers develop UWMPs to assess current demands and supplies over a 20-year planning horizon and address methods to ensure reliable and adequate water service to meet the needs of the various categories of customers during normal, dry, and multiple dry years.

The UWMP documents that the water supplies available to the District customers are adequate to meet demands over the required 20-year planning period. The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 connections or supplying more than 3,000 acre-feet (AF) of water annually to adopt and submit a UWMP to the California Department of Water Resources (DWR). The District last prepared an UWMP in 2015 and is now required to complete and approve a 2020 UWMP by the end of this fiscal year.

In July of 2020, the District executed a professional services agreement (PSA) to prepare the 2020 UWMP/Water Shortage Contingency Plan (WSCP) with Brown and Caldwell (B&C) Team that included experts in the field that helped successfully prepare the District's 2015 UWMP. On March 24, 2021, the District sent out 60-Day Notice of Preparation of the UWMP and WSCP to cities and county within the District's water service area per California Water Code Section 10621. The notice informed the agencies that the District will be reviewing the UWMP/WSCP and considering amendments or changes through a public hearing process. The letter further stated that RMWD will hold public hearings for the UWMP and WSCP within 60 days or more from the date of the letter. A 14-day notice for public hearing and opportunity for public to review of the UWMP/WSCP was advertised on May 11, 2021 in the Daily Journal and posted on the District's website. A presentation was also given to the Engineering and Operations Committee on May 5, 2021 on the Draft 2020 UWMP and WSCP. The next section provides a description of the 2020 UWMP.

DESCRIPTION

As described in the previous section, the District has updated its UWMP/WSCP and released the Draft plan on May 11, 2021 for a 14-day public review. It is worth noting that the WSCP is Appendix D of the UWMP and addresses water shortage scenarios such as drought conditions. The UWMP and WSCP per

California Water Code Section 10640-10645 must be adopted separately and therefore the WSCP is described in a separate Board Action Letter.

The Draft 2020 UWMP was prepared in compliance with the California Water Code and conforming to DWR's 2020 UWMP Guidebook. DWR's 2020 UWMP Guidebook included ten newly required and recently revised components such as but not limited to including five previous years of system water losses, climate change impacts, energy intensity analysis, and five-year drought risk assessment. The Draft 2020 UWMP includes 11 Sections (Exhibit A):

Section 1 – Introduction including regulatory background.

Section 2 – Plan Preparation provides information on the District's process for developing this UWMP, including coordination and outreach.

Section 3 – System Description provides a description of the service area, climate, water supply facilities, distribution system, demographics, land use, and historical and projected population.

Section 4 – System Water Use presents historical and projected water use.

Section 5 – Baselines and Targets presents baseline and target water consumption amounts and demonstrates that the 2020 water use target was met.

Section 6 – Water Supplies describes and quantifies the current and projected sources of water available to the District including potential recycled water uses. A description and quantification of energy intensity is also presented.

Section 7 – Water Supply Reliability describes the current water supply reliability, the 20-year projection, and 5-year drought risk assessment.

Section 8 – Water Shortage Contingency Planning provides reference to the District's water shortage contingency plan. The full WSCP is in Appendix D.

Section 9 – Demand Management Measures (DMMs) presents and addresses DMMs to promote conservation and to reduce demand on the District's water supply.

Section 10 – Plan Adoption, Submittal, and Implementation describes the steps taken to adopt and submit the UWMP and the WSCP.

Section 11 – References provides a list of references used to support plan development.

Appendices A-F – Provides relevant supporting documents.

The Draft 2020 UWMP presents an assessment of the current and projected water supplies, evaluation of the demand and customer types, evaluation of the reliability of water supplies, description of the conservation measures implemented by the urban water supplier, response plan in the event of a water shortage, comparison of the demand and supply projections, compliance with Water Conservation Act of 2009 (SBX7-7) that includes per capita water use data and targets. The general conclusions drawn from the Draft 2020 UWMP is that it projects decreasing water usage within the District's service area over the next 20-years. This forecast was developed by the District with special consideration of the previous 20-years of water usage which have declined by more than 55 percent since 2004. Projections included 13,750 acre feet in 2025 to 12,165 acre feet in 2040, which represents a 4% decrease trend per each five year period. The District also met the SB X7-7 requirement for 20% reduction in per capita use by 2020. The target reduction for 2020 was 1,202 gallons per capita per day (GPCD) and the District's actual fiscal year 2020 use was 585 GPCD, well within the 20% reduction range. The District's UWMP also evaluated dry year reliability for a single dry year, as well as over five consecutive dry years, and found that no supply shortages are anticipated with the San Diego County Water Authority's supply, thereby meeting the District's projected demands through 2045.

The Draft 2020 UWMP was advertised in the Daily Journal and released for 14-day Public Review on May 11, 2021. This Board Action includes opening and closing a public hearing at the Board Meeting, taking testimony, addressing public comments at the board meeting and consider adopting resolution 21-11. If board or public comments are not able to be addressed adequately at the board meeting, updates to the Draft 2020 UWMP will be made and brought back to the Board for discussion and consideration of adoption at the June 2021 Board Meeting.

In addition, the District's 2016 Drought Ordinance will be required to be updated to conform with the 2020 UWMP. The District will wait until DWR accepts the 2020 UWMP before updating the ordinance should there be comments and or modifications to the plan that would impact the ordinance update. It is anticipated that District staff will be returning to the board in 2022 to present an updated draft ordinance.

Finally, the draft UWMP does not specifically address the application to San Diego LAFCO for the change in the District's wholesale water provider to Eastern Municipal Water District. Since the exact timing of that change, and the approval of that change, is unknown at this time, the team determined that the UWMP would focus on SDCWA as the provider as it is more likely than not that SDCWA will be the wholesale provider for a few more years. With that said, the application documents presented to SDLAFCO included a comprehensive supply reliability study that demonstrates conclusively that the supply from EMWD would have equivalent reliability as the supply from SDCWA. In fact, EMWD's own 2020 UWMP also includes the potential additional demands from both RMWD and Fallbrook PUD in their projections and shows compliance with UWMP requirements in all cases.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area One and Five: Water Resources and Customer Service. The 2020 UWMP will assess current demands and supplies over a 20-year planning horizon and addresses methods to ensure reliable and adequate water service to meet the needs of our customers.

ENVIRONMENTAL

In accordance with CEQA guidelines Section 15378, the action before the Board does not constitute a "project" as defined by CEQA.

BOARD OPTIONS/FISCAL IMPACTS

The current PSA amount for the 2020 UWMP with B&C is \$85,590 that includes Change Order #1 approved by the Board of Directors on March 23, 2021. Adequate funds are available under Engineering Professional Services GL Account 03-91-70000 Project Number 300018, which is budgeted at \$257,500.


- 1) Option 1:
 - Open public hearing, take testimony, and close public hearing.
 - Adopt resolution 21-11, approving the 2020 UWMP with any amendments presented at the public hearing.
 - Make a determination that the action identified herein does not constitute a "project" as defined by CEQA.

- 2) Option 2:
 - Address board and public comments on the UWMP and return to the June 22, 2021 board meeting with an amended 2020 UWMP.

- 3) Option 3:
 - Provide other direction to staff.

STAFF RECOMMENDATION

Staff recommends Option 1.


Chad Williams 05/25/2021
Engineering and CIP Program Manager

RESOLUTION NO. 21-11

**RESOLUTION OF THE BOARD OF DIRECTORS OF THE
RAINBOW MUNICIPAL WATER DISTRICT
ADOPTING 2020 URBAN WATER MANAGEMENT PLAN**

WHEREAS, the Urban Water Management Planning Act (Water Code section 10620 – 10645) requires every urban water supplier as defined in the act to prepare and adopt an urban water management plan and revise this plan at least once every five (5) years (Water Code 10621); and

WHEREAS, Rainbow Municipal Water District is an urban water supplier within the meaning of the act; and

WHEREAS, the District has prepared its 2020 Urban Water Management Plan, made the plan available for public inspection, and held a public hearing thereon following publication within the jurisdiction of the District of a notice of the time and place of the hearing pursuant to Section 6066 of the Government Code; and

WHEREAS, it is in the interest of the District to adopt a revised water management plan;

NOW THEREFORE BE IT RESOLVED DETERMINED AND ORDERED by the Board of Directors of the Rainbow Municipal Water District as follows:

1. That the URBAN WATER MANAGEMENT PLAN FOR RAINBOW MUNICIPAL WATER DISTRICT, a copy of which is on file with the District be approved and adopted as the plan required by the Urban Water Management Planning Act.
2. That the District shall implement its updated plan.
3. That District staff is authorized and directed to file with the Department of Water Resources of the State of California a copy of the District's updated plan by July 1, 2021.

PASSED AND ADOPTED at an adjourned regular meeting of the Board of Directors of the Rainbow Municipal Water District held on May 25, 2021 by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

Hayden Hamilton, Board President

ATTEST:

Dawn Washburn, Board Secretary

DRAFT

2020 Urban Water Management Plan

Prepared for
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, CA 92028
May 2021



Prepared By:



In association with:



This is a draft and is not intended to be a final representation of the work done or recommendations made by Brown and Caldwell. It should not be relied upon; consult the final report.



Project Participants

Brown and Caldwell

Paul Selsky, Technical Reviewer

J.P. Semper, Project Manager

Jesse Scolavino, UWMP Project Engineer

Tiffany Tran, WSCP Project Engineer

Kathleen Yoshida, Editorial Reviewer

Gillingham Water

Doug Gillingham, Technical Reviewer

Rainbow Municipal Water District

Chad Williams, Engineering and CIP Program Manager

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List of Abbreviations

Act	Urban Water Management Planning Act	SDLAFCO	San Diego Local Agency Formation Commissions
AF	acre-feet	SLRWRP	San Luis Rey Water Reclamation Plant
AFY	acre-foot per year	SR-76	State Route-76
AWWA	American Water Works Association	TSAWR	Transitional Special Agriculture Water Rate
BLS	Bureau of Labor Statistics	UWMP	Urban Water Management Plan
CEQA	California Environmental Quality Act	Water Authority	San Diego County Water Authority
CII	commercial, industrial, and institutional	WSCP	Water Shortage Contingency Plan
CIMIS	California Irrigation Management Information System	WWTP	wastewater treatment plant
CIP	Capital Improvement Program		
CWC	California Water Code		
Delta	Sacramento-San Joaquin River Delta		
District	Rainbow Municipal Water District		
DMM	demand management measure		
DRA	Drought Risk Assessment		
DWR	California Department of Water Resources		
FPUD	Fallbrook Public Utility District		
FY	fiscal year		
GIS	geographic information system		
GPCD	gallons per capita per day		
Guidebook	DWR Guidebook for Urban Water Suppliers		
I-15	Interstate 15		
IPR	indirect potable reuse		
IRWMP	Integrated Regional Water Management Plan		
kWh	kilowatt hours		
manual	Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use		
MGD	million gallons per day		
MWD	Metropolitan Water District of Southern California		
PSAWR	Permanent Special Agricultural Water Rate		
SANDAG	San Diego Association of Governments		
SB X7-7	Senate Bill X7-7		

Section 1

Introduction

This 2020 Urban Water Management Plan (UWMP) has been prepared for the Rainbow Municipal Water District (District) in accordance with the requirements of California’s Urban Water Management Planning Act (Act) and related provisions of the California Water Code (CWC).

The remainder of this section provides an overview of the Act, relations to other planning efforts, UWMP organization, and a lay description.

1.1 Overview

The Act establishes as state policy that, *“the management of urban water demands, and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.”* To advance that goal, the Act requires that urban water suppliers develop UWMPs to assess current demands and supplies over a 20-year planning horizon and address methods to ensure reliable and adequate water service to meet the needs of the various categories of customers during normal, dry, and multiple dry years. The UWMP documents that the water supplies available to the District customers are adequate to meet demands over the required 20-year planning period.

The mission of the District is to provide its customers reliable, high quality water and water reclamation services in a fiscally sustainable manner. Together with the San Diego County Water Authority (Water Authority) and Metropolitan Water District of Southern California (MWD), the District works to provide a reliable supply to its customers through water management, conservation, and careful planning.

1.2 Urban Water Management Planning and the California Water Code

The UWMP was prepared in accordance with the Act. The Act is defined by the CWC, Division 6, Part 2.6, and Sections 10610 through 10657. The Act became part of the CWC with the passage of Assembly Bill 797 during the 1983-1984 regular session of the California legislature. The Act requires every urban water supplier providing water for municipal purposes to more than 3,000 connections or supplying more than 3,000 acre-feet (AF) of water annually to adopt and submit a UWMP every five years to the California Department of Water Resources (DWR). The Act regulates the contents of the UWMP as well as how urban water suppliers should adopt and implement the UWMP and the associated Water Shortage Contingency Plan (WSCP).

This 2020 UWMP includes newly required and recently revised components to address the expansion and revision of the Act, including but not limited to:

- Lay description
- Description of current and projected land uses in the service area
- Five previous years of system water losses
- Water savings
- Description of climate change impacts

- Energy intensity analysis
- Groundwater Sustainability Plan or alternative for underlying basins
- Seismic risk assessment and mitigation plan
- Five-year Drought Risk Assessment
- Water Shortage Contingency Plan with revised prescriptive elements and separate adoption requirements

1.3 UWMPs in Relation to Other Planning Efforts

The District's 2020 UWMP integrates with other District planning efforts and with related planning efforts of the Water Authority, the County of San Diego, and others. Key related planning efforts are listed below:

- **San Diego County Water Authority Regional UWMP:** Information on demands from the District's UWMP have been coordinated with the Water Authority for presentation in its 2020 Regional UWMP.
- **San Diego Association of Governments (SANDAG) Regional Plan:** The District's projections of future water demands are based on demographic projections made by SANDAG as part of its 2020 Regional Plan. The SANDAG projections are fully consistent with the adopted land use plans of the County of San Diego and each of the various municipalities within the county.
- **San Diego County General Plan:** As noted in the SANDAG Regional Plan description above, the District's water demand projections are consistent with the adopted General Plan land uses of the County of San Diego. The County will be able to use the District's UWMP as needed to provide documentation of available water supplies relative to any land use decisions that come before the County during the five-year life of the current UWMP.
- **Metropolitan Water District of Southern California UWMP:** Information on supplies provided to the Water Authority were noted and integrated into the District's UWMP.
- **San Diego Integrated Regional Water Management Plan:** See description below in Section 1.4.

1.4 Integrated Regional Water Management Plan

California legislation that was passed in 2000 promotes the development of Integrated Regional Water Management Plans (IRWMPs). The process involves an integrated approach to water management planning by providing the framework for local agencies to cooperatively manage local and imported water supplies and improve water supply quality, quantity, and reliability. Many of the IRWMP elements are also part of an UWMP.

The San Diego IRWMP, recently updated in 2019, supports the District's and the Water Authority's UWMPs by promoting regional planning and supporting projects that aim to increase water supply reliability and improve surface water and groundwater quality. IRWM planning and funding has helped to make water supply projects possible in the areas of seawater desalination, recycled water, local surface water, and groundwater, which are part of the region's projected mix of water resources. The IRWM program also supports water conservation, another key element of the District's and the Water Authority's UWMPs.

The District participated in the development of the San Diego IRWMP, a copy of which can be found at <http://www.sdirwmp.org/>. The watershed boundaries of the San Diego IRWMP planning region are shown in Figure 1-1.



Figure 1-1. San Diego IRWMP Watersheds

1.5 UWMP Organization

The District's UWMP follows the organization outlined in the *Final Guidebook for Urban Water Suppliers* (Guidebook) developed by DWR (2021). The summary below presents the remaining sections in this UWMP. Additionally, table numbering throughout this plan matches the numbering of the tables required by DWR, except in instances where the table label contains a letter (i.e., Table 6-7A). In this case, the letter indicates that the table is not required by DWR but has been added to the UWMP to provide additional tabulated information.

- **Section 2 – Plan Preparation** provides information on the District's process for developing this UWMP, including coordination and outreach.
- **Section 3 – System Description** provides a description of the service area, climate, water supply facilities, distribution system, demographics, land use, and historical and projected population.
- **Section 4 – System Water Use** presents historical and projected water use.
- **Section 5 – Baselines and Targets** presents baseline and target water consumption amounts and demonstrates that the 2020 water use target was met.
- **Section 6 – Water Supplies** describes and quantifies the current and projected sources of water available to the District including potential recycled water uses. A description and quantification of energy intensity is also presented.

- **Section 7 – Water Supply Reliability** describes the current water supply reliability, the 20-year projection, and 5-year drought risk assessment.
- **Section 8 – Water Shortage Contingency Planning** provides reference to the District’s water shortage contingency plan. The full WSCP is in Appendix D.
- **Section 9 – Demand Management Measures (DMMs)** presents and addresses DMMs to promote conservation and to reduce demand on the District’s water supply.
- **Section 10 – Plan Adoption, Submittal, and Implementation** describes the steps taken to adopt and submit the UWMP and the WSCP.
- **Section 11 – References** provides a list of references used to support plan development.
- Appendices A through F provide relevant supporting documents. DWR has provided a checklist of the items that must be addressed in each UWMP in accordance with the Act. The checklist makes it simple to identify exactly where in the UWMP each item has been addressed. The checklist has been completed for this UWMP and is provided in Appendix A. All tables in the UWMP tie to and are dictated by the DWR Guidebook unless noted otherwise.

1.6 Lay Description

The District provides water services to the County of San Diego’s unincorporated communities of Rainbow and Bonsall, a portion of the unincorporated community of Fallbrook, and small portions of the City of Oceanside. The District’s boundaries cover approximately 78 square miles. Between 2015 and 2020, the District annexed the area of Campus Park West, a commercial development that has yet to be constructed. The District has grown slightly in comparison to its previous 2015 UWMP but anticipates limited new residential development over the current UWMP planning horizon until 2045. However, the District also expects to see a continued decline in agricultural water use during this planning period.

Water demands in the District service area have declined significantly over the last 15 years, and the District expects to see an overall continued decline in water use. The drop in demands has occurred in response to increasing water prices, periods of drought-induced water use restrictions, declining agricultural consumption due to market conditions, improvements in agricultural irrigation efficiency, and increased customer conservation measures. Additionally, under the Water Authority’s Transitional Special Agricultural Water Rate (TSAWR) program, certain agricultural water customers agree to conservation cutbacks during shortages in exchange for discounted water. The program is now known as the Permanent Special Agricultural Water Rate (PSAWR) program, effective January 1, 2021.

The District’s water demand projections from 2020 to 2045 are based upon past demands. The District identified fiscal year (FY) 2004 as a peak demand year. The peak demand year was then compared to current demands and the overall trend was evaluated. The overall trend shows a decline in total demand from FY 2004 to FY 2020 by approximately 55 percent.

Currently, the District is wholly reliant on imported water sources that are delivered through both the Water Authority’s and MWD’s facilities but purchased through the Water Authority. The Water Authority determined that it has adequate water supplies to cover the demands for all of its retailers, including the District, for normal year, single dry year, and multiple dry year scenarios. The District is continually planning for worst case scenarios such as droughts and other natural disasters that may impact water supply availability. The District has an Emergency Response Plan in place to rapidly respond to emergency supply issues. Additionally, the District plans to initiate the Imported Water Return Flow Reclamation Project to provide a source of local water supply by 2030, which would add

2,000 acre-feet per year (AFY) or approximately 14 percent of the 2020 total demand. In addition, the District has in place a contractual arrangement with the Fallbrook Public Utility District to provide emergency access to a local water supply from the Santa Margarita Conjunctive Use Project in the event of an interruption of imported water supplies.

Section 2

Plan Preparation

This section presents the basis for preparing the UWMP, units of measure, coordination, and outreach.

2.1 Application of UWMP Act to the District

The District has prepared this UWMP in accordance with the Act and the CWC. The District is subject to the Act because it satisfies the definition of an “Urban Water Supplier” operating a “Public Water System” and has over 3,000 connections and/or supplies over 3,000 AFY, as described in Section 1. Required District identification information is summarized in Table 2-1.

Table 2-1. Public Water System Identification			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	2020 Volume of Water Supplied (AF)
3710016	Rainbow MWD	8,254	14,297
Total		8,254	14,297

2.2 Regional Planning and Compliance

The Act allows groups of water agencies to form Regional Alliances for reporting on per capita water use targets. The District is not part of a regional alliance. Required plan identification information is presented in Table 2-2.

Table 2-2. Plan Identification		
Select	Type of Plan	
X	Individual UWMP	
	No	Water Supplier is also a member of a Regional UWMP
	No	Water Supplier is also a member of a Regional Alliance
No	Regional UWMP	

2.3 Units of Measure

The District reports its data on a fiscal year (FY) basis. Water supplies and demands are reported on an AF volume basis and may sometimes be referred to in AFY to represent the total volume of water referenced for a full FY. Both of these units are maintained consistently throughout the UWMP. Required UWMP information is summarized in Table 2-3.

Table 2-3. Units of Measure	
Type of Agency	
x	Agency is a retailer
Fiscal or Calendar Year	
x	UWMP tables are in Fiscal Years
Units of Measure Used in UWMP	
x	Acre-Feet (AF) (1 AF = 325,851 gallons)

2.4 Coordination and Public Outreach

This section describes the District's coordination efforts with their wholesaler, as well as other agencies and communities in their service area.

2.4.1 Wholesale and Retail Coordination

The District is wholly reliant on imported water sources that are delivered through both the Water Authority's and MWD's facilities but purchased through the Water Authority. The District has coordinated the preparation of its UWMP with the Water Authority and has provided the Water Authority with projected water demands in five-year increments through 2045. Required UWMP information is summarized in Table 2-4.

Table 2-4. Water Supplier Information Exchange	
Wholesale Water Supplier Name	
Potable Water	Metropolitan Water District of Southern California
Potable Water	San Diego County Water Authority

2.4.2 Coordination with Other Agencies and the Community

The District coordinated the preparation of its UWMP with appropriate local agencies, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practical. Notifications of the update of the 2020 UWMP and WSCP were sent via email on March 25, 2021, which was at least 60 days prior to the public hearing. Notifications were sent to the County of San Diego, the Water Authority, Fallbrook Public Utility District, and the City of Oceanside.

The draft UWMP and draft WSCP will be made available on the District's website beginning on May 11, 2021. Within 30 days of their adoption, copies of the final UWMP and final WSCP will be sent to DWR, the California State Library, and the County of San Diego, and will be posted on the District's website and made available for review in hardcopy form at the District's offices during normal working hours.

Section 3

Rainbow Service Area

This section describes the District’s water system. It contains a description of factors that impact water demand such as service area climate and population.

3.1 Service Area Boundaries

The District serves the County of San Diego’s unincorporated communities of Rainbow and Bonsall, a portion of the unincorporated community of Fallbrook, and small portions of the City of Oceanside. The District’s boundaries cover approximately 78 square miles. The northern part of the District is located north of the San Luis Rey River and straddles Interstate 15 (I-15) while the southern part of the District is located west of I-15 and straddles the San Luis Rey River. The District’s service area boundaries are shown in Figure 3-1 on the following page, and they include a northern, central, and southern region.

The District provides water service to all of the area within its boundaries and sewer service to a smaller area within the San Luis Rey river valley.

3.2 Annexations

Between 2015 and 2020, the District annexed the area of Campus Park West, a yet to be constructed commercial development in the vicinity of Interstate 15 and State Highway 76. Additionally, the District has filed an application with the San Diego Local Agency Formation Commission (SDLAFCO) to annex the Citro residential development. The annexation was approved by SDLAFCO on May 3, 2021. This annexation contains an area of approximately 275 acres for a development projected to contain approximately 880 homes.

3.3 Governance

The District was formed in 1953 under the Municipal Water District Act of 1911 (Section 7100 et. seq. of the CWC). The District joined the Water Authority and MWD in 1954, acquiring the right to purchase and distribute imported water throughout its service area.

The District is governed by a five-member elected Board of Directors which sets ordinances, policies, taxes, and rates for providing sewer and potable water services within the District’s service area.

3.4 Climate

The District’s climate is mild, varying from a low mean daytime temperature of 69 degrees in the winter to a high mean daytime temperature of 86 degrees in the summer. The average annual rainfall of approximately 15 inches occurs primarily from December through March. Figure 3-2 and Figure 3-3 summarize the monthly average temperature and rainfall conditions collected from Station 62 of the California Irrigation Management Information System (CIMIS) database from the earliest data point in 1986 through 2020 (www.cimis.water.ca.gov).

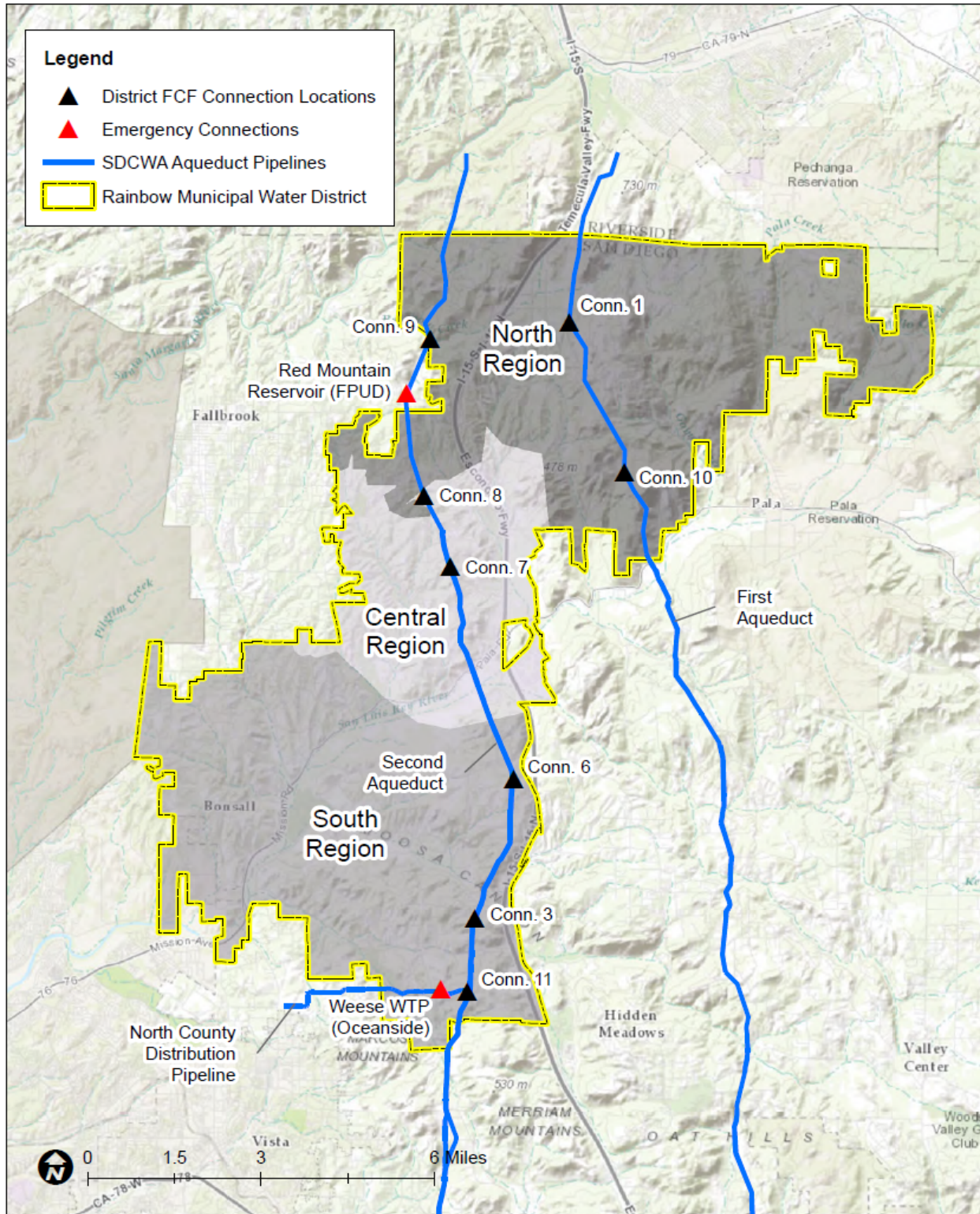


Figure 3-1. Rainbow Municipal Water District Service Area

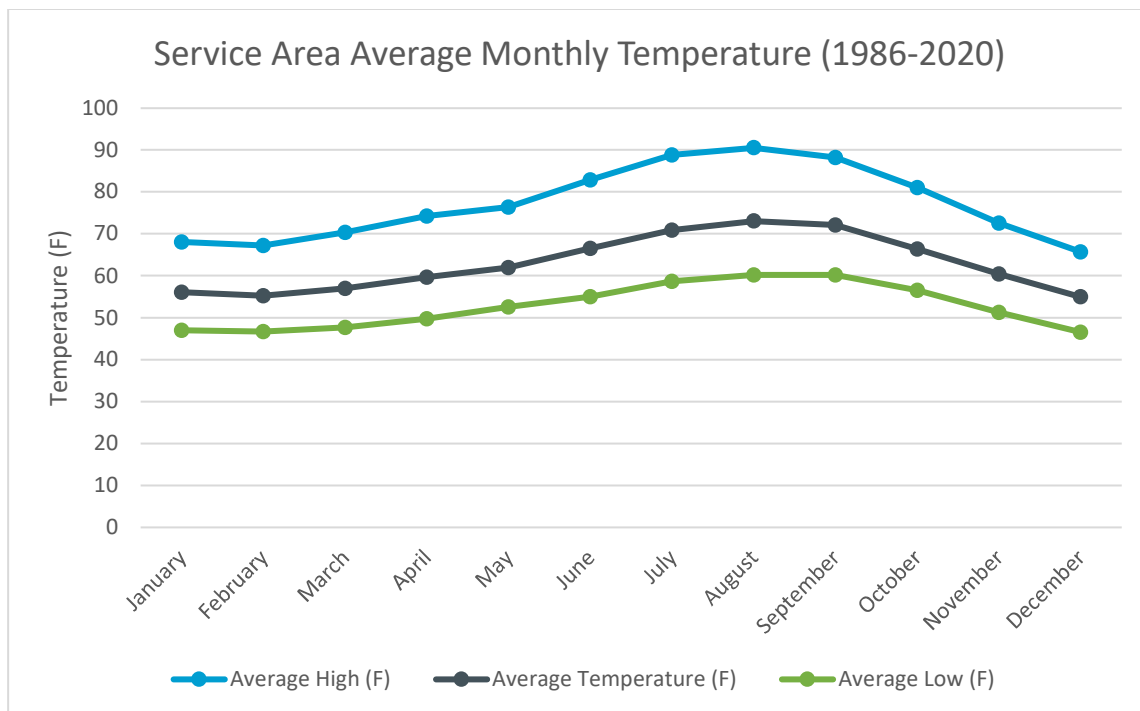


Figure 3-2. Service Area Average Monthly Temperature from Station 62 (1986-2020)

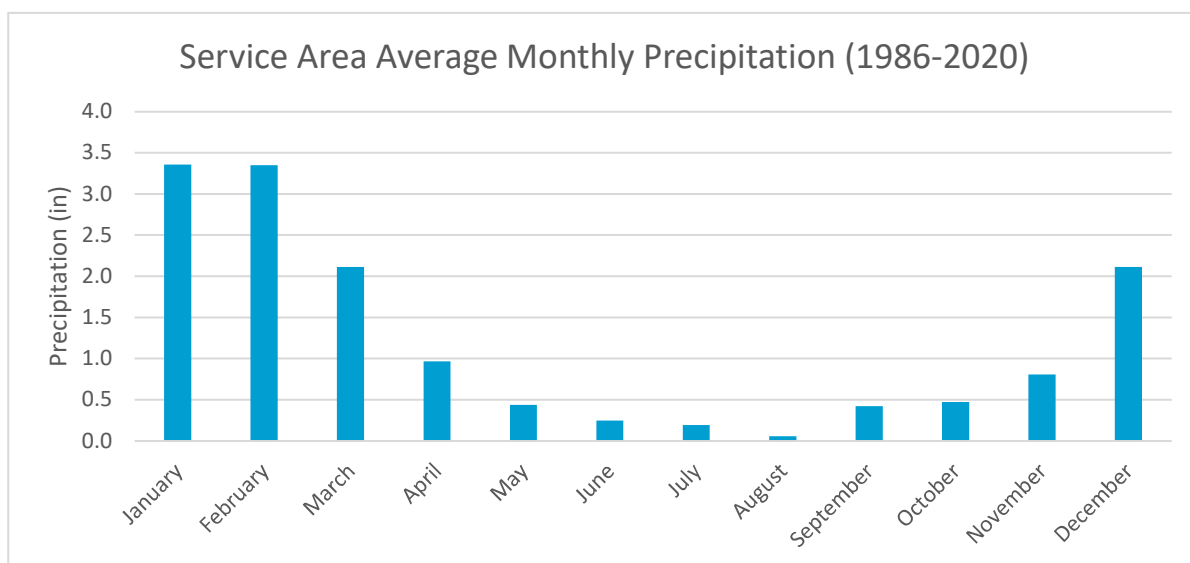


Figure 3-3. Service Area Average Monthly Precipitation Station 62 (1986-2020)

3.5 Population

To facilitate the projection of the District’s future water demands, it is important to have well supported estimates of future population totals. The Water Authority coordinated with SANDAG to obtain the estimated 2020 population and projections through 2045 for all of its member agencies. The Water Authority shared the population information with the District. SANDAG collects and analyzes land use, population, and economic information within the County of San Diego in order to develop a number of useful projections such as population. SANDAG updated their population

methodology since the 2015 UWMP to include information from the California Department of Finance. The Water Authority provided SANDAG with individual member agency boundaries via a geographic information system (GIS), so the population data is specific to the District's boundary.

The District has grown very little in the last five years in comparison to the growth in the period between 2010 and 2015, but now the District anticipates increasing levels of development over the current UWMP planning horizon. The projected increase in population reflects the maximum amount of residential development allowable under the last update to the San Diego County General Plan. Current and projected future District population counts are summarized in Table 3-1.

It should be noted here that the current development approval environment in the unincorporated areas of San Diego County is such that the maximum values listed below are unlikely to be achieved.

Population Served	2020	2025	2030	2035	2040	2045
	21,841	22,678	25,862	29,614	31,058	31,819

Projections based on SANDAG Series 14 growth forecast (Version 17).

3.6 Socioeconomics

According to the Data USA, which uses Bureau of Labor Statistics (BLS) data, Rainbow and Bonsall have a median household income of approximately \$68,000 and \$84,000, respectively and a median property value of \$446,000 and \$691,000, respectively. Between 2016 and 2018, females between the ages of 55 and 64 were the largest demographic living in poverty, and the overall poverty rate was between seven and 13 percent. Approximately eight percent of people in the area were uninsured and 32 percent were insured through Medicare and Medicaid.

3.7 Service Area Land Uses

Most of the District is mountainous and consists of hills and valleys with a mix of primarily intermittent streams and some perennial streams and rivers. The topography ranges in elevation from 150 to 2,451 feet above mean sea level. The San Luis Rey River crosses diagonally through the District from the northeast to the southwest, and several smaller creeks divide the area, including Gopher Canyon, Moosa Canyon, and Tamarack Creeks. Much of the area still remains in its natural state of chaparral, oak, and coastal sage vegetation.

The land uses for the service area of the District are heavily agricultural, and water for agriculture accounts for more than half of District water sales. Agricultural crops include avocados, citrus, and tomatoes. Other land uses include commercial nurseries and livestock. Commercial land use in the District is very limited and is concentrated along the I-15 and State Route-76 (SR-76) corridors. In some areas, land use is transitioning from primarily agricultural use to now include a significant component of rural residential development along with multiple dense, large scale residential and mixed-use developments planned for the near future. It should be noted that land use planning trends have recently discouraged large scale residential development in rural areas of San Diego County, so other than currently approved projects the potential for additional large-scale development is limited.

Section 4

Water Use

This section presents the historical and projected retail water demands by customer type, climate change considerations, distribution system water losses, and water savings.

4.1 Existing Use by Customer Class

Total water use in the District during FY 2020 is presented in Table 4-1. Water use is broken into five water use categories plus water losses.

Use Type		FY 2020 Actual	
Use Category	Additional Description	Level of Treatment When Delivered	Volume (AF)
Single Family		Drinking Water	3,266
Multi-Family		Drinking Water	280
Commercial		Drinking Water	745
Institutional / Governmental		Drinking Water	43
Agricultural		Drinking Water	8,876
Losses	Non-Revenue Water, including apparent and real losses	Drinking Water	1,087
Total			14,297

Volumes reported for individual customer classes are metered sales, exclusive of non-revenue water (real and apparent losses).

4.2 Projected Future Water Use

The following section describes the methodology used to determine the District's demand projections.

4.2.1 Approach / Methodology

The District forecasts future water demands using existing unit demands as a baseline and scales these based on the net effects of growth, conservation, agricultural outlook, and other factors. The forecast methodology is outlined below.

- 1. Past Demands.** The District identified FY 2004 as a peak demand year. The peak demand year was then compared to current demands and the overall trend was evaluated. The overall trend shows a decline in total demand by approximately 55 percent since FY 2004.
- 2. New development.** New residential development demands are generated using unit demand factors that reflect the anticipated decline from the baseline unit use factors per connection. The unit use factors are applied to the corresponding water connection projections for the planning period.

3. **Reduced demands due to additional conservation efficiencies and other factors.** The District projects unit use rates will continue to decline over time in response to increased water rates, conservation education, and shifting landscape preferences.
4. **Change in Agricultural demands.** Agricultural demands are forecast based on declining irrigated acreage, increasing agricultural irrigation efficiencies, and price-elasticity of demand response to projected increased water prices.

4.2.2 Projected Potable Water Demands

District water demands peaked in FY 2004 at approximately 33,300 AF and have subsequently declined by more than 55 percent due to the factors described below. As reported in Table 4-1, FY 2020 total water demand was 14,297 AF, which is the lowest demand recorded for the District since before the early 1980s. The District projects that future demands will continue to decline at an overall rate of four percent every five years, as shown in Table 4-2. Note that the District does not deliver any non-potable water at this time, so it is not included in the table.

Table 4-2. Projected Water Demands						
Use Type		Projected Water Use (AF)				
	Additional Description (as needed)	2025	2030	2035	2040	2045
Single Family		3,128	3,003	2,882	2,767	2,657
Multi-Family		263	253	243	233	224
Commercial		745	715	686	659	633
Institutional/Governmental		40	39	37	36	34
Agricultural		8,530	8,188	7,861	7,546	7,245
Losses	Non-Revenue, including real losses	1,044	1,003	963	924	887
Total		13,750	13,200	12,672	12,165	11,679

Notes:

- (1) Projections were developed by the District.
- (2) Volumes reported for individual customer classes are projected metered sales, exclusive of non-revenue water and actual losses.
- (3) Commercial includes use by schools.
- (4) Projections by water use type are based upon percentage of total 2020 actual demand for each water use type.

The overall trend in declining demand results from increased conservation efforts by District customers and a loss of acreage in agricultural production. The overall drop in demand has also occurred in response to increasing water prices, periods of drought-induced water use restrictions, and a downward trend in agricultural market conditions for the area. The District was participating in the TSAWR program established by the Water Authority, which was originally enacted in 2008. TSAWR has evolved into PSAWR as of January 1, 2021. Under TSAWR/PSAWR, certain agricultural water customers agree to conservation-based cutbacks during water shortages in exchange for discounted water rates. Although some agricultural sectors, such as nurseries, have seen growth in

business and increases in water demands, there is an overall downward trend for agricultural water use, due to increased agricultural efficiencies, water costs, market conditions, and aging groves.

4.2.3 Climate Change – Influence on Water Demands

The District considered climate change factors when conducting the water demand projections. In FY 2020, agricultural demands accounted for 62 percent of the District’s water use. Climate change is expected to bring warmer temperatures and drier conditions to the region, which would typically result in an increase in agricultural unit water use per acre. However, any demand increases related to hotter and drier conditions in the agricultural sector are outweighed by the overall significant downward trend in total agricultural acreage. Coupled with the reasons described in Section 4.2.2, agricultural acreage is also expected to decrease due to climate change related inhospitable agricultural land conditions which prohibit cost effective agricultural production due to high imported water costs.

4.2.4 Projected Recycled Water Demands

The District does not currently deliver any recycled water. The District has previously evaluated recycled water development projects and found these to be infeasible. There are no future plans for recycled water development at this time. Additional discussions on the District’s local supply development plans are presented in Section 6.

4.2.5 Projected Total Water Demands

The District’s total projected demands are summarized in Table 4-3.

	2020	2025	2030	2035	2040	2045
Potable and Raw Water Demands ⁽¹⁾ (from Tables 4-1 and 4-2)	14,297	13,750	13,200	12,672	12,165	11,679
Recycled Water Demand (from Table 6-4)	0	0	0	0	0	0
Total Water Demand	14,297	13,750	13,200	12,672	12,165	11,679

(1) The District does not have any raw water demands. All demands shown are for potable water.

4.3 Distribution System Water Loss

Distribution system water losses result from leaks from pipelines and storage facilities. The District has calculated losses using the American Water Works Association (AWWA) Manual M36, *Water Audits and Loss Control Programs*, and the corresponding AWWA calculation worksheets documented in Appendix L of DWR’s 2020 UWMP Guidebook. The analysis distinguishes between real losses, which are actual losses due to leaks from pipelines, storage reservoirs, and service connections; and apparent losses, which consist of water that is put to beneficial use, but which is not recorded as metered water sales due primarily to under-registering customer meters. The worksheets are provided as Appendix B. The audit results are summarized in Table 4-4.

Table 4-4. Water Loss Audit Reporting			
End of Reporting Period	Volume of Water Loss (AF)		
	Real ⁽¹⁾	Apparent ⁽²⁾	Total
07/2020	143	598	741
07/2019	4	833	837
07/2018	50	1,250	1,300
07/2017	719	851	1,570
12/2015 ⁽³⁾	204	949	1,153

(1) Real losses are actual losses due to leaks.

(2) Apparent losses consist of water that is beneficially used but not recorded as metered sales.

(3) Prior to FY17, Water Loss Audit reporting was done on a calendar year basis.

4.4 Estimating Future Water Savings

The District's water demand forecasting methodology, as summarized in Section 4.2.1, specifically accounts for future water savings resulting from conservation and other factors. Related information required for the UWMP is summarized in Table 4-5.

Table 4-5. Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections?	Yes
Page Number(s) where Described	4-2
Are Lower Income Residential Demands Included in Projections?	Yes

4.5 Water Use for Lower Income Households

The District's water demand forecasting methodology, as summarized in Section 4.2.1, incorporates the existing and planned housing in the District's service area, as outlined in the County of San Diego's General Plan. These housing elements, inclusive of low-income housing, are included in the demographic summaries and forecasts of SANDAG on which the District water demand forecasts are based. According to SANDAG's Regional Housing Needs Assessment Plan for the 2021-2029 planning period, 16.6 percent of existing households in the unincorporated region of the County of San Diego are considered low income and 22.5 percent are considered very low income. In 2020, this equates to approximately 8,540 people and 5,600 AFY based on the average 2020 gallons per capita per day (GPCD).

Section 5

Baselines and Targets

This section describes the District’s Senate Bill X7-7 (SB X7-7) GPCD baseline and target development based on the analysis conducted as part of the 2015 UWMP. Compliance with the 2020 target is presented.

5.1 SB X7-7 Water Conservation Act of 2009

In 2009, the legislature approved, and the Governor signed SB X7-7, the Water Conservation Act of 2009. The Act required urban water agencies to achieve a reduction in per capita water use of 20 percent by 2020, relative to certain specified baseline conditions.

As a part of SB X7-7, urban water suppliers were required to develop a 2015 interim target and a 2020 urban water use target to meet the Act’s water conservation intent. In 2010, DWR released a manual titled *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (manual), which provided retail water agencies with specific requirements and methodologies for setting water use efficiency goals and compliance standards for 2020.

In the 2015 UWMP, the District updated the calculations presented in the 2010 UWMP to utilize refined annual population estimates developed by SANDAG and referenced 2000 and 2010 census data at the census block level. These revised population counts resulted in minor changes to the District’s 2015 and 2020 per capita use targets, reducing the target values by approximately four percent in comparison to the target values reported in the District’s 2010 UWMP. The complete set of SB X7-7 calculation tables, also known as the Verification Form, are included in Appendix C.

5.2 Baseline Periods and Targets

SB X7-7 requires agencies to develop baseline per capita water use and to develop reduced per capita consumption targets in order to comply with the conservation goals to achieve 20 percent reduction by 2020. The baseline periods can be 10- or 15-years and must end between December 31, 2004 and December 31, 2010. In the 2010 UWMP, the manual provided four alternative methods for calculating baselines and targets. The District selected Method 1 for use in the 2010 UWMP and identified a baseline period of 1999 through 2008. Water suppliers must also calculate a five-year baseline to confirm that the selected 2020 target meets the minimum water use reduction requirements and is a continuous five-year period that ends no earlier than December 31, 2007 and no later than December 31, 2010. The District selected a baseline between 2003 and 2007. The per capita use target level for 2020 is summarized in Table 5-1.

Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target GPCD
10-Year	1999	2008	1,503	1,202
5-Year	2003	2007	1,515	1,202

Actual per capita water use in the District for FY 2020 was determined by converting the total water use, reported as 14,297 AFY in Table 4-1, to 12,775,142 gallons per day and dividing this by the total population for 2020, reported as 21,841 people in Table 3-1. Although it is allowable to adjust the per capita water use by deducting the agricultural water use, the baselines and targets that were developed in 2015 included agricultural use. Thus, agricultural water use is included in the 2020 compliance calculations as well. The actual per capita water use in the District for FY 2020 was 585 GPCD, which is less than the SB 7X-7 2020 target level of 1,202 GPCD. This indicates the District is in compliance with the SB 7X-7 2020 target. SB X7-7 2020 compliance information is summarized in Table 5-2. Additionally, a series of tables that compose the DWR Compliance Form, are included in Appendix C.

Table 5-2. Per Capita Use 2020 Compliance				
Actual 2020 GPCD	Optional Adjustments		2020 GPCD (adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2020?
	Total Adjustments GPCD	Adjusted 2020 GPCD		
585	0	585	585	Yes

Section 6

System Supplies

This chapter describes the existing and planned supplies of water available to the District, including the District's current supply of water purchased from the Water Authority and the District's plans for the development of local groundwater supply projects.

6.1 Purchased or Imported Water

The District is wholly reliant on imported water sources that are delivered through both the Water Authority's and MWD's facilities but purchased through the Water Authority. Currently, the Water Authority's potable water supply is produced by the Water Authority Carlsbad Seawater Desalination Project, the Water Authority Twin Oaks Valley Water Treatment Plant in San Marcos, and the MWD Skinner Water Treatment Plant in Riverside County. The vast majority of water served to the District comes from the Skinner Water Treatment Plant. A complete description of the Water Authority supplies can be found in its 2020 UWMP (www.sdcwa.org/uwmp).

MWD has two main sources of supply, the California State Water Project and the Colorado River. A complete description of all of MWD and its supplies can be found in MWD's Regional UWMP (http://www.mwdh2o.com/PDF_About_Your_Water/Draft_Metropolitan_WSCP_February_2021.pdf). The District has relied upon the water supply information provided by the Water Authority in preparing the District's 2020 UWMP and for the purposes of fulfilling the requirements of the Act.

6.2 Existing and Verifiable Local Supplies

The District does not currently obtain any of its supply from local sources. The District has studied opportunities to develop local recycled water and groundwater supplies. These future local supply opportunities are addressed in Section 6.3.

6.2.1 Groundwater

The District does not currently utilize groundwater as an existing source of supply. The District is continuing to evaluate opportunities for development of groundwater supplies from the San Luis Rey River Basin (9-7), as further described in Section 6.3. This basin is currently identified as a medium priority basin. There is no historical groundwater pumping to report, and this is documented in Table 6-1.

		Supplier does not pump groundwater.				
Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
	None	--	--	--	--	--
	Total	0	0	0	0	0

6.2.2 Surface Water

The District does not currently utilize local surface water as an existing source of supply. Several small surface water bodies, most notably the San Luis Rey River, run through the District. While the river may see larger flows during storm events, water flow is minimal most of the year. River flows are insufficient for diversion for use as a water supply. The District has no plans to develop surface water within its service area as a water supply.

6.2.3 Stormwater

The District does not currently utilize stormwater as an existing source of supply. The district is rural and is largely undeveloped and in an undisturbed state, and its terrain is dominated by mountains and valleys making stormwater capture infrastructure infeasible. The District has no plans to develop stormwater as a water supply within its service area.

6.2.4 Recycled Water

The District does not own or operate any recycled water distribution facilities and does not currently utilize recycled water as an existing source of supply. Additional information on wastewater generation and treatment, agency coordination, and the District's actions to encourage the use of recycled water are addressed below.

6.2.4.1 Wastewater Collection and Treatment

The District has a contract in place with the City of Oceanside in which the District owns 1.5 million gallons per day (MGD) of sewage treatment capacity in the City of Oceanside's San Luis Rey Water Reclamation Plant (SLRWRP). The District's sewer service area includes over 2,745 connections mainly along the SR-76 corridor. The remainder of the service area is more rural and uses private septic tank systems. The District conveys the wastewater collected by its system to the SLRWRP via a wastewater line located along North River Road. Although 1.5 MGD capacity is available, the District does not currently produce that volume of wastewater, and in 2020 conveyed 0.8 MGD to the Oceanside plant. Wastewater collection volume estimates are shown in Table 6-2.

Wastewater Collection		Recipient of Collected Wastewater				
Wastewater Collection Agency	Volume Metered or Estimated?	Volume (AF) from Service Area 2020	Receiving Entity	Treatment Plan Name	WWTP Located in the District	Operation Contracted to Third Party?
The District	Metered	883	City of Oceanside	San Luis Rey WWTP	No	No
Total		883				

There is currently no wastewater treatment or discharge within the District service area, as presented in Table 6-3.

Table 6-3. Wastewater Treatment and Discharge Within the District Service Area

Wastewater Treatment Plant Name	Discharge Location	Disposal Method	Treats Flow from Outside Service Area?	Treatment Level	2020 Volumes (AF)		
					Volume Treated	Recycled Within Service Area	Recycled Outside of Service Area
<input checked="" type="checkbox"/> No wastewater is treated or disposed of within the UWMP service area. The Supplier will not complete the table below.							
Total					0	0	0

6.2.4.2 Recycled Water Use

Recycled water has many potential uses, primarily exterior uses such as agricultural or landscape irrigation, wildlife habitat enhancement, wetlands maintenance, industrial reuse, groundwater recharge, indirect potable reuse, and others.

Currently, the District does not have any verifiable plans for the development of recycled water. Therefore, the supply tables show no projected recycled water beneficial uses, and there are no current or recycled water uses in the service area. The required DWR tables reflecting this are presented in Table 6-4 and Table 6-5.

Table 6-4. Current and Projected Recycled Water Uses Within Service Area (AF)

Beneficial Use Type	General Description	Level of Treatment	2020	2025	2030	2035	240	2045
Agricultural irrigation			--	--	--	--	--	--
Landscape irrigation			--	--	--	--	--	--
Golf course irrigation			--	--	--	--	--	--
Commercial use			--	--	--	--	--	--
Industrial use			--	--	--	--	--	--
Geothermal/other energy			--	--	--	--	--	--
Recreational impoundment			--	--	--	--	--	--
Wetlands or wildlife habitat			--	--	--	--	--	--
Groundwater recharge (IPR)			--	--	--	--	--	--
Indirect potable reuse			--	--	--	--	--	--
Direct potable reuse			--	--	--	--	--	--
Total			0	0	0	0	0	0

Table 6-5. Projected vs. Actual 2020 Recycled Water Use (AFY)		
Use Type	2015 Projection for 2020	Actual 2020 Use
Agricultural irrigation	--	--
Landscape irrigation (excludes golf course)	--	--
Golf course irrigation	--	--
Commercial use	--	--
Industrial use	--	--
Geothermal and other energy production	--	--
Seawater intrusion barrier	--	--
Recreational impoundment	--	--
Wetlands or wildlife habitat	--	--
Groundwater recharge (IPR)	--	--
Surface water augmentation (IPR)	--	--
Direct potable reuse	--	--
Total	0	0

6.2.4.3 Projects to Expand Recycled Water Use

As part of its Water Master Plan Update completed in 2016, the District completed a concept study which detailed how a wastewater treatment plant could be constructed within the District, the potential benefits of such a system, the potential recycled water demand available, and the system that would be needed to serve recycled water for that demand. As part of the concept study, the District coordinated with the City of Oceanside to explore wastewater treatment and recycled water opportunities. The District concluded the project was not feasible at this time (Atkins, 2016).

Currently, the District does not have any planned actions to encourage and optimize the future use of recycled water within the District service area as shown in Table 6-6. However, should the State develop manageable direct potable reuse regulations, there is a significant opportunity for reuse of wastewater in such a system. The main driver of infeasibility for recycled water use was the capital cost of the distribution system. A direct potable reuse project could utilize existing distribution system assets, thus lowering the cost considerably.

Table 6-6. Projects to Expand Future Recycled Water Use			
Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation			
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Use (AFY)
-	-	-	-
Total			-

6.2.5 Desalinated Water Opportunities

The District currently does not have its own source of desalinated supply. However, the District's plans for the possible development of a brackish groundwater desalting project are described in Section 6.3. Additionally, desalination has recently become a source of supply for the Water Authority with the completion and operation of the Poseidon Carlsbad Desalination Project in Carlsbad, which adds 50 MGD of desalinated water to the Water Authority supply portfolio. However, the water from the Carlsbad plant cannot reach most of the District's service area due to system hydraulic constraints.

6.2.6 Exchanges or Transfers

The UWMP Act encourages transfers and exchanges of water between agencies in order to improve the reliability and quality of agency water supplies. Although the District relies entirely upon water purchased from the Water Authority, it participates in emergency transfers with neighboring agencies in order to improve reliability. The District has interconnections with the City of Oceanside at the City's Weese Water Treatment Plant and with the Fallbrook Public Utility District (FPUD). In addition to the existing interconnections, the District's Capital Improvement Program (CIP) from the 2016 Water Master Plan Update describes the plan to develop additional interconnections to the FPUD system. The proposed new interconnections would provide additional reliability to some of the District's water pressure zones which need additional fire flow capacity or supply redundancy. Regional exchanges and transfers being pursued by the District and the Water Authority are documented in the Water Authority's UWMP.

6.3 Possible Future Local Supplies

The District has conducted and reviewed studies of two possible local supply projects, as described below.

6.3.1 Recycled Water Project

Considering recent drought conditions within southern California, the District has contemplated whether construction of its own water recycling project would be more cost effective and resource-efficient than continued conveyance of wastewater flows to the City. As previously noted in Section 6.2.4.3, the District concluded the project is not feasible at this time.

6.3.2 Groundwater Desalter

In January 2016 the District completed a preliminary study (West Yost Associates, 2016) examining the feasibility of developing local San Luis Rey River basin groundwater resources for District use. The project would include a well field, and either the construction of a Rainbow groundwater desalting plant or another appropriate form of treatment. The study examined a project developing up to 4,000 AFY of new treated supply. The water to be treated originates as District-supplied imported water to the basin that percolates to the groundwater as a result of agricultural irrigation and return flows from septic systems. As such, the District classifies the project as an Imported Water Return Flow Reclamation Project.

The District has been evaluating the findings of the preliminary study and will soon commence further action on the project. Although the results of the study appear promising, the District recognizes that additional engineering and environmental evaluations will be necessary to confirm project feasibility and sizing. For purposes of this UWMP, the District anticipates that a Phase I groundwater project would be sized for production of approximately 2,000 AFY beginning in 2030,

Further expansions to higher capacities may be possible but are subject to various planning uncertainties.

6.3.3 Summary of Possible Local Supply Volumes

For the purposes of supply planning, supply projects are categorized as Verifiable, Planned, or Conceptual. **Verifiable** projects are those projects that have a high level of certainty of being completed, such that they can be relied on as an assured component of the future supply portfolio. They meet California Environmental Quality Act (CEQA) requirements, have permits, and/or contracts have been executed. **Planned** projects are those that have been subject to affirmative feasibility investigations, but which have additional permitting, environmental, and/or financial approval hurdles remaining before they are implemented. **Conceptual** projects are proposed project concepts that have not been subject to formal study or that have significant uncertainties or obstacles to implementation.

For formal UWMP reporting, the District includes verifiable and planned projects in its official projections of future supply availability. Currently, there is one planned project as summarized in Table 6-7 below.

Name of Future Projects or Programs	Joint Project with other agencies?	Description	Planned Implementation Year	Planned for Use in Year Type	Expected Supply (AFY)
Imported Water Return Flow Reclamation Project	No	San Luis Rey River basin groundwater well field, and the construction of a groundwater desalting plant or another appropriate form of treatment	2030	All	2,000

6.4 Summary of Existing and Planned Sources of Water

Section 6 has served to identify all of the District's existing, planned, and potential water supply sources available to meet the District's anticipated demands. Table 6-8 lists the District's sources of supply for FY 2020, and Table 6-9 lists the District's projected sources and volume of verifiable or planned supply for the UWMP's planning horizon.

Water Supply	Additional Detain on Water Supply	FY 2020	
		Volume (AF)	Water Quality
Purchased or Imported Water	San Diego County Water Authority	14,297	Drinking Water
	Total	14,297	

Water Supply	Description	Projected Water Supply, AF				
		2025	2030	2035	2040	2045
Purchased or Imported Water	San Diego County Water Authority	13,750	13,200	12,672	12,165	11,679
Groundwater	Imported Water Return Flow Reclamation project	0	2,000	2,000	2,000	2,000
Recycled Water		0	0	0	0	0
Total		13,750	15,200	14,672	14,165	13,679

Only "Verifiable" and "Planned" projects are included in this table.

6.5 Climate Change – Influence on Water Supply

The Water Authority has evaluated the potential influence of climate change on its supply, on which the District is reliant for its potable supply. The following summarizes the Water Authority's analysis and is excerpted from the March 2021 draft of their UWMP.

[Excerpt from Water Authority Draft UWMP, March 2021]

When evaluating the effects of climate change on long-term water supply planning, a distinction should be made between climate and weather. Weather consists of the short-term (i.e., minutes to months) changes in the atmosphere. Climate is how the atmosphere behaves over relatively long periods of time. Climate change refers to changes in long-term averages of daily weather conditions. Changes to climate will be gradual, providing water supply agencies the ability to adapt planning strategies to manage for the supply uncertainties. The effect on supply would be captured in each five-year update to the UWMP.

Researchers have concluded that increasing atmospheric concentrations of greenhouse gases, such as carbon dioxide, are causing the Earth's air temperature to rise. While uncertainties remain regarding the exact timing, magnitude, and regional impacts of the temperature and potential precipitation changes due to climate change, researchers have identified several areas of concern that could influence long-term water supply reliability. These potential areas are listed below:

- **Loss of Natural Snowpack Storage.** Rising temperatures reduce snowpack in the Sierra Nevada because more precipitation falls as rain, and snowmelt occurs sooner. Snowpack in the Sierra Nevada is the primary source of supply for the State Water Project. Snowpack is often considered a large surface "reservoir," where water is slowly released between April and July each year. Much of the state's water infrastructure was designed to capture the slow spring runoff and deliver it during the drier summer and fall months. The California Department of Water Resources projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050.
- **Sea Level Rise.** Rising sea levels could increase the risk of damage to water and water recycling facilities from storms, high-tide events, and erosion of levees. A potential catastrophic levee breach in the Delta could interrupt supplies from the State Water Project, potentially reducing supply deliveries to the San Diego region from Metropolitan. In addition, rising sea levels could cause saltwater intrusion into the Delta, degrading drinking water quality. More freshwater releases from upstream reservoirs would be required to repel the sea to maintain salinity levels for municipal, industrial, and agricultural uses.
- **Changes in Average Precipitation and Runoff Volume.** The effect of climate change on overall precipitation and runoff volumes is still unclear and highly uncertain. For example, a number of studies conclude that the flow of the Colorado River may be reduced by climate change, but a wide disparity exists on the predicted volume of that change. Yield from local

surface water resources could potentially be reduced if annual runoff volumes are reduced due to a decline in precipitation or if an increase occurs in evapotranspiration in reservoirs. Research has yet to clarify how precipitation levels may be impacted by climate change.

- **Change in Frequency and Intensity of Droughts.** Warming temperatures, combined with potential changes in rainfall and runoff patterns, could exacerbate the frequency and intensity of droughts.

6.6 Energy Intensity

Water energy intensity is the total amount of energy used per AF to power the water management processes occurring within the District’s operational control. The District has selected to report its energy intensity using the total utility approach option as outlined in the DWR 2020 Guidebook. Energy used in the Water Authority’s water supply process or in the transmission to the District from the Water Authority is not included in this analysis. Energy usage for each applicable water distribution facility is provided by the associated electricity meter and reported in kilowatt-hours (kWh). For the analysis, the annual volume of water entering the distribution system was summed for the period from July 1, 2019 to June 30, 2020. There is no electrical billing data to exactly match this period, so the best matched data from June 19, 2019 to June 18, 2020 was used to determine the energy consumed. Table 6-10 presents an estimated energy intensity for the total utility, summing energy intensity for all water system facilities during the 2020 FY. The energy intensity for the 2020 FY was 150 kWh/AF.

Table 6-10. Energy Intensity-Total Utility Approach			
Urban water supplier:	Rainbow Municipal Water District		
Water delivery product:	Retail potable water deliveries		
DWR Table O-1B: Energy Intensity - Total Utility Approach			
Enter start date for reporting period	7/1/2019	Urban Water Supplier Operational Control	
End date	6/30/2020		
	Sum of All Water Management Processes	Non-Consequential Hydropower	Net utility
	Total utility		
Volume of water entering process (AF)	14,297	0	14,297
Energy consumed (kWh)	2,147,875	0	2,147,875
Energy intensity (kWh/AF)	150	0.0	150
Quantity of self-generated renewable energy			
0	kWh		
Data quality			
Metered data			
Data quality narrative:			
Energy data was collected from monthly San Diego Gas and Electric bills based on electric meter readings.			
Narrative:			
Energy consumption data is for retail potable deliveries treatment, storage, and conveyance systems.			

Section 7

Water Supply Reliability

Currently, the District is wholly reliant on imported water sources that are delivered through both the Water Authority's and MWD's facilities but purchased through the Water Authority. Therefore, the water supply reliability assessment in this chapter is based upon the Water Authority assessment from its 2020 UWMP (www.sdcwa.org/uwmp). The District investigated several water resources projects that would reduce dependence on the Water Authority, as described in Section 6. The planned Imported Water Return Flow Reclamation Project is included in this reliability assessment from 2030 onward. The water recycling project was determined infeasible, although should direct potable reuse regulations come to fruition a future project could be developed.

7.1 Constraints on Water Sources

The supply from the Water Authority is very consistent in quantity and quality and has sufficient capacity to meet peak demands without any delivery constraints. The District meets or exceeds all state and federal water quality standards for drinking water. The District does not anticipate any shortage or impact to availability of supply. The Water Authority's Regional UWMP Section 7 provides additional information on supply reliability.

7.2 Reliability by Type of Year

Historically, the Water Authority supply has been very reliable with only occasional supply reductions during droughts in California or the Colorado River Watershed. Table 7-1 shows the basis of water year data. This data is based on the Water Authority's 2020 UWMP, where 2015 was selected as the representative single-dry year and 2011-2015 as the multiple dry-years based upon historical drought conditions. In the table, the volume available reflects the volume supplied by the Water Authority to the District for the given year.

Year Type	Base Year	Volume Available, AF	% of Average Supply
Average Year	2013	22,104	100%
Single-Dry Year	2015	20,062	91%
Multiple-Dry Years 1st Year	2011	18,495	84%
Multiple-Dry Years 2nd Year	2012	20,819	94%
Multiple-Dry Years 3rd Year	2013	22,104	100%
Multiple-Dry Years 4th Year	2014	23,217	105%
Multiple-Dry Years 5th Year	2015	20,062	91%

Volumes based on potable deliveries supplied by the Water Authority to the District.

7.3 Supply and Demand Assessment

The following section describes the District's normal year, single dry year, and multiple dry year supply and demand assessment.

7.3.1 Normal Year Supply and Demand Assessment

If the Water Authority's and the District's supplies are developed as planned, no shortages are anticipated within the District's service area in a normal year through 2045. As part of the preparation of its UWMP, the Water Authority identified the water demands for all of its retailers. The Water Authority determined that it has adequate water supplies to cover the demands for all of its retailers, including the District, for a normal year. Table 7-2 provides normal year supply and demand comparisons. Beginning in 2030, the supply totals include the planned local supply project, Imported Water Return Flow Reclamation.

Table 7-2. Normal Year Supply and Demand Comparison					
	2025	2030	2035	2040	2045
Supply totals (AF)	13,750	15,200	14,672	14,165	13,679
Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
Deficit (AF)	0	0	0	0	0
% of Demands	0%	0%	0%	0%	0%

7.3.2 Dry Year Supply and Demand Assessments

Similar to the normal year, if the Water Authority and the District's supplies are developed as planned, no shortages are anticipated within the District's service area for a single dry-year or multiple dry-years. The Water Authority determined that it has adequate water supplies to cover the demands for all of its retailers, including the District, for the single dry-year and multiple dry-year scenarios. Additional shortages are handled through the use of the Water Authority's carryover storage and management actions such that there are no shortages to member agencies for the single and multiple dry-year scenarios. The Water Authority's dry-year supplies are described in further detail in Section 9.4 of its UWMP.

Dry year demands are assumed equal to normal year demands, where the net of dry-year water use increases and dry-year water conservation result in no overall change. The Water Authority supply to the District will equate to demand, less local supplies. As such, the single dry year supply and demand comparison in Table 7-3 and the multiple dry year comparison in Table 7-4 show no shortage of supply.

Table 7-3. Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply totals (AF)	13,750	13,200	12,672	12,165	11,679
Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
Deficit (AF)	0	0	0	0	0
% of Demands	0%	0%	0%	0%	0%

(1) Per the Water Authority Draft 2020 Regional UWMP, Section 9.4, no single dry-year event supply shortages are anticipated within the Water Authority service area through 2045.

(2) Demands assumed equal to normal year demands, with net of dry-year increase and dry-year conservation resulting in no overall change.

Table 7-4. Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply totals (AF)	13,750	13,200	12,672	12,165	11,679
	Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
	Deficit (AF)	0	0	0	0	0
	% of Demands	0%	0%	0%	0%	0%
Second Year	Supply totals (AF)	13,750	13,200	12,672	12,165	11,679
	Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
	Deficit (AF)	0	0	0	0	0
	% of Demands	0%	0%	0%	0%	0%
Third Year	Supply totals (AF)	13,750	13,200	12,672	12,165	11,679
	Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
	Deficit (AF)	0	0	0	0	0
	% of Demands	0%	0%	0%	0%	0%
Fourth Year	Supply totals (AF)	13,750	13,200	12,672	12,165	11,679
	Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
	Deficit (AF)	0	0	0	0	0
	% of Demands	0%	0%	0%	0%	0%
Fifth Year	Supply totals (AF)	13,750	13,200	12,672	12,165	11,679
	Demand totals (AF)	13,750	13,200	12,672	12,165	11,679
	Deficit (AF)	0	0	0	0	0
	% of Demands	0%	0%	0%	0%	0%

Notes:

(1) Per the Water Authority Draft 2020 Regional UWMP, the Water Authority anticipates meeting the District's demands in multiple dry-years.

(2) Demands assumed equal to normal year demands, with net of dry-year increase and dry-year conservation resulting in no overall change.

7.4 Regional Supply Reliability

The Water Authority and its member agencies are considering many options to maximize the use of local water resources and minimize the need to import water from other regions including groundwater, water recycling, potable reuse, and seawater desalination. The County of San Diego has limited local surface water and groundwater resources, and these are currently being managed to the fullest yield possible. In addition to the multiple dry year scenarios noted above, the Water Authority goes through a traditional scenario planning process to assess potential supply and demand management risks (Section 10 of the Water Authority Draft UWMP, March 2021).

7.5 Drought Risk Assessment

Table 7-5 presents the five-year Drought Risk Assessment (DRA), which is a total water supply and use comparison. It is based on the scenario that the next five years are five-consecutive-year drought years. It calculates the potential supply surplus or shortages, and it allows the District to include shortfall mitigation from WSCP demand reduction measures and supply augmentation, as necessary.

Table 7-5. Five-Year DRA		
2021	Total	Notes
Gross Water Use	14,198	Interpolation of demand projections between 2020 and 2025
Total Supplies	18,495	Based on lowest year of supply, 2011 (Table 7-1)
Surplus/Shortfall without WSCP Action	4,297	Surplus
Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	-	Not required due to surplus.
WSCP - use reduction savings benefit	-	Not required due to surplus.
Revised Surplus/(shortfall)	-	Not required due to surplus.
Resulting % Use Reduction from WSCP action	-	Not required due to surplus.
2022	Total	Notes
Gross Water Use [Use Worksheet]	14,086	Interpolation of demand projections between 2020 and 2025
Total Supplies [Supply Worksheet]	18,495	Based on lowest year of supply, 2011 (Table 7-1)
Surplus/Shortfall without WSCP Action	4,409	Surplus
Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	-	Not required due to surplus.
WSCP - use reduction savings benefit	-	Not required due to surplus.
Revised Surplus/(shortfall)	-	Not required due to surplus.
Resulting % Use Reduction from WSCP action	-	Not required due to surplus.
2023	Total	Notes
Gross Water Use [Use Worksheet]	13,974	Interpolation of demand projections between 2020 and 2025
Total Supplies [Supply Worksheet]	18,495	Based on lowest year of supply, 2011 (Table 7-1)
Surplus/Shortfall without WSCP Action	4,521	Surplus
Planned WSCP Actions (use reduction and supply augmentation)		

Table 7-5. Five-Year DRA

2024	Total	Notes
WSCP - supply augmentation benefit	-	Not required due to surplus.
WSCP - use reduction savings benefit	-	Not required due to surplus.
Revised Surplus/(shortfall)	-	Not required due to surplus.
Resulting % Use Reduction from WSCP action	-	Not required due to surplus.
2024	Total	Notes
Gross Water Use [Use Worksheet]	13,862	Interpolation of demands between 2020 and 2025
Total Supplies [Supply Worksheet]	18,495	Based on lowest year of supply, 2011 (Table 7-1)
Surplus/Shortfall without WSCP Action	4,633	Surplus
Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	-	Not required due to surplus.
WSCP - use reduction savings benefit	-	Not required due to surplus.
Revised Surplus/(shortfall)	-	Not required due to surplus.
Resulting % Use Reduction from WSCP action	-	Not required due to surplus.
2025	Total	Notes
Gross Water Use [Use Worksheet]	13,750	Interpolation of demands between 2020 and 2025
Total Supplies [Supply Worksheet]	18,495	Based on lowest year of supply (Table 7-1)
Surplus/Shortfall without WSCP Action	4,745	Surplus
Planned WSCP Actions (use reduction and supply augmentation)		
WSCP - supply augmentation benefit	-	Not required due to surplus.
WSCP - use reduction savings benefit	-	Not required due to surplus.
Revised Surplus/(shortfall)	-	Not required due to surplus.
Resulting % Use Reduction from WSCP action	-	Not required due to surplus.

The basis of the key inputs in the DRA water supply and use comparison are described below. In all DRA years the District has a surplus of supplies.

Gross water use – The District’s projected water use from 2021-25. The gross water use does not include water use reduction as a result of the implementation of any necessary demand reduction actions by WSCP stage, as described in the WSCP in Appendix D.

Total supplies – The supplies presented reflect the worst-case scenario. 2011 was the lowest year of supply, as identified in Table 7-1, so the volume of this supply was assumed for this scenario.

Surplus/shortfall without WSCP Action – Total supplies minus gross water use prior to any demand reduction or supply augmentation actions from the WSCP.

WSCP–supply augmentation benefit – Sum of estimated supply augmentation benefits for the associated water shortage stage.

WSCP–use reduction savings benefit – Sum of estimated water savings from demand reduction actions for the associated water shortage stage.

Revised Surplus/(shortfall) – Total supplies after accounting for supply augmentation benefits and demand reduction actions for the associated water shortage stage.

Resulting percent Use Reduction from WSCP action – WSCP–use reduction savings benefit divided by Gross Water Use.

Section 8

Water Shortage Contingency Planning

The District's WSCP and the associated required DWR tables are presented as a separate document in Appendix D. It will be considered for Board adoption on May 25, 2021.

Section 9

Demand Management Measures

Water conservation is an available method to reduce water demands, thereby reducing water supply needs. This section presents a description of the District's water conservation program and water DMMs.

9.1 Conservation Program Implementation

Water conservation DMMs and the District's compliance status are described in the following sections.

9.1.1 Water Waste Prevention Ordinances

Ordinance 16-10 declares the prevention of water waste, unreasonable water use, or unreasonable method of water use. It also declares that water be conserved for the public welfare. It will be revised to align with the demand reduction actions outlined in the 2020 WSCP, which declare specific demand reduction and conservation measures for pre-defined water shortage stages. Refer to the WSCP in Appendix D for additional information.

DMM Status. The implementation of this DMM is ongoing. The District will continue to enforce this regulation. In some cases, fines may be issued.

9.1.2 Metering

The District is fully metered. Customer service staff utilize database software to identify water reading spikes. Meter reading staff respond to unusual conditions by either visiting the site or meter where spikes are occurring, notifying the customer, and/or making appropriate repairs.

DMM Status. This DMM is on track.

9.1.3 Conservation Pricing

Ordinance 19-04 contains all information regarding water and wastewater service charges for the District. The District's rate structure incentivizes water conservation by using a tiered rate structure where the variable rate portion of the water rates are at a higher rate for the use of larger volumes of water.

The District's water rates are structured to proportionately allocate the cost of providing water service among customer classes and each service area. The rate structure is comprised of four components:

1. District operation and maintenance fixed charges
2. Water Authority fixed charge
3. Variable rate
4. Pumping charge

The rate structure for residential (single and multi-family) and non-residential customers has three tiers based on water use.

DMM Status. The implementation of this DMM is ongoing.

9.1.4 Public Education and Outreach

The District prepares monthly newsletters and posts them to the District website for public viewing. The District's website also includes conservation information on their water use efficiency management page (<https://www.rainbowmwd.com/water-use-efficiency-management>).

The Water Authority and MWD collaborate with the District to operate public outreach campaigns and school education programs, which extend to the District's service area. The public outreach campaigns and school programs focus on water education and conservation practices.

DMM Status. The District's newsletter program is ongoing. The Water Authority will continue to provide public education and outreach campaigns to the District's service area.

9.1.5 Programs to Assess and Manage Distribution System Real Loss

The District's progress to assess and manage the system's real losses consists of ongoing leak detection and repair within the system, focused on the high-probability leak areas. The District conducts water audits and leak detection and repair on an ongoing basis. The District conducted a water loss audit (Appendix B) for each year since the last UWMP, from 2016 – 2020.

DMM Status. The District is in compliance with this DMM. This DMM is currently being implemented and will continue to be implemented as part of the District's ongoing operations and maintenance program.

9.1.6 Water Conservation Program Coordination and Staffing Support

The District's Customer Service and Communications Supervisor coordinates water conservation practices and programs and establishes an annual program budget based on available funding and resources. The District also hires part-time staff as needed to aid in water conservation program implementation activities.

The contact information for water conservation coordination is:

- Cynthia Gray
- Customer Service and Communications Supervisor
Phone number: (760) 728-1178 ext. 101
Email: Cgray@rainbowmwd.com

DMM Status. The implementation of this DMM is ongoing.

9.1.7 Other Demand Management Measures

The Water Authority offers various programs to its retailers' service areas. Customers in the District's service area can take part in the following conservation and rebate programs:

- Plumbing retrofits, such as low-flow showerhead distribution
- Residential leak monitoring system from Flume
- Residential weather-based irrigation controller program
- Residential landscape survey program
- High-efficiency washing machine rebates
- Vouchers for WaterSense toilets
- Commercial, industrial, institutional (CII) voucher program

DMM Status. The implementation of these DMMs is ongoing.

Section 10

Plan Adoption, Submittal, Implementation

This section contains information required by the Act to document compliance with plan adoption, submittal, and implementation requirements.

10.1 Notice of Public Hearing

On March 25, 2021, the District provided emailed notification letters to the county and city within its service area and to other water utilities with which the District coordinates. The notification letters inform the recipients that the UWMP and WSCP are being updated and prepared, and the public hearings will be held for the UWMP and WSCP in 60 days or more from the notification date. Notified entities are listed in Table 10-1.

Entity	60 Day Notice of Preparation	Notice of Public Hearing
San Diego County	X	X
The Water Authority	X	X
Fallbrook Public Utility District	X	X
City of Oceanside	X	X

In addition, the District will provide legal public notice of the May 25, 2021 public hearings and regularly scheduled Board meeting via advertisement in the Daily Journal newspaper beginning two weeks prior to the hearings. The notice will indicate the time and place of the hearings as well as the location where the plans are available for public inspection. Copies of the notices are included in Appendix E.

10.2 Public Hearing and Adoption

The District will hold public hearings to receive comments on the Draft 2020 UWMP and Draft 2020 WSCP. The hearings will be held on May 25, 2021 at 1 pm. On the same day following the hearings, the District's Board of Directors will consider the adoption of the 2020 UWMP and 2020 WSCP. Copies of the adoption resolutions will be included in Appendix F.

10.3 Plan Submittal

The District 2020 UWMP and WSCP will be submitted to DWR on June 29, 2021, in advance of the July 1 due date. The plans and associated data files will be submitted using the DWR Water Use Efficiency data online plan submittal tool. Copies of the plans will also be submitted to the County of

San Diego, the City of Oceanside, and to the California State Library Government Publications Section within 30 days of plan adoption.

10.4 Public Availability

The adopted 2020 UWMP and WSCP will be available for public review at <http://www.rainbowmwd.com/> no later than 30 days after filing a copy of the UWMP and WSCP with DWR.

Section 11

References

- Atkins. Rainbow Municipal Water District Water and Wastewater Master Plan Update. March 2016.
- Bureau of Labor Statistics (BLS) via DataUSA. February 2021. <https://datausa.io/profile/geo>
- Department of Water Resources (DWR). 2020 Urban Water Management Plans Guidebook for Urban Water Suppliers. April 2021.
- Metropolitan Water District of Southern California. Draft 2020 Urban Water Management Plan. February 2021.
- Rainbow Municipal Water District (District). 2015 Urban Water Management Plan. 2016.
- Regional Water Management Group and Regional Advisory Committee. San Diego Integrated Regional Water Management Plan. May 2019. <https://sdirwmp.org/2019-irwm-plan-update>
- San Diego Association of Governments (SANDAG). 2050 Regional Growth Forecast. 2020.
- SANDAG. 6th Cycle Regional Housing Needs Assessment Plan. July 2020.
- San Diego County. San Diego County General Plan. August 2011.
- San Diego County Office of Emergency Services and Unified Disaster Council. Multi-Jurisdictional Hazard Mitigation Plan. October 2017.
- San Diego County Water Authority (The Water Authority). Draft 2020 Urban Water Management Plan. March 2021.
- The Water Authority 2013 Water Facilities Master Plan, Appendix E: "Analysis of Potential Climate Effects on Water Authority Demands."

Appendix A: DWR UWMP Checklist

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	1
Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	1.6
Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	1
Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	2.4
Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	10
Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	2.4
Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	N/A
Section 3.1	10631(a)	Describe the water supplier service area.	System Description	3.1
Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	3.4
Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	3.5
Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	3.6
Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	3.4
Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	3.7
Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	4.1 and 4.2
Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	4.3
Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	4.2
Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	4.2
Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	4.3
Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the	System Water Use	4.5

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk	System Water Use	4.2 and 7.5
Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references	Baselines and Targets	5.2
Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	5.2
Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	N/A
Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	N/A
Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below	Baselines and Targets	N/A
Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Appendix C
Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	7
Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, <i>including changes in supply due to climate change.</i>	System Supplies	7
Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	6.1 and 6.2
Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	6.3
Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	6.4
Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	6.2.1, 6.3.2, and 6.4
Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	6.3.2
Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	6.2.1 and 6.3.2
Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	N/A

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	6.2.1
Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	6.2.1
Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	6.3.2
Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term	System Supplies	6.2.6
Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	6.2.4
Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	6.2.4
Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	6.2.4 and 6.3.1
Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	6.2.4 and 6.4
Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	6.2.4
Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	6.2.4
Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	6.2.5
Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	6.2.4.1
Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	6.4 and 6.5
Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily	System Suppliers, Energy Intensity	6.6
Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	7.1
Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	7.4

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	7.3
Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	7.5
Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5	Water Supply Reliability Assessment	7.5
Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	7.3 and 7.5
Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	7.5
Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	7.3
Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix D
Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix D, Section 2
Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix D, Section 11
Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix D, Section 3
Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix D, Section 3
Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix D, Section 4
Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix D, Section 4. Existing WSCP revised to new shortage levels.
Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation	Water Shortage Contingency Planning	Appendix D, Section 5.2 and Table 5-2
Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix D, Section 5.1 and Table 5-1

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix D, Section 5.2 and Table 5-2
Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix D, Section Table 5-1
Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Plan	Appendix D, Section Table 5-1 and Table 5-3
Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix D, Section 6.1 and WSCP Appendix A
Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix D, Section 7
Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix D, Section 7
Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix D, Section 8.1 and 8.2
Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix D, Section 9
Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix D, Section 9
Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix D, Section 9
Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix D, Section 10.1
Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix D, Section 10.2
Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix D, Section 10.3
Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix D, Section 11
Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix D, Section 5.1.1

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	10.3
Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Appendix D, Section 12.2
Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	N/A
Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	9
Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	10.1 and 10.2
Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	10.1
Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	10.3
Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Appendix E
Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	10.2
Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Appendix F
Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	10.3
Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	10.3
Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Appendix F
Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	10.4

2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Section Number)
Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	10.4
Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	N/A
Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	N/A

Appendix B: AWWA Water Loss Audits

2020 Fiscal Year Water Loss Audit

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:

Email Address:

Telephone | Ext.:

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year: Financial Year

Start Date: Enter MM/YYYY numeric format

End Date: Enter MM/YYYY numeric format

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

- -
 -
- Value can be entered by user
 Value calculated based on input data
 These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

<p><u>Instructions</u></p> <p>The current sheet. Enter contact information and basic audit details (year, units etc)</p>	<p><u>Reporting Worksheet</u></p> <p>Enter the required data on this worksheet to calculate the water balance and data grading</p>	<p><u>Comments</u></p> <p>Enter comments to explain how values were calculated or to document data sources</p>	<p><u>Performance Indicators</u></p> <p>Review the performance indicators to evaluate the results of the audit</p>	<p><u>Water Balance</u></p> <p>The values entered in the Reporting Worksheet are used to populate the Water Balance</p>	<p><u>Dashboard</u></p> <p>A graphical summary of the water balance and Non-Revenue Water components</p>
<p><u>Grading Matrix</u></p> <p>Presents the possible grading options for each input component of the audit</p>	<p><u>Service Connection Diagram</u></p> <p>Diagrams depicting possible customer service connection line configurations</p>	<p><u>Definitions</u></p> <p>Use this sheet to understand the terms used in the audit process</p>	<p><u>Loss Control Planning</u></p> <p>Use this sheet to interpret the results of the audit validity score and performance indicators</p>	<p><u>Example Audits</u></p> <p>Reporting Worksheet and Performance Indicators examples are shown for two validated audits</p>	<p><u>Acknowledgements</u></p> <p>Acknowledgements for the AWWA Free Water Audit Software v5.0</p>

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

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? Click to access definition
+ Click to add a comment

Water Audit Report for: Rainbow Municipal Water District (CA3710016)
Reporting Year: 2020 / 7/2019 - 6/2020

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' -----

Volume from own sources:	+	?	n/a	0.000	acre-ft/yr		Pcnt:	Value:	
Water imported:	+	?	7	14,400.000	acre-ft/yr	+	?	0.21%	0
Water exported:	+	?	n/a	0.000	acre-ft/yr	+	?	0	0

WATER SUPPLIED: 14,369.823 acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	+	?	9	13,609.309	acre-ft/yr		Pcnt:	Value:	
Billed unmetered:	+	?	n/a		acre-ft/yr	+	?	0	0
Unbilled metered:	+	?	n/a		acre-ft/yr	+	?	0	0
Unbilled unmetered:	+	?	6	19.500	acre-ft/yr	+	?	0	0

AUTHORIZED CONSUMPTION: 13,628.809 acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt: 0 Value: 19.500 acre-ft/yr

Use buttons to select percentage of water supplied OR value

Pcnt: 0.25% Value: 0 acre-ft/yr

Pcnt: 3.90% Value: 10.000 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

741.014 acre-ft/yr

Apparent Losses

Unauthorized consumption: 35.925 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 552.303 acre-ft/yr
 Systematic data handling errors: 10.000 acre-ft/yr

Apparent Losses: 598.227 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 142.787 acre-ft/yr

WATER LOSSES: 741.014 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 760.514 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 335.0 miles
 Number of active AND inactive service connections: 8,592
 Service connection density: 26 conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 158.0 psi

COST DATA

Total annual cost of operating water system: \$40,434,571 \$/Year
 Customer retail unit cost (applied to Apparent Losses): \$5.67 \$/100 cubic feet (ccf)
 Variable production cost (applied to Real Losses): \$1,873.00 \$/acre-ft Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 79 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Unauthorized consumption

3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: Rainbow Municipal Water District (CA3710016)
 Reporting Year: 2020 | 7/2019 - 6/2020

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 79 out of 100 ***

System Attributes:

Apparent Losses:	598.227	acre-ft/yr
+	Real Losses:	142.787 acre-ft/yr
=	Water Losses:	741.014 acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 548.85 acre-ft/yr

Annual cost of Apparent Losses: \$1,477,533

Annual cost of Real Losses: \$267,440 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial: { Non-revenue water as percent by volume of Water Supplied: 5.3%
 Non-revenue water as percent by cost of operating system: 4.4% Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day: 62.16 gallons/connection/day
 Real Losses per service connection per day: N/A gallons/connection/day
 Real Losses per length of main per day*: 380.51 gallons/mile/day
 Real Losses per service connection per day per psi pressure: N/A gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 142.79 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 0.26

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
Volume from own sources:	100% imported water from SDCWA
Vol. from own sources: Master meter error adjustment:	
Water imported:	100% imported water from SDCWA
Water imported: master meter error adjustment:	
Water exported:	n/a
Water exported: master meter error adjustment:	
Billed metered:	
Billed unmetered:	
Unbilled metered:	

Audit Item	Comment
Unbilled unmetered:	Maintenance estimated use due to operational flushing, fire suppression and fire flow testing.
Unauthorized consumption:	The default is selected because we don't have any data to confirm or deny that our unauthorized consumption is any different then theoretical norms.
Customer metering inaccuracies:	In 2017, the District tested a statistically significant percentage of the Customer meters. This testing found an average meter inaccuracy of 6.4% District Wide. The District then kicked off a District Wide meter replacement project. Over 400 meters were replaced by June 2020. Meter replacement is ongoing.
Systematic data handling errors:	
Length of mains:	The Length of mains was calculated based on the District's GIS information. This information is continuously updated and validated by our District staff in the field through corrections sent to Nobel Systems for incorporation into the data set.
Number of active AND inactive service connections:	The GIS info is tied to the customer billing information. Field validation is accomplished when our meter crews pick up reads for our monthly billing.
Average length of customer service line:	
Average operating pressure:	Based on the model of our distribution system calibrated by fire hydrant flow test. This Average was calculated by taking the average pressure of the two nodes at the end of each pipe, multiplying that pressure by the length of pipe, summing the results and then dividing by the total length of pipes in the model. The model from which the pressure data was taken is a detailed model of the distribution system which has been calibrated using fire flow test data from fire hydrants around the district.
Total annual cost of operating water system:	
Customer retail unit cost (applied to Apparent Losses):	This number is calculated by the average cost per unit of all customer classes except Commercial and Single Family due to the fact that they represent less the 10 percent of our customer base.
Variable production cost (applied to Real Losses):	We calculate a melded rate by taking our total dollars sent to SDCWA (fixed and variable) and divide it by the total acre feet bought.

AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Water Audit Report for:	Rainbow Municipal Water District (CA3710016)	
Reporting Year:	2020	7/2019 - 6/2020
Data Validity Score:	79	

		Water Exported <i>0.000</i>	Billed Water Exported			Revenue Water 0.000
Own Sources (Adjusted for known errors) <i>0.000</i>	System Input 14,369.823	Water Supplied 14,369.823	Authorized Consumption 13,628.809	Billed Authorized Consumption 13,609.309	Billed Metered Consumption (water exported is removed) 13,609.309	Revenue Water 13,609.309
			Unbilled Authorized Consumption 19.500	Unbilled Metered Consumption 0.000	Unbilled Unmetered Consumption 19.500	Non-Revenue Water (NRW) 760.514
Water Imported 14,369.823			Water Losses 741.014	Apparent Losses 598.227	Unauthorized Consumption 35.925	
			Real Losses 142.787	Customer Metering Inaccuracies 552.303	Systematic Data Handling Errors 10.000	
				Leakage on Transmission and/or Distribution Mains <i>Not broken down</i>	Leakage and Overflows at Utility's Storage Tanks <i>Not broken down</i>	
				Leakage on Service Connections <i>Not broken down</i>		



AWWA Free Water Audit Software: Dashboard

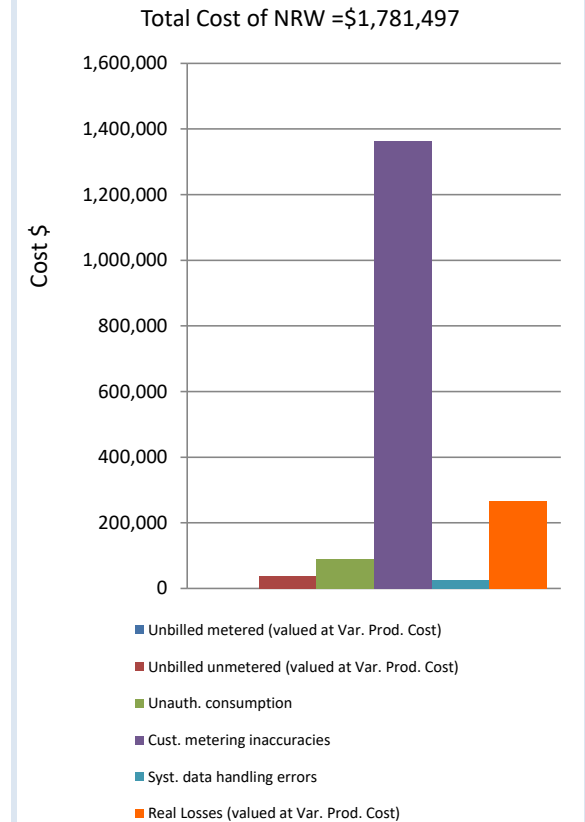
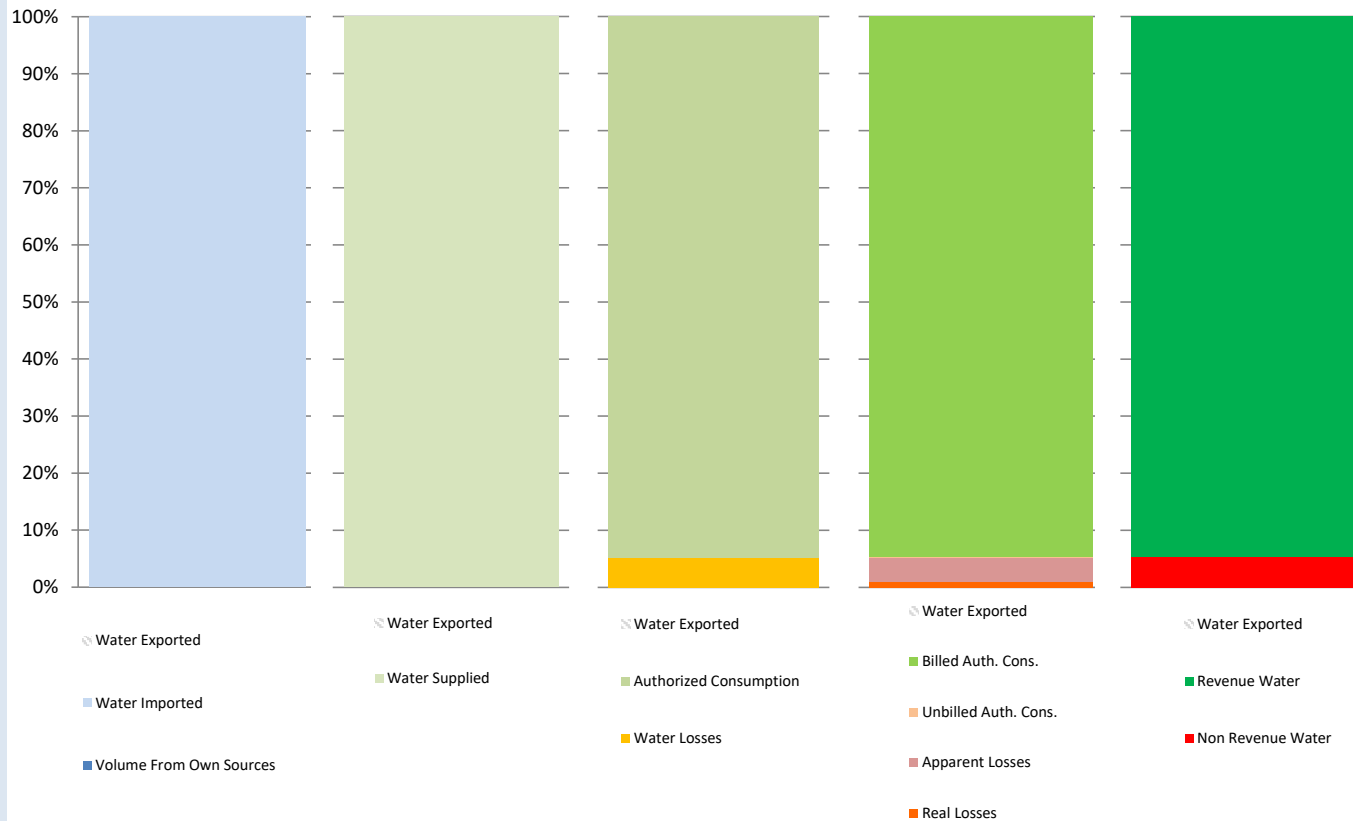
WAS v5.0

American Water Works Association.

The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

Water Audit Report for: **Rainbow Municipal Water District (CA3710016)**
 Reporting Year: **2020** **7/2019 - 6/2020**
 Data Validity Score: **79**

- Show me the VOLUME of Non-Revenue Water
- Show me the COST of Non-Revenue Water



2019 Fiscal Year Water Loss Audit

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:

Email Address:

Telephone | Ext.:

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year: Financial Year

Start Date: Enter MM/YYYY numeric format

End Date: Enter MM/YYYY numeric format

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

<p><u>Instructions</u></p> <p>The current sheet. Enter contact information and basic audit details (year, units etc)</p>	<p><u>Reporting Worksheet</u></p> <p>Enter the required data on this worksheet to calculate the water balance and data grading</p>	<p><u>Comments</u></p> <p>Enter comments to explain how values were calculated or to document data sources</p>	<p><u>Performance Indicators</u></p> <p>Review the performance indicators to evaluate the results of the audit</p>	<p><u>Water Balance</u></p> <p>The values entered in the Reporting Worksheet are used to populate the Water Balance</p>	<p><u>Dashboard</u></p> <p>A graphical summary of the water balance and Non-Revenue Water components</p>
<p><u>Grading Matrix</u></p> <p>Presents the possible grading options for each input component of the audit</p>	<p><u>Service Connection Diagram</u></p> <p>Diagrams depicting possible customer service connection line configurations</p>	<p><u>Definitions</u></p> <p>Use this sheet to understand the terms used in the audit process</p>	<p><u>Loss Control Planning</u></p> <p>Use this sheet to interpret the results of the audit validity score and performance indicators</p>	<p><u>Example Audits</u></p> <p>Reporting Worksheet and Performance Indicators examples are shown for two validated audits</p>	<p><u>Acknowledgements</u></p> <p>Acknowledgements for the AWWA Free Water Audit Software v5.0</p>

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

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Click to access definition
 Click to add a comment

Water Audit Report for: Rainbow Municipal Water District (CA3710016)
Reporting Year: 2018 / 7/2018 - 6/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

----- Enter grading in column 'E' and 'J' ----->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	acre-ft/yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="14,654.200"/>	acre-ft/yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	acre-ft/yr

		Pcnt:	<input type="text" value="0.25%"/>	Value:	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value="0.25%"/>	<input type="text" value=""/>	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	acre-ft/yr

WATER SUPPLIED: 14,617.656 acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="13,771.000"/>	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value=""/>	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value=""/>	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="4"/>	<input type="text" value="10.000"/>	acre-ft/yr

Click here: for help using option buttons below

Pcnt:	<input type="text" value=""/>	Value:	<input type="text" value="10.000"/>	acre-ft/yr
<input type="button" value="+"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="10.000"/>	acre-ft/yr

AUTHORIZED CONSUMPTION: 13,781.000 acre-ft/yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

836.656 acre-ft/yr

Apparent Losses

Unauthorized consumption: 36.544 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value="786.082"/>	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="10.000"/>	acre-ft/yr

Pcnt: Value:

Apparent Losses: 832.627 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 4.029 acre-ft/yr

WATER LOSSES: 836.656 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 846.656 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="323.0"/>	miles
Number of <u>active</u> AND <u>inactive</u> service connections:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="8,200"/>	
Service connection density:	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value="25"/>	conn./mile main	

Are customer meters typically located at the curbstop or property line?

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="\$36,000.000"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="\$3.85"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value="\$1,654.00"/>	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 78 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Water imported

2: Unauthorized consumption

3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: Rainbow Municipal Water District (CA3710016)
 Reporting Year: 2018 | 7/2018 - 6/2019

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 78 out of 100 ***

System Attributes:

	Apparent Losses:	832.627	acre-ft/yr
+	Real Losses:	4.029	acre-ft/yr
=	Water Losses:	836.656	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 526.95 acre-ft/yr

Annual cost of Apparent Losses: \$1,396,365

Annual cost of Real Losses: \$6,664 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	5.8%	
		Non-revenue water as percent by cost of operating system:	3.9%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	90.65	gallons/connection/day
		Real Losses per service connection per day:	N/A	gallons/connection/day
		Real Losses per length of main per day*:	11.14	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 4.03 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 0.01

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

WAS v5.0

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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
Volume from own sources:	100% imported water from SDCWA
Vol. from own sources: Master meter error adjustment:	Inaccuracy meter testing report pending fro SDWA for caluclating the percentage. 0.25 % entered as approximation.
Water imported:	100% imported water from SDCWA
Water imported: master meter error adjustment:	
Water exported:	n/a
Water exported: master meter error adjustment:	
Billed metered:	
Billed unmetered:	
Unbilled metered:	

Audit Item	Comment
Unbilled unmetered:	Maintenance estimated use due to operational flushing, fire suppression and fire flow testing.
Unauthorized consumption:	The default is selected because we don't have any data to confirm or deny that our unauthorized consumption is any different then theoretical norms.
Customer metering inaccuracies:	Significant meter replacement program results in lower Customer meter errors since last year.
Systematic data handling errors:	
Length of mains:	The Length of mains was calculated based on the District's GIS information. This information is continuously updated and validated by our District staff in the field through corrections sent to Nobel Systems for incorporation into the data set.
Number of active AND inactive service connections:	The GIS info is tied to the customer billing information. Field validation is accomplished when our meter crews pick up reads for our monthly billing.
Average length of customer service line:	
Average operating pressure:	Based on the model of our distribution system calibrated by fire hydrant flow test. This Average was calculated by taking the average pressure of the two nodes at the end of each pipe, multiplying that pressure by the length of pipe, summing the results and then dividing by the total length of pipes in the model. The model from which the pressure data was taken is a detailed model of the distribution system which has been calibrated using fire flow test data from fire hydrants around the district.
Total annual cost of operating water system:	
Customer retail unit cost (applied to Apparent Losses):	This number is calculated by the average cost per unit of all customer classes except Commercial and Single Family due to the fact that they represent less the 10 percent of our customer base.
Variable production cost (applied to Real Losses):	We calculate a melded rate by taking our total dollars sent to SDCWA (fixed and variable) and divide it by the total acre feet bought. Reviewed atleast anually by a third party.

AWWA Free Water Audit Software: Water Balance

WAS v5.0

American Water Works Association.
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Water Audit Report for:	Rainbow Municipal Water District (CA3710016)	
Reporting Year:	2018	7/2018 - 6/2019
Data Validity Score:	78	

		Water Exported <i>0.000</i>	Billed Water Exported			Revenue Water 0.000
Own Sources (Adjusted for known errors) <i>0.000</i>	System Input 14,617.656	Water Supplied 14,617.656	Authorized Consumption 13,781.000	Billed Authorized Consumption 13,771.000	Billed Metered Consumption (water exported is removed) 13,771.000	Revenue Water 13,771.000
				Unbilled Authorized Consumption 10.000	Billed Unmetered Consumption 0.000	Non-Revenue Water (NRW) 846.656
Water Imported 14,617.656	System Input 14,617.656	Water Supplied 14,617.656	Water Losses 836.656	Apparent Losses 832.627	Unbilled Metered Consumption 0.000	Non-Revenue Water (NRW) 846.656
				Real Losses 4.029	Unbilled Unmetered Consumption 10.000	
				Leakage on Transmission and/or Distribution Mains <i>Not broken down</i>	Unauthorized Consumption 36.544	
				Leakage and Overflows at Utility's Storage Tanks <i>Not broken down</i>	Customer Metering Inaccuracies 786.082	
					Systematic Data Handling Errors 10.000	
					Leakage on Service Connections <i>Not broken down</i>	



AWWA Free Water Audit Software: Dashboard

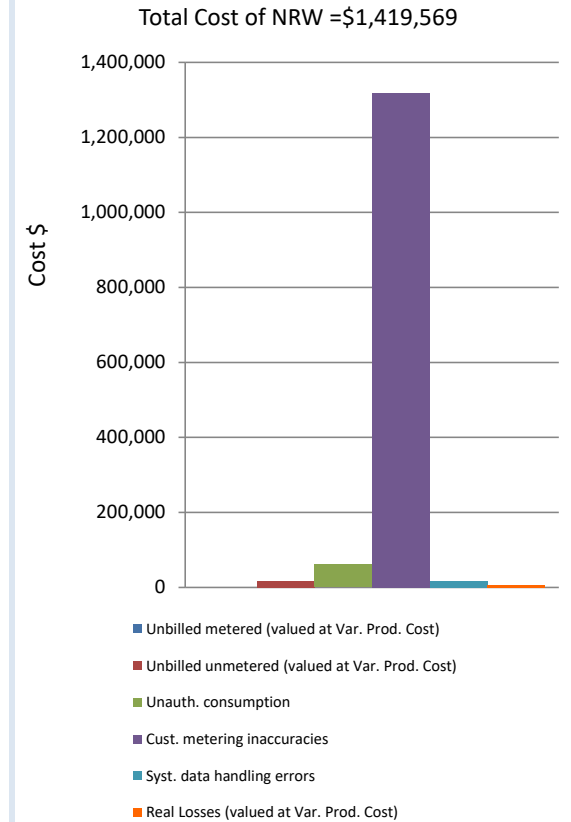
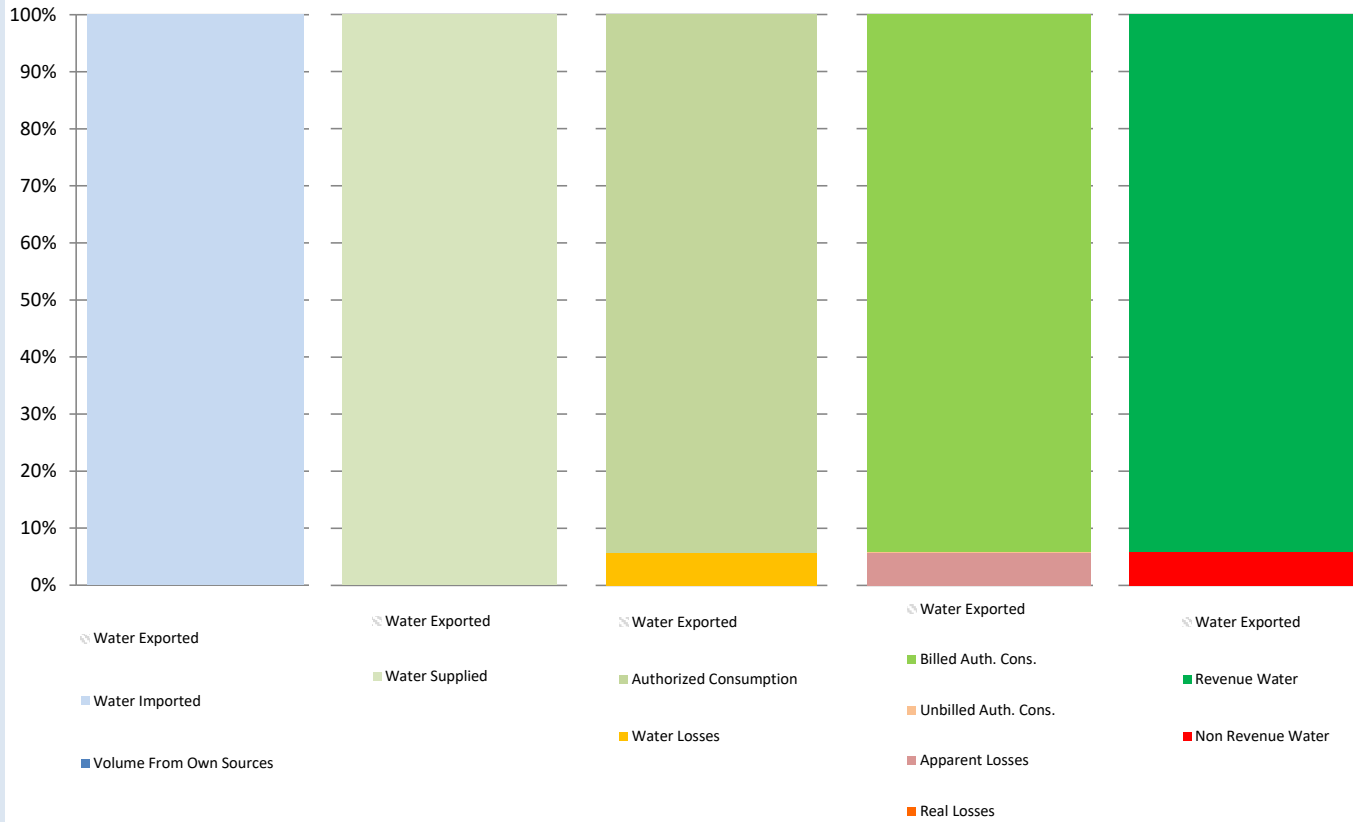
WAS v5.0

American Water Works Association.

The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

Water Audit Report for:	Rainbow Municipal Water District (CA3710016)	
Reporting Year:	2018	7/2018 - 6/2019
Data Validity Score:	78	

- Show me the VOLUME of Non-Revenue Water
- Show me the COST of Non-Revenue Water



2018 Fiscal Year Water Loss Audit

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:

Email Address:

Telephone | Ext.:

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year: Financial Year

Start Date: Enter MM/YYYY numeric format

End Date: Enter MM/YYYY numeric format

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

<p><u>Instructions</u></p> <p>The current sheet. Enter contact information and basic audit details (year, units etc)</p>	<p><u>Reporting Worksheet</u></p> <p>Enter the required data on this worksheet to calculate the water balance and data grading</p>	<p><u>Comments</u></p> <p>Enter comments to explain how values were calculated or to document data sources</p>	<p><u>Performance Indicators</u></p> <p>Review the performance indicators to evaluate the results of the audit</p>	<p><u>Water Balance</u></p> <p>The values entered in the Reporting Worksheet are used to populate the Water Balance</p>	<p><u>Dashboard</u></p> <p>A graphical summary of the water balance and Non-Revenue Water components</p>
<p><u>Grading Matrix</u></p> <p>Presents the possible grading options for each input component of the audit</p>	<p><u>Service Connection Diagram</u></p> <p>Diagrams depicting possible customer service connection line configurations</p>	<p><u>Definitions</u></p> <p>Use this sheet to understand the terms used in the audit process</p>	<p><u>Loss Control Planning</u></p> <p>Use this sheet to interpret the results of the audit validity score and performance indicators</p>	<p><u>Example Audits</u></p> <p>Reporting Worksheet and Performance Indicators examples are shown for two validated audits</p>	<p><u>Acknowledgements</u></p> <p>Acknowledgements for the AWWA Free Water Audit Software v5.0</p>

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

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American Water Works Association
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? Click to access definition
+ Click to add a comment

Water Audit Report for: Rainbow Municipal Water District (CA3710016)
Reporting Year: 2018 / 7/2017 - 6/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	acre-ft/yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="19,227.000"/>	acre-ft/yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	<input type="text" value=""/>	Value:	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value=""/>	acre-ft/yr
<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value=""/>	acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 19,227.000 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="17,917.000"/>	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value=""/>	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="n/a"/>	<input type="text" value=""/>	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="2"/>	<input type="text" value="10.000"/>	acre-ft/yr

AUTHORIZED CONSUMPTION: 17,927.000 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

1,300.000 acre-ft/yr

Apparent Losses

Unauthorized consumption:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="2"/>	<input type="text" value="15.000"/>	acre-ft/yr
Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value="1,225.094"/>	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="7"/>	<input type="text" value="10.000"/>	acre-ft/yr

Apparent Losses: 1,250.094 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 49.906 acre-ft/yr

WATER LOSSES: 1,300.000 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,310.000 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="322.0"/>	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="8,120"/>	
Service connection density:	<input type="button" value="?"/>	<input type="text" value=""/>	<input type="text" value="25"/>	<input type="text" value=""/>	conn./mile main

Are customer meters typically located at the curbside or property line?

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="10"/>	<input type="text" value="\$36,000.000"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="9"/>	<input type="text" value="\$3.49"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	<input type="text" value="8"/>	<input type="text" value="\$1,169.00"/>	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 75 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Water imported
- 2: Unauthorized consumption
- 3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: Rainbow Municipal Water District (CA3710016)
 Reporting Year: 2018 7/2017 - 6/2018

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 75 out of 100 ***

System Attributes:

	Apparent Losses:	1,250.094	acre-ft/yr
+	Real Losses:	49.906	acre-ft/yr
=	Water Losses:	1,300.000	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 523.87 acre-ft/yr

Annual cost of Apparent Losses: \$1,900,448

Annual cost of Real Losses: \$58,340 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	6.8%	
		Non-revenue water as percent by cost of operating system:	5.5%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	137.44	gallons/connection/day
		Real Losses per service connection per day:	N/A	gallons/connection/day
		Real Losses per length of main per day*:	138.36	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 49.91 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 0.10

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

WAS v5.0

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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
Volume from own sources:	100% imported water from SDCWA
Vol. from own sources: Master meter error adjustment:	N/A
Water imported:	100% imported water from SDCWA
Water imported: master meter error adjustment:	Calibrations being done but no meter accuracy testing.
Water exported:	N/A
Water exported: master meter error adjustment:	N/A
Billed metered:	
Billed unmetered:	
Unbilled metered:	

Audit Item	Comment
Unbilled unmetered:	Lacking robust mechanisms for recording. Currently looking into ways to increase data collection capabilities.
Unauthorized consumption:	Current financial software is inadequate upgrade expected late 2018
Customer metering inaccuracies:	6.40%
Systematic data handling errors:	10 acre-ft/yr
Length of mains:	322 miles
Number of active AND inactive service connections:	8120
Average length of customer service line:	
Average operating pressure:	Based on model of our distribution system calibrated by fire hydrant flow test
Total annual cost of operating water system:	Current financial software is inadequate upgrade expected late 2018
Customer retail unit cost (applied to Apparent Losses):	\$3.49
Variable production cost (applied to Real Losses):	\$1,169.00

AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Water Audit Report for:	Rainbow Municipal Water District (CA3710016)	
Reporting Year:	2018	7/2017 - 6/2018
Data Validity Score:	75	

		Water Exported <i>0.000</i>	Billed Water Exported			Revenue Water 0.000
			Authorized Consumption 17,927.000	Billed Authorized Consumption 17,917.000	Billed Metered Consumption (water exported is removed) 17,917.000	Revenue Water 17,917.000
			Unbilled Authorized Consumption 10.000	Unbilled Metered Consumption 0.000	Unbilled Unmetered Consumption 10.000	Non-Revenue Water (NRW) 1,310.000
			Apparent Losses 1,250.094	Unauthorized Consumption 15.000	Customer Metering Inaccuracies 1,225.094	
			Water Losses 1,300.000	Real Losses 49.906	Systematic Data Handling Errors 10.000	
					Leakage on Transmission and/or Distribution Mains <i>Not broken down</i>	
					Leakage and Overflows at Utility's Storage Tanks <i>Not broken down</i>	
					Leakage on Service Connections <i>Not broken down</i>	
Own Sources (Adjusted for known errors) 0.000	System Input 19,227.000	Water Supplied 19,227.000				
Water Imported 19,227.000						



AWWA Free Water Audit Software: Dashboard

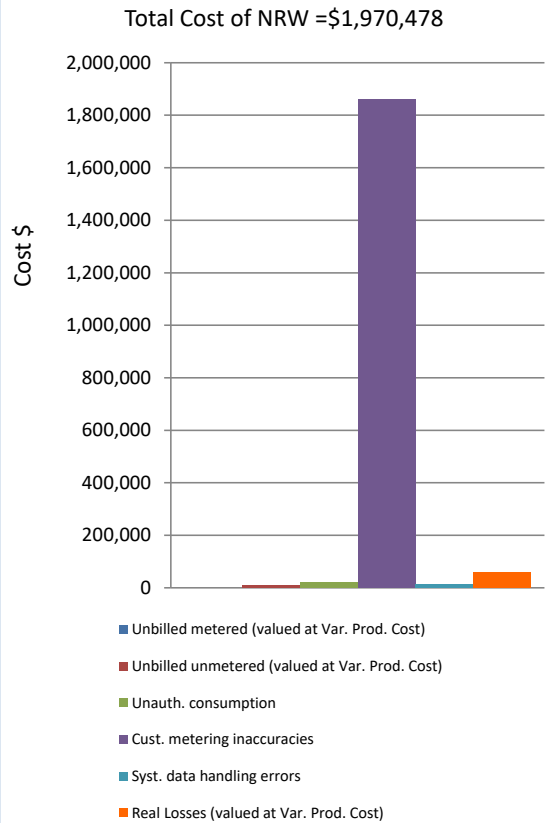
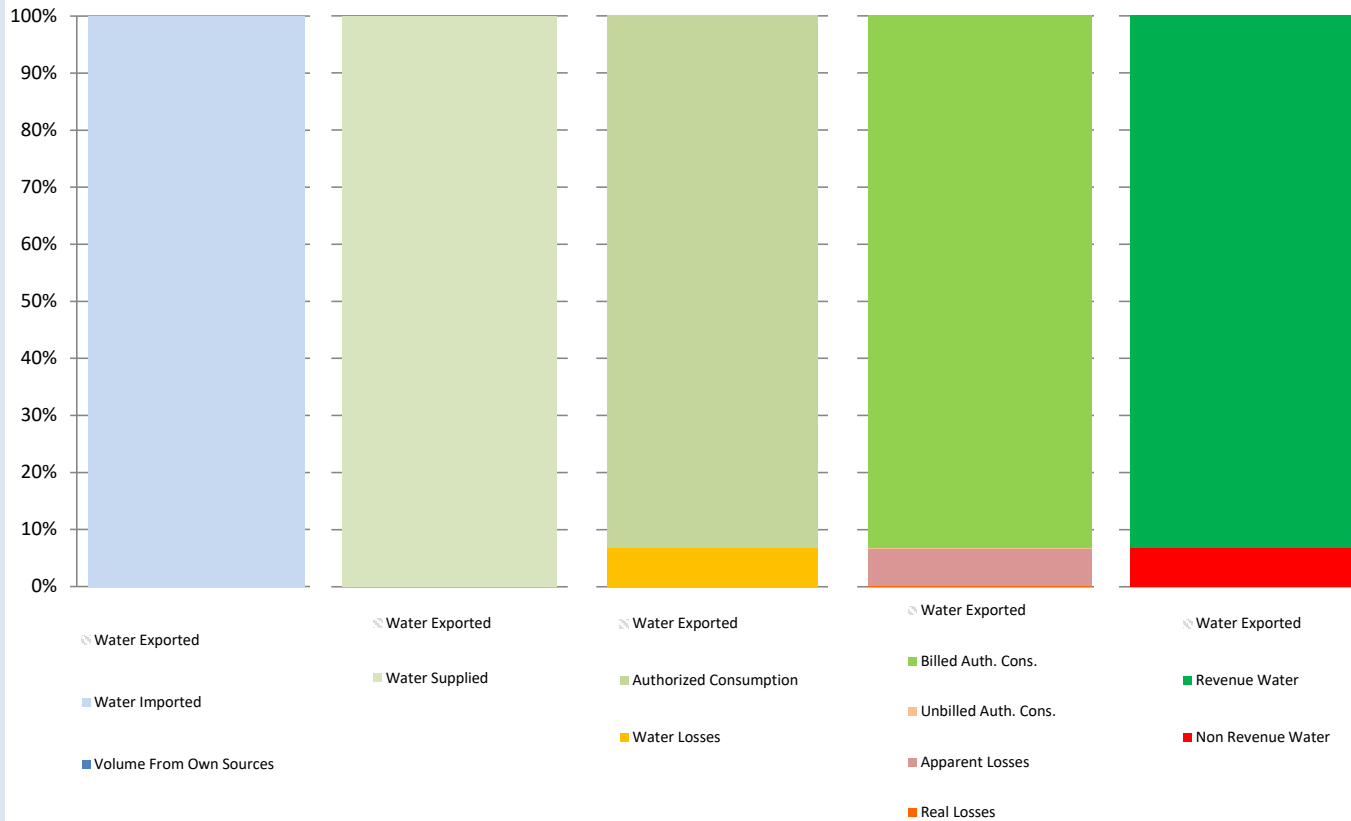
WAS v5.0

American Water Works Association.

The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

Water Audit Report for: **Rainbow Municipal Water District (CA3710016)**
 Reporting Year: **2018** **7/2017 - 6/2018**
 Data Validity Score: **75**

- Show me the VOLUME of Non-Revenue Water
- Show me the COST of Non-Revenue Water



2017 Fiscal Year Water Loss Audit

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:

Email Address:

Telephone | Ext.:

Name of City / Utility:

City/Town/Municipality:

State / Province:

Country:

Year: Financial Year

Start Date: Enter MM/YYYY numeric format

End Date: Enter MM/YYYY numeric format

Audit Preparation Date:

Volume Reporting Units:

PWSID / Other ID:

The following guidance will help you complete the Audit

All audit data are entered on the [Reporting Worksheet](#)

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

<p><u>Instructions</u></p> <p>The current sheet. Enter contact information and basic audit details (year, units etc)</p>	<p><u>Reporting Worksheet</u></p> <p>Enter the required data on this worksheet to calculate the water balance and data grading</p>	<p><u>Comments</u></p> <p>Enter comments to explain how values were calculated or to document data sources</p>	<p><u>Performance Indicators</u></p> <p>Review the performance indicators to evaluate the results of the audit</p>	<p><u>Water Balance</u></p> <p>The values entered in the Reporting Worksheet are used to populate the Water Balance</p>	<p><u>Dashboard</u></p> <p>A graphical summary of the water balance and Non-Revenue Water components</p>
<p><u>Grading Matrix</u></p> <p>Presents the possible grading options for each input component of the audit</p>	<p><u>Service Connection Diagram</u></p> <p>Diagrams depicting possible customer service connection line configurations</p>	<p><u>Definitions</u></p> <p>Use this sheet to understand the terms used in the audit process</p>	<p><u>Loss Control Planning</u></p> <p>Use this sheet to interpret the results of the audit validity score and performance indicators</p>	<p><u>Example Audits</u></p> <p>Reporting Worksheet and Performance Indicators examples are shown for two validated audits</p>	<p><u>Acknowledgements</u></p> <p>Acknowledgements for the AWWA Free Water Audit Software v5.0</p>

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org



AWWA Free Water Audit Software: Reporting Worksheet

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? Click to access definition
+ Click to add a comment

Water Audit Report for: Rainbow Municipal Water District
Reporting Year: 2017 7/2016 - 6/2017

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	+ ?	n/a	0.000	acre-ft/yr
Water imported:	+ ?	7	16,958.000	acre-ft/yr
Water exported:	+ ?	n/a	0.000	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:		
+ ?		<input type="radio"/>	<input type="radio"/>
+ ?	7	<input checked="" type="radio"/>	<input type="radio"/>
+ ?		<input type="radio"/>	<input type="radio"/>

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 16,958.000 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	7	15,370.000	acre-ft/yr
Billed unmetered:	+ ?	n/a		acre-ft/yr
Unbilled metered:	+ ?	n/a		acre-ft/yr
Unbilled unmetered:	+ ?	4	18.000	acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:		
		<input type="radio"/>	<input checked="" type="radio"/>
		<input type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>

Use buttons to select percentage of water supplied
OR
value

AUTHORIZED CONSUMPTION: 15,388.000 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

1,570.000 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? 42.395 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+ ?	3	808.947	acre-ft/yr
Systematic data handling errors:	+ ?	7	0.000	acre-ft/yr

Pcnt:	Value:		
0.25%		<input checked="" type="radio"/>	<input type="radio"/>
		<input type="radio"/>	<input type="radio"/>

5.00%		<input type="radio"/>	<input type="radio"/>
0.25%		<input type="radio"/>	<input type="radio"/>

Systematic data handling errors are likely, please enter a positive, non-zero value; otherwise grade = 1 (not displayed)

Apparent Losses: 851.342 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 718.658 acre-ft/yr

WATER LOSSES: 1,570.000 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 1,588.000 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	9	315.0	miles
Number of <u>active AND inactive</u> service connections:	+ ?	9	7,800	
Service connection density:	?		25	conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: + ?

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 3 158.0 psi

COST DATA

Total annual cost of operating water system:	+ ?	10	\$36,000,000	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	4	\$3.42	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	5	\$1,115.00	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 60 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Water imported
- 2: Customer metering inaccuracies
- 3: Systematic data handling errors



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: Rainbow Municipal Water District
 Reporting Year: 2017 | 7/2016 - 6/2017

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 60 out of 100 ***

System Attributes:

	Apparent Losses:	851.342	acre-ft/yr
+	Real Losses:	718.658	acre-ft/yr
=	Water Losses:	1,570.000	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 508.67 acre-ft/yr

Annual cost of Apparent Losses: \$1,268,289

Annual cost of Real Losses: \$801,303 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	9.4%	
		Non-revenue water as percent by cost of operating system:	5.8%	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	97.44	gallons/connection/day
		Real Losses per service connection per day:	N/A	gallons/connection/day
		Real Losses per length of main per day*:	2,036.75	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 718.66 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 1.41

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: User Comments

WAS v5.0

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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
Volume from own sources:	100% imported water from SDCWA
Vol. from own sources: Master meter error adjustment:	
Water imported:	
Water imported: master meter error adjustment:	
Water exported:	n/a
Water exported: master meter error adjustment:	
Billed metered:	
Billed unmetered:	
Unbilled metered:	

Audit Item	Comment
Unbilled unmetered:	
Unauthorized consumption:	Increase in construction in area
Customer metering inaccuracies:	
Systematic data handling errors:	
Length of mains:	
Number of active AND inactive service connections:	
Average length of customer service line:	
Average operating pressure:	Based on model of our distribution system calibrated by fire hydrant flow test
Total annual cost of operating water system:	New financial software is inadequate
Customer retail unit cost (applied to Apparent Losses):	
Variable production cost (applied to Real Losses):	



AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Water Audit Report for:	Rainbow Municipal Water District	
Reporting Year:	2017	7/2016 - 6/2017
Data Validity Score:	60	

		Water Exported <i>0.000</i>	Billed Water Exported				Revenue Water 0.000
Own Sources (Adjusted for known errors) <i>0.000</i>	System Input 16,958.000	Water Supplied 16,958.000	Authorized Consumption 15,388.000	Billed Authorized Consumption 15,370.000	Billed Metered Consumption (water exported is removed) 15,370.000	Revenue Water 15,370.000	
					Billed Unmetered Consumption <i>0.000</i>		
Water Imported 16,958.000	System Input 16,958.000	Water Supplied 16,958.000	Water Losses 1,570.000	Unbilled Authorized Consumption 18.000	Unbilled Metered Consumption <i>0.000</i>	Non-Revenue Water (NRW) 1,588.000	
					Unbilled Unmetered Consumption 18.000		
				Apparent Losses 851.342	Unauthorized Consumption 42.395		
					Customer Metering Inaccuracies 808.947		
					Systematic Data Handling Errors <i>0.000</i>		
			Real Losses 718.658		Leakage on Transmission and/or Distribution Mains Not broken down		
					Leakage and Overflows at Utility's Storage Tanks Not broken down		
					Leakage on Service Connections Not broken down		



AWWA Free Water Audit Software: Dashboard

WAS v5.0

American Water Works Association.

The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

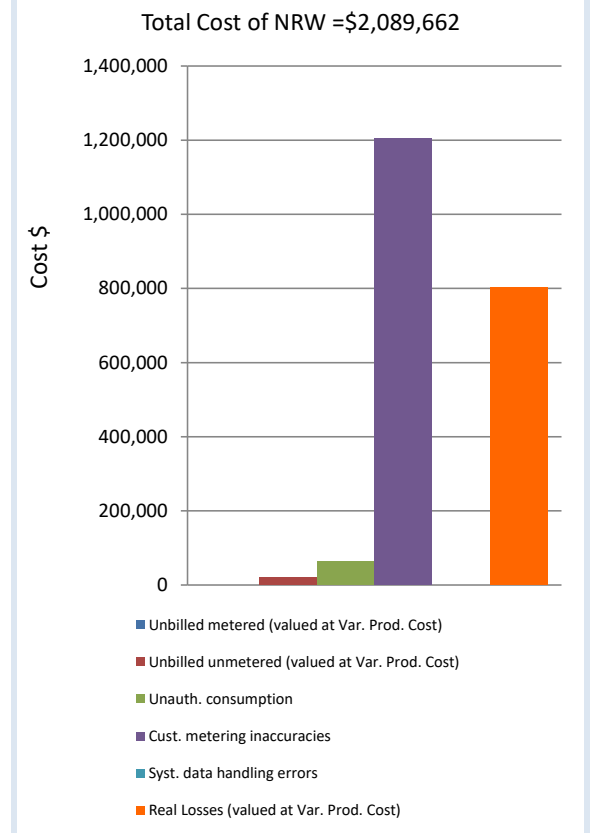
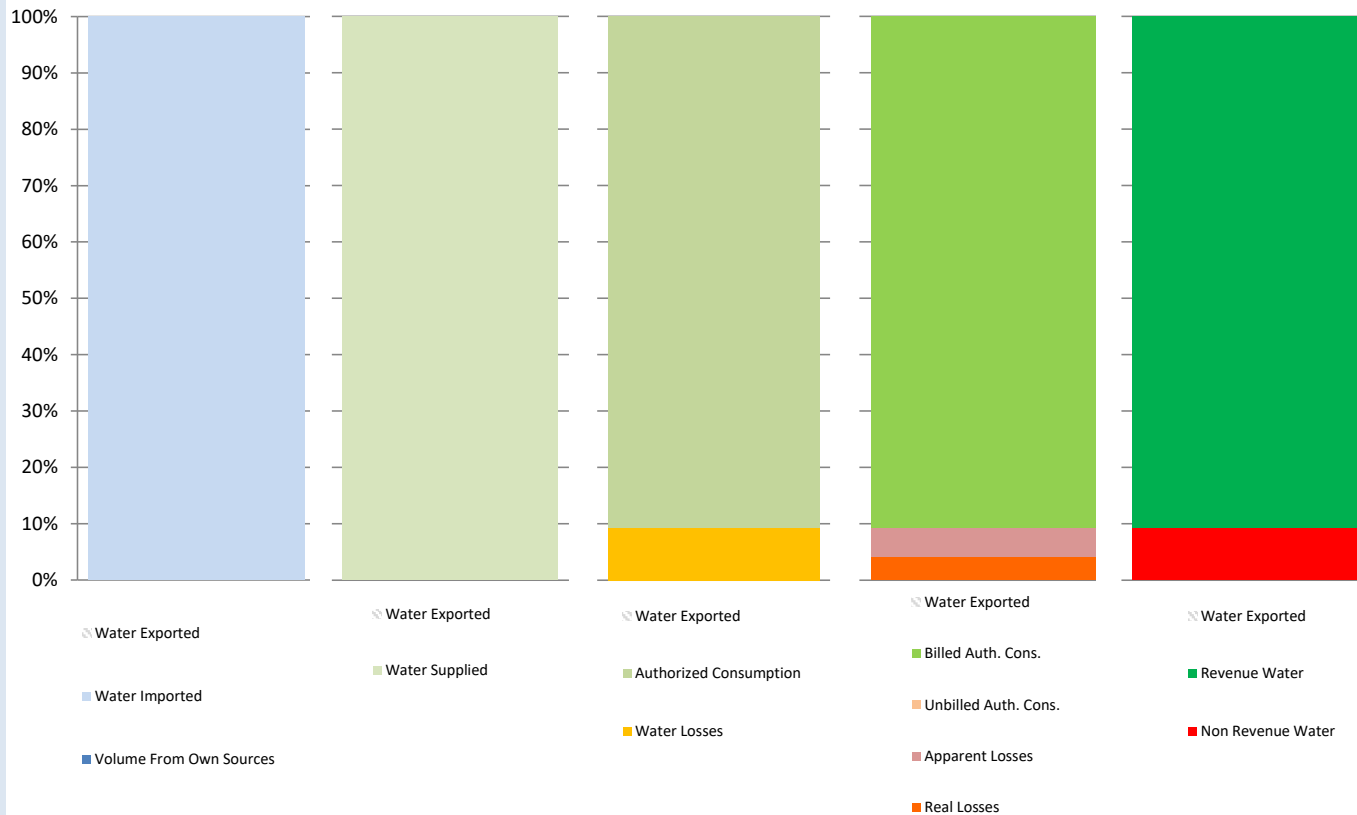
Water Audit Report for: **Rainbow Municipal Water District**

Reporting Year: **2017** **7/2016 - 6/2017**

Data Validity Score: **60**

Show me the VOLUME of Non-Revenue Water

Show me the COST of Non-Revenue Water



2015 Calendar Year Water Loss Audit



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
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?	Click to access definition
+	Click to add a comment

Water Audit Report for: **Rainbow Municipal Water District**
 Reporting Year: **2015** **1/2015 - 12/2015**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	+	?	n/a		acre-ft/yr
Water imported:	+	?	10	17,867.800	acre-ft/yr
Water exported:	+	?	n/a		acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	Value:
+	?	9
0.50%		

WATER SUPPLIED: **17,778.905** acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered:	+	?	7	16,402.810	acre-ft/yr
Billed unmetered:	+	?			acre-ft/yr
Unbilled metered:	+	?	4	1.000	acre-ft/yr
Unbilled unmetered:	+	?		222.236	acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: **16,626.046** acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:
1.25%	

Use buttons to select percentage of water supplied
OR
value

Pcnt:	Value:
0.25%	

5.00%	
0.25%	

WATER LOSSES (Water Supplied - Authorized Consumption)

1,152.859 acre-ft/yr

Apparent Losses

Unauthorized consumption:	+	?		44.447	acre-ft/yr
---------------------------	---	---	--	--------	------------

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+	?	6	863.358	acre-ft/yr
Systematic data handling errors:	+	?		41.007	acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **948.813** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **204.046** acre-ft/yr

WATER LOSSES: **1,152.859** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **1,376.095** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	7	315.0	miles
Number of <u>active</u> AND <u>inactive</u> service connections:	+	?	9	7,839	
Service connection density:	?			25	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: + ?

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	+	?	3	175.0	psi
-----------------------------	---	---	---	-------	-----

COST DATA

Total annual cost of operating water system:	+	?	9	\$38,367,342	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	10	\$3.41	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	10	\$1,450.00	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 81 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Unbilled metered
- 2: Billed metered
- 3: Customer metering inaccuracies



AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: Rainbow Municipal Water District

Reporting Year: 2015 1/2015 - 12/2015

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 81 out of 100 ***

System Attributes:

	Apparent Losses:	948.813	acre-ft/yr
+	Real Losses:	204.046	acre-ft/yr
=	Water Losses:	1,152.859	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 564.55 acre-ft/yr

Annual cost of Apparent Losses: \$1,409,363

Annual cost of Real Losses: \$303,090 Valued at **Customer Retail Unit Cost**
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	7.7%	
		Non-revenue water as percent by cost of operating system:	5.3%	Real Losses valued at Customer Retail Unit Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	108.06	gallons/connection/day
		Real Losses per service connection per day:	N/A	gallons/connection/day
		Real Losses per length of main per day*:	578.29	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 204.05 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 0.36

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



AWWA Free Water Audit Software: Water Balance

WAS v5.0

American Water Works Association.

Water Audit Report for:	Rainbow Municipal Water District	
Reporting Year:	2015	1/2015 - 12/2015
Data Validity Score:	81	

		Water Exported <i>0.000</i>	Billed Water Exported				Revenue Water 0.000
Own Sources (Adjusted for known errors)	System Input	Water Supplied	Authorized Consumption 16,626.046	Billed Authorized Consumption	Billed Metered Consumption (water exported is removed)	Revenue Water 16,402.810	
				16,402.810	16,402.810		
0.000	17,778.905	17,778.905	Water Losses	Unbilled Authorized Consumption	Billed Unmetered Consumption	Non-Revenue Water (NRW)	
				1,152.859	223.236		0.000
Water Imported			Real Losses	Apparent Losses	Unbilled Metered Consumption	Leakage on Transmission and/or Distribution Mains <i>Not broken down</i>	
17,778.905				204.046	948.813		1.000
				Customer Metering Inaccuracies	Unbilled Unmetered Consumption	<i>Not broken down</i>	
				863.358	222.236		<i>Not broken down</i>
				Systematic Data Handling Errors	Leakage on Service Connections	<i>Not broken down</i>	
				41.007	44.447		



AWWA Free Water Audit Software: Dashboard

WAS v5.0

American Water Works Association.
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The graphic below is a visual representation of the Water Balance with bar heights proportional to the volume of the audit components

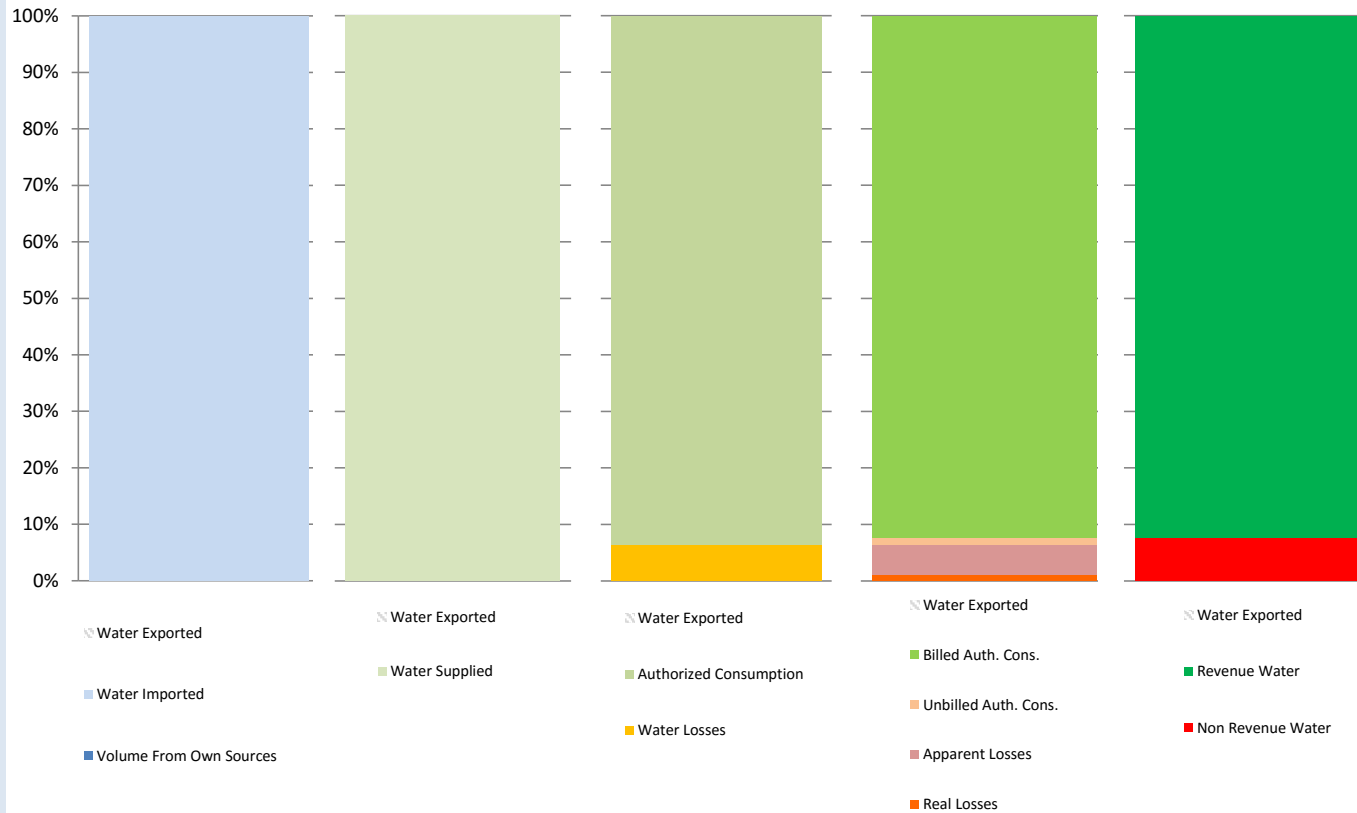
Water Audit Report for: **Rainbow Municipal Water District**

Reporting Year: **2015** **1/2015 - 12/2015**

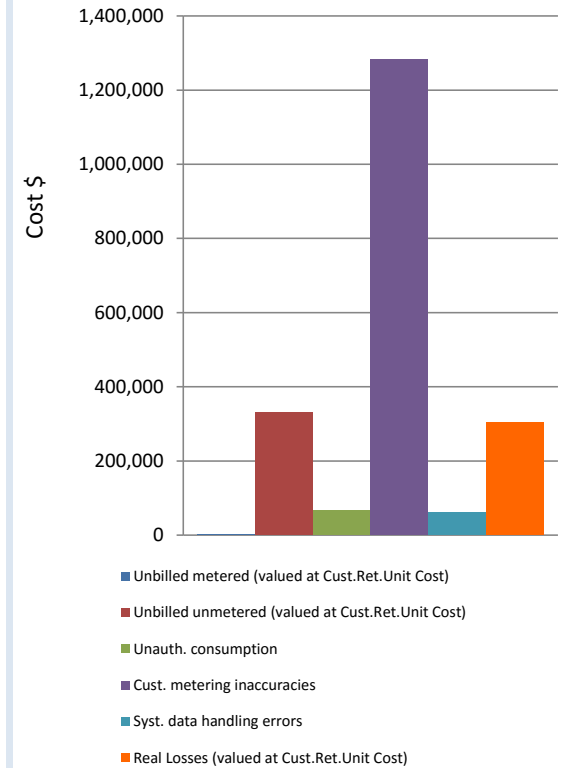
Data Validity Score: **81**

Show me the VOLUME of Non-Revenue Water

Show me the COST of Non-Revenue Water



Total Cost of NRW = \$2,044,047



Appendix C: SB X7-7 Verification and Compliance Forms

1. 2015 Verification Form - Baselines and Targets Calculation Worksheets
2. 2020 Compliance Form

2015 Verification Form Tables

SB X7-7 Table-1: Baseline Period Ranges

Baseline	Parameter	Value	Units
10- to 15-year baseline period	2008 total water deliveries	27,198	Acre Feet
	2008 total volume of delivered recycled water	0	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period ¹	10	Years
	Year beginning baseline period range	1999	
	Year ending baseline period range ²	2008	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range ³	2007	
¹ If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
² The ending year must be between December 31, 2004 and December 31, 2010.			
³ The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES: Potable per SDCWA			

SB X7-7 Table 2: Method for Population Estimates

Method Used to Determine Population (may check more than one)	
<input type="checkbox"/>	1. Department of Finance (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input checked="" type="checkbox"/>	4. Other* DWR recommends pre-review
<p>* Estimates per San Diego Association of Governments (SANDAG). Data provided by SANDAG 4/5/16. Custom data sort to Rainbow service area boundary, per shape file provided by District 2015. SANDAG methodology uses census data for 2000 and 2010, at census block level.</p>	

SB X7-7 Table 3: Service Area Population		
Year		Population
10 Year Baseline Population		
Year 1	1999	16,045
Year 2	2000	16,178
Year 3	2001	17,201
Year 4	2002	17,099
Year 5	2003	17,122
Year 6	2004	17,882
Year 7	2005	17,899
Year 8	2006	18,039
Year 9	2007	18,145
Year 10	2008	18,242
5 Year Baseline Population		
Year 1	2003	17,122
Year 2	2005	17,882
Year 3	2006	17,899
Year 4	2007	18,039
Year 5	2008	18,145
2015 Compliance Year Population		
	2015	20,279
<p>NOTES: Estimates per San Diego Association of Governments (SANDAG). Data provided by SANDAG 4/5/16. Custom data sort to Rainbow service area boundary, per shape file provided by District 2015. SANDAG methodology uses census data for 2000 and 2010, at census block level.</p>		

SB X7-7 Table 4: Annual Gross Water Use

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System <i>Fm SB X7-7 Table(s) 4-A</i>	Deductions					Annual Gross Water Use
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water <i>Fm SB X7-7 Table 4-B</i>	Water Delivered for Ag Use	Process Water <i>Fm SB X7-7 Table(s) 4-D</i>	
10 Year Baseline - Gross Water Use								
Year 1	1999	25,177			0		0	25,177
Year 2	2000	29,859			0		0	29,859
Year 3	2001	27,329			0		0	27,329
Year 4	2002	31,633			0		0	31,633
Year 5	2003	28,995			0		0	28,995
Year 6	2004	33,300			0		0	33,300
Year 7	2005	25,273			0		0	25,273
Year 8	2006	30,501			0		0	30,501
Year 9	2007	33,186			0		0	33,186
Year 10	2008	27,198			0		0	27,198
10 year baseline average gross water use								29,245
5 Year Baseline - Gross Water Use								
Year 1	2003	28,995			0		0	28,995
Year 2	2005	33,300			0		0	33,300
Year 3	2006	25,273			0		0	25,273
Year 4	2007	30,501			0		0	30,501
Year 5	2008	33,186			0		0	33,186
5 year baseline average gross water use								30,251
2015 Compliance Year - Gross Water Use								
	2015	20,062			0		0	20,062
<p>NOTES : The Agricultural Use deduction is optional per SBx7-7 and the DWR Methodology guidebook. By not deducting its agricultural usage, the District satisfies its agricultural water management reporting through its UWMP, and is not subject to separate agricultural water management plan requirements.</p>								

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source		SDCWA		
This water source is:				
<input type="checkbox"/>	The supplier's own water source			
<input checked="" type="checkbox"/>	A purchased or imported source			
Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Entering Distribution System	Meter Error Adjustment* <i>Optional (+/-)</i>	Corrected Volume Entering Distribution System	
10 Year Baseline - Water into Distribution System				
Year 1	1999	25,177		25,177
Year 2	2000	29,859		29,859
Year 3	2001	27,329		27,329
Year 4	2002	31,633		31,633
Year 5	2003	28,995		28,995
Year 6	2004	33,300		33,300
Year 7	2005	25,273		25,273
NOTES: F	2006	30,501		30,501
Year 9	2007	33,186		33,186
Year 10	2008	27,198		27,198
5 Year Baseline - Water into Distribution System				
Year 1	2003	28,995		28,995
Year 2	2005	33,300		33,300
Year 3	2006	25,273		25,273
Year 4	2007	30,501		30,501
Year 5	2008	33,186		33,186
2015 Compliance Year - Water into Distribution System				
	2015	20,062		20,062
<i>* Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document</i>				
NOTES: Sole source of District supply.				

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Annual Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use (GPCD)
10 Year Baseline GPCD				
Year 1	1999	16,045	25,177	1,401
Year 2	2000	16,178	29,859	1,648
Year 3	2001	17,201	27,329	1,418
Year 4	2002	17,099	31,633	1,652
Year 5	2003	17,122	28,995	1,512
Year 6	2004	17,882	33,300	1,662
Year 7	2005	17,899	25,273	1,261
Year 8	2006	18,039	30,501	1,509
Year 9	2007	18,145	33,186	1,633
Year 10	2008	18,242	27,198	1,331
10 Year Average Baseline GPCD				1,503
5 Year Baseline GPCD				
Baseline Year <i>Fm SB X7-7 Table 3</i>		Service Area Population <i>Fm SB X7-7 Table 3</i>	Gross Water Use <i>Fm SB X7-7 Table 4</i>	Daily Per Capita Water Use
Year 1	2003	17,122	28,995	1,512
Year 2	2005	17,882	33,300	1,662
Year 3	2006	17,899	25,273	1,261
Year 4	2007	18,039	30,501	1,509
Year 5	2008	18,145	33,186	1,633
5 Year Average Baseline GPCD				1,515
2015 Compliance Year GPCD				
2015		20,279	20,062	883
NOTES:				

SB X7-7 Table 6: Gallons per Capita per Day <i>Summary From Table SB X7-7 Table 5</i>	
10 Year Baseline GPCD	1,503
5 Year Baseline GPCD	1,515
2015 Compliance Year GPCD	883
NOTES:	

SB X7-7 Table 7: 2020 Target Method*Select Only One*

Target Method		Supporting Documentation
<input checked="" type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D <i>Contact DWR for these tables</i>
<input type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10 Year Baseline GPCD	2020 Target GPCD
1503	1202
NOTES: Target = 80% of Baseline	

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
1515	1440	1202	1202
* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD			
NOTES:			

SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
1,202	1,503	1,352
NOTES: Interim Target = 90% Baseline		

SB X7-7 Table 9: 2015 Compliance

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments		2015 GPCD <i>(Adjusted if applicable)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		TOTAL Adjustments	Adjusted 2015 GPCD		
883	1352	0	883	883	YES
NOTES:					

2020 Compliance Form Tables

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP*

(select one from the drop down list)

Acre Feet

**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*

NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate

Method Used to Determine 2020 Population
(may check more than one)

<input checked="" type="checkbox"/>	1. Department of Finance (DOF) or American Community Survey (ACS)
<input type="checkbox"/>	2. Persons-per-Connection Method
<input type="checkbox"/>	3. DWR Population Tool
<input type="checkbox"/>	4. Other DWR recommends pre-review

NOTES:

1) SANDAG Series 14 (version 17) includes DOF methodology.

SB X7-7 Table 3: 2020 Service Area Population

2020 Compliance Year Population

2020	21,841
-------------	--------

NOTES:

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System <i>This column will remain blank until SB X7-7 Table 4-A is completed.</i>	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water <i>This column will remain blank until SB X7-7 Table 4-B is completed.</i>	Water Delivered for Agricultural Use*	Process Water <i>This column will remain blank until SB X7-7 Table 4-D is completed.</i>	
	14,297	-	-	-	-	-	14,297

* Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source		SDCWA	
This water source is (check one) :			
<input type="checkbox"/>	The supplier's own water source		
<input checked="" type="checkbox"/>	A purchased or imported source		
Compliance Year 2020	Volume Entering Distribution System ¹	Meter Error Adjustment ² <i>Optional</i> (+/-)	Corrected Volume Entering Distribution System
	14,297	-	14,297
¹ Units of measure (AF, MG , or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.			
² Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document			
NOTES			

SB X7-7 Table 4-B: 2020 Indirect Recycled Water Use Deduction (For use only by agencies that are deducting indirect recycled water)

2020 Compliance Year	2020 Surface Reservoir Augmentation				2020 Groundwater Recharge			Total Deductible Volume of Indirect Recycled Water Entering the Distribution System
	Volume Discharged from Reservoir for Distribution System Delivery ¹	Percent Recycled Water	Recycled Water Delivered to Treatment Plant	Transmission/Treatment Loss ¹	Recycled Volume Entering Distribution System from Surface Reservoir Augmentation	Recycled Water Pumped by Utility ^{1,2}	Transmission/Treatment Losses ¹	
	14,297	0%	-	-	-	-	-	-

¹ Units of measure (AF, MG, or CCF) must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.
² Suppliers will provide supplemental sheets to document the calculation for their input into "Recycled Water Pumped by Utility". The volume reported in this cell must be less than total groundwater pumped - See Methodology 1, Step 8, section 2.c.

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)

2020 Gross Water <i>Fm SB X7-7 Table 4</i>	2020 Population <i>Fm</i> <i>SB X7-7 Table 3</i>	2020 GPCD
14,297	21,841	584

NOTES:

SB X7-7 Table 9: 2020 Compliance

Actual 2020 GPCD ¹	Optional Adjustments to 2020 GPCD					2020 Confirmed Target GPCD ^{1,2}	Did Supplier Achieve Targeted Reduction for 2020?
	Enter "0" if Adjustment Not Used			TOTAL Adjustments ¹	Adjusted 2020 GPCD ¹ <i>(Adjusted if applicable)</i>		
	Extraordinary Events ¹	Weather Normalization ¹	Economic Adjustment ¹				
585	-	-	-	-	585	1202	YES

¹ All values are reported in GPCD
² **2020 Confirmed Target GPCD** is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.

NOTES:

Appendix D: Water Shortage Contingency Plan

DRAFT

2020 Water Shortage Contingency Plan

Prepared for
Rainbow Municipal Water District
Fallbrook, California
May 2021



Prepared By:



In association with:



This is a draft and is not intended to be a final representation of the work done or recommendations made by Brown and Caldwell. It should not be relied upon; consult the final report.



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1500
San Diego, CA 92101
(858) 514-8822

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List of Abbreviations

AFY	acre-feet per year
AMI	advanced metering infrastructure
Annual	
Assessment	annual water supply and demand assessment
CWC	California Water Code
District	Rainbow Municipal Water District
DWR	Department of Water Resources
EOC	Emergency Operations Center
ERP	Emergency Response Plan
SCADA	supervisory control and data acquisition system
PSAWR	Permanent Special Agriculture Water Rate
UWMP	Urban Water Management Plan
Water Authority	San Diego County Water Authority
WSCP	Water Shortage Contingency Plan

Section 1

Introduction

The Water Shortage Contingency Plan (WSCP) documents how Rainbow Municipal Water District (District) will respond in the event of a water shortage. A water shortage means that the available water supply cannot sufficiently meet the normally expected customer water use at a given point in time. This WSCP provides guidance for managing and mitigating a potential shortage of water supply. In the event of any water shortage emergencies, this WSCP should be followed in coordination with the District's emergency response plan.

The San Diego County Water Authority (Water Authority) is a wholesale water supplier that provides 100 percent of the supply to the District in normal years. The Water Authority has their own WSCP that guides their response to a water shortage.

The WSCP is an element of the District's Urban Water Management Plan (UWMP), both of which are updated every five years in accordance with the California Water Code and submitted to the Department of Water Resources (DWR). The WSCP must be able to be amended separately from the UWMP. As such there is the flexibility to be able to separate the WSCP from the UWMP for future needs.

The WSCP is structured as recommended by DWR in the 2020 Urban Water Management Plan Guidebook. The WSCP consists of the following elements:

- **Section 2:** Water Supply Reliability Analysis Summary
- **Section 3:** Annual Water Supply and Demand Assessment Procedures
- **Section 4:** Six Standard Water Shortage Stages
- **Section 5:** Shortage Response Actions
- **Section 6:** Emergency Response Plan
- **Section 7:** Communication Protocols
- **Section 8:** Compliance and Enforcement
- **Section 9:** Legal Authorities
- **Section 10:** Financial Consequences of WSCP Activation
- **Section 11:** Monitoring and Reporting
- **Section 12:** WSCP Refinement, Adoption, Submittal, and Availability

Section 2

Water Supply Reliability Analysis Summary

The water supply reliability analysis is documented in Section 7 of the UWMP. To comply with the Water Code, the analysis is summarized in this section. The reliability of supplies and the key issues that may create shortage conditions relative to the District's water supply portfolio are summarized below.

2.1 Water System Reliability

The water system reliability analysis to meet demands in normal, single dry, and multiple dry years over a five-year drought period is described narratively and in tabulated format in Section 7 of the UWMP. Historically, the Water Authority supply has been very reliable with only occasional supply reductions during droughts impacting California or the Colorado River Watershed. The District anticipates there will be no supply shortages within the District's service area in a normal year, single dry-year or multiple dry- years through 2045.

2.2 Key Risks for a Potential Shortage Condition

Though the District's supply is highly reliable, there are scenarios that could result in the District declaring water shortage stage conditions. For example, water shortage stages may be declared if the California Governor enacts an Executive Order calling for water demand reductions. Below is a list of the key risks to the District that could potentially result in a shortage condition.

- Regional drought circumstances that lead to water supply allocations/cutbacks from the Water Authority
- Regulatory restrictions enacted upon imported supplies
- Earthquakes or other hazards that may cause catastrophic failure of conveyances for water supplies imported via the Water Authority, which partially originate from the State Water Project or the Colorado River Aqueduct

Section 3

Annual Water Supply and Demand Assessment Procedures

The annual water supply and demand assessment (Annual Assessment) shall be conducted annually and submitted to DWR on or before July 1 of each year beginning with the first Annual Assessment due by July 1, 2022. The Annual Assessment forecasts near-term water supply conditions to ensure shortage response actions are triggered in a timely manner. The Annual Assessment is submitted to DWR with information on anticipated water supply shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with this WSCP.

This section presents the decision-making process that the District will use each year to determine its water supply reliability. The District will conduct an annual water supply and demand assessment that follows the steps illustrated in Figure 3-1 and described below. The decision-making process also includes the key data inputs and assessment methodology that will be used to evaluate the District's water supply and demand. The evaluation criteria, unconstrained demand, water supply, infrastructure considerations, and other factors are included in the steps. Once DWR finalizes the Annual Assessment guidelines, this process may be modified.

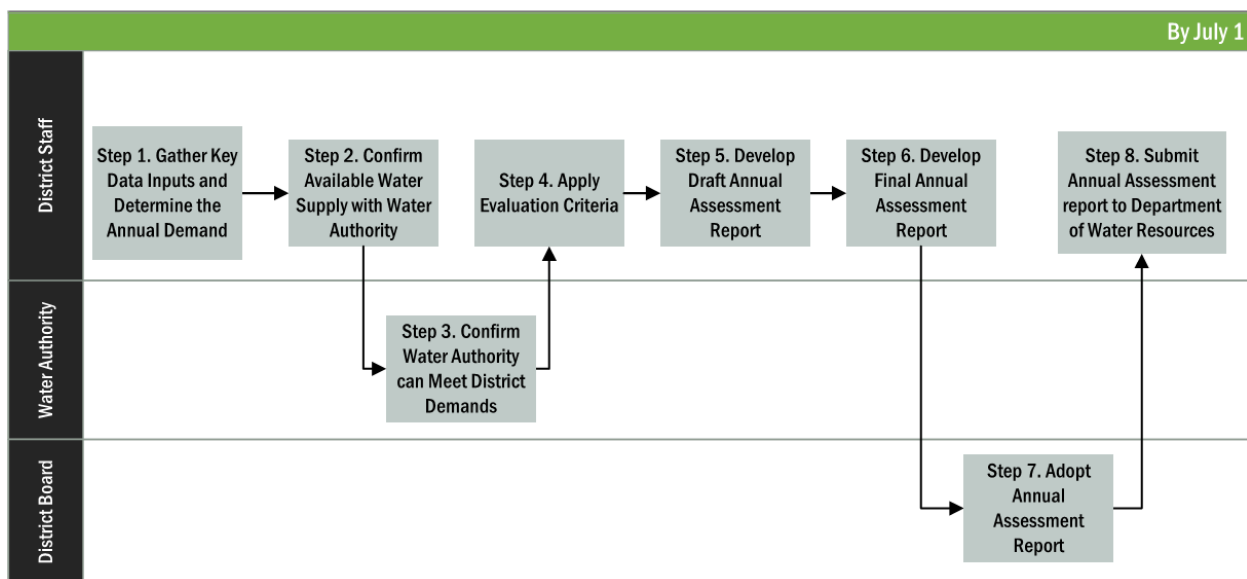


Figure 3-1. Annual Assessment Procedure and Decision-Making Process

Step 1. District Gathers Key Data Inputs and Determines the Unconstrained Demand

Prior to March 1st of each year, the District will estimate unconstrained customer demand for the current year and one dry year using a method similar to that used by the District for its 2020 UWMP water demand projections. DWR defines unconstrained customer demand as the District's water use before any projected demand reduction response actions are implemented due to WSCP activation. The projections shall be based on recent water use, while considering impacts on demand from

changing agricultural demands, climate patterns, potential service area expansion or population growth, and other influencing factors.

Step 2. District Coordinates with Water Authority to Confirm Available Water Supply

Prior to March 1st of each year, the District will coordinate with the Water Authority to confirm that their available water supply will meet the District's unconstrained demand. The District receives 100 percent of its supply from the Water Authority without supply limitations in normal years. In times of drought, the Water Authority may determine a reduced annual water allocation for their member agencies based on a predetermined methodology.

Step 3: Water Authority Confirms Supply

The Water Authority will confirm whether the available water supply can meet the District's water demands for the current year and one subsequent dry year. The Water Authority will determine their methodology for this analysis, but the basis of this methodology is as follows:

- Consider hydrological and regulatory conditions in the current year when making their determination.
- Consider how dry-year hydrological and regulatory conditions in the subsequent year may impact their water supplies
- Identify any water transmission or storage infrastructure constraints that may impact water supply deliveries to the District
- Provide descriptive text of the available water supply to the District for both scenarios

Step 4. Apply Evaluation Criteria

The Annual Assessment is based on evaluating the key data inputs to determine water supply reliability. The water supply and demand information will be compared in an Excel table or other tool using a DWR specified timestep (i.e., monthly data, quarterly, or annual data), and reliability will be assessed by considering local conditions, potential supply uncertainties, and any possible constraints on water distribution infrastructure from events such as planned maintenance, construction, equipment outages, etc.

Step 5. Develop Draft Annual Assessment Report

The District will compile the draft Annual Assessment report using the key data inputs, evaluation criteria, and results of the analysis. The report will contain a description and quantification of each source of water supply for the current year and one subsequent dry year. The report will also identify and quantify any anticipated water supply shortages. If any water shortages are anticipated, the report will indicate which water shortage level of the Water Shortage Contingency Plan to recommend for initiation.

Step 6. Develop Final Annual Assessment Report

The District will conduct an internal review and approval process of the draft, in order to prepare the Final Annual Assessment Report. The Final Report will be submitted to the District's Board of Directors for approval.

Step 7. Adopt Annual Assessment Report

The District's Board of Directors will review and adopt the Annual Assessment report, declaring a water shortage if necessary.

Step 8. Submit Annual Assessment Report to DWR

The District will submit the Annual Assessment report to DWR on or before July 1st of each year.

Section 4

Six Standard Water Shortage Stages

The District has developed a six-stage WSCP that defines the shortage levels based upon the percent of water supply shortage in comparison to unconstrained demand, as shown in Table 4-1. The District's WSCP contains six-stages to provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions. The six standard water shortage levels correspond to progressively increasing estimated shortage conditions and align with the response action the District would implement to meet the severity of the impending shortages.

Table 4-1. Water Shortage Contingency Plan Levels (DWR Table 8-1)		
Shortage Level	Percent Shortage Range ¹	Water Shortage Condition
1	Up to 10%	Water supply conditions are sufficient to meet 90 to 100% of projected unconstrained demand for the next two years.
2	Up to 20%	Water supply conditions are sufficient to meet 80 to 90% of projected unconstrained demand for the next two years.
3	Up to 30%	Water supply conditions are sufficient to meet 70 to 80% of projected unconstrained demand for the next two years.
4	Up to 40%	Water supply conditions are sufficient to meet 60 to 70% of projected unconstrained demand for the next two years.
5	Up to 50%	Water supply conditions are sufficient to meet 50 to 60% of projected unconstrained demand for the next two years.
6	>50%	Water supply conditions are sufficient to meet less than 50% of projected unconstrained demand for the next two years.

Notes: Water shortage condition is based on unconstrained demand compared to projected supply. Projected supply is based on water deliveries from the Water Authority.

Section 5

Shortage Response Actions

Shortage response actions are aligned with the defined shortage levels defined in Table 4-1. Shortage response actions include locally appropriate supply augmentation actions and locally appropriate demand reduction actions such as operational changes, mandatory prohibitions against specific water use practices, and state mandated prohibitions. Each shortage response action is intended to reduce a portion of the gap between supplies and demand. The percent of water demand reduction for each action is estimated in Section 5.1.

5.1 Demand Reduction Actions

Prioritized use of available potable water during shortages is based on the difference between basic needs (i.e., drinking, toilet flushing) and discretionary uses (i.e., landscape irrigation), and legal requirements set forth in the California Water Code (CWC), Sections 350-358. Water reduction actions implemented during shortages will not affect the following water use types:

- Minimum health and safety allocations for interior residential needs (includes single family, multifamily, hospitals and convalescent facilities, retirement and mobile home communities, student housing, firefighting, and public safety)
- Commercial, industrial, institutional/governmental operations, where water is used for manufacturing, to meet minimum health and safety allocations for employees and visitors, or to maintain jobs and economic base of the community, but not for landscape uses
- Commercial growers or nurseries

Locally appropriate demand reduction actions to adequately respond to shortages are specified in Table 5-1 on page 5-3. Table 5-1 includes:

- Demand reduction actions by shortage level. All demand reduction actions in lower levels continue to be implemented as the shortage level increases, unless otherwise noted in the table.
- Estimated annual reduction in water by volume and percent for each demand reduction action.
- Customer Outreach/Penalty, charge, or other enforcement for each demand reduction action.

The assumptions and references for the estimated annual reduction in water by volume are provided in Attachment A.

5.1.1 Special Water Feature Distinction

Water features that are not pools or spas are analyzed and defined separately from pools and spas in the WSCP. Non-pool or non-spa water features including ponds, lakes, waterfalls, and fountains that do not require the use of potable water for health and safety considerations, are defined as decorative water features and recreational water features and are included as such in the response actions and are enforced and monitored as part of the WSCP process.

Under all conditions and stages, the WSCP prohibits using potable water in an ornamental fountain or other decorative water feature, except where the water is part of a recirculating system. At Shortage Level 4 all decorative water features that use potable water must be drained and kept dry.

5.2 Supply Augmentation and Other Actions

Locally appropriate supply augmentation actions and operational changes are listed in Table 5-2. Because the District is reliant on water deliveries from the Water Authority, localized supply augmentation options are currently limited.

Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
1 through 5	Landscape - Restrict or prohibit runoff from landscape irrigation	43	0.30	Prohibit the application of potable water on outdoor landscapes in a manner that causes excessive runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	Other - Require automatic shut off hoses	43	0.30	Prohibit the use of a hose that dispenses potable water to wash a motor vehicle, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use. ^a	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	Other - Prohibit use of potable water for washing hard surfaces	87	0.61	Prohibit the application of potable water to driveways and sidewalks.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	Water Features - Restrict water use for decorative water features, such as fountains	43	0.30	Prohibit the use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 5	Landscape - Other landscape restriction or prohibition	43	0.30	Prohibit the application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall. ^a	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 6	CII - Restaurants may only serve water upon request	4	0.03	Prohibit the serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1	Landscape - Limit landscape irrigation to specific days	760	5.31	Limit residential and commercial landscape irrigation to no more than three (3) assigned days per week on a schedule established by the General Manager and posted by the District. ^a	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 5	Landscape - Prohibit certain types of landscape irrigation	16	0.11	Prohibit the irrigation with potable water of ornamental turf on public street medians.	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1
1 through 5	Landscape - Prohibit certain types of landscape irrigation	129	0.90	Prohibit the irrigation with potable water of landscapes outside of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California	None in Shortage Level 1, Customer Outreach/Penalty above Shortage Level 1



Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
				Building Standards Commission and the Department of Housing and Community Development.	
2 through 5	Landscape - Limit landscape irrigation to specific days	1,140	7.97	Limit residential and commercial landscape irrigation to no more than two (2) assigned days per week on a schedule established by the General Manager and posted by the District. ^a	Customer Outreach/Penalty
2 through 5	Landscape - Limit landscape irrigation to specific times	597	4.17	Limit lawn watering and landscape irrigation using sprinklers to no more than ten (10) minutes per watering station per assigned day. This provision does not apply to landscape irrigation systems using water efficient devices, including but not limited to weather-based controllers, drip/micro-irrigation systems and stream rotor sprinklers. ^a	Customer Outreach/Penalty
2 through 6	Offer Water Use Surveys	574	4.01	Offer District customers water use surveys to identify existing passive leaks or inefficiencies in plumbing or irrigation systems.	Incentive
3 through 6	Moratorium or Net Zero Demand Increase on New Connections	129	0.90	No new potable water service shall be provided, no new temporary meters or permanent meters shall be provided, and no statements of immediate ability to serve or provide potable water service (such as, will serve letters, certificates, or letters of availability) shall be issued, unless (1) a valid, unexpired building permit has already been issued for the project; (2) In the opinion of the District Board of Directors the project is necessary to protect the public's health, safety, and welfare; or (3) The applicant provides substantial evidence of an enforceable binding commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.	None
3 through 5	Landscape - Prohibit certain types of landscape irrigation	557	3.89	Water landscaped areas, including trees and shrubs located on residential and commercial properties, and not irrigated by a landscape irrigation system governed by section 5 (b) (1), on the same schedule set forth in section 5 (b) (1) by using a bucket, hand-held hose with positive shut-off nozzle, or low-volume non-spray irrigation. ^a	Customer Outreach/Penalty



Table 5-1. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
3 and 4	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	132	0.92	Repair all leaks within seventy-two (72) hours of notification by the District unless other arrangements are made with the General Manager.	Customer Outreach/Penalty
3 through 6	Other water feature or swimming pool restriction	43	0.30	Stop filling or re-filling swimming pools, spas, ornamental fountains, lakes, ponds, or other water features, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to declaration of a drought response level under this ordinance.	Customer Outreach/Penalty
4 through 5	Landscape - Limit landscape irrigation to specific days	611	4.27	During the months of November through May, landscape irrigation is limited to no more than once per week on a schedule established by the General Manager and posted by the District. This section shall not apply to commercial growers or nurseries.	Customer Outreach/Penalty
4 through 6	Other water feature or swimming pool restriction	43	0.30	All decorative water features that use potable water must be drained and kept dry	Customer Outreach/Penalty
4 through 6	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	43	0.30	Stop washing vehicles except at commercial carwashes that recirculate water, or by high pressure/low volume wash systems.	Customer Outreach/Penalty
4	Other	1,322	9.24	The District may establish up to a 10% reduction in water allocation for any property served by the District. ^b	Customer Outreach/Penalty
5	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	66	0.46	Repair all leaks within forty-eight (48) hours of notification by the District unless other arrangements are made with the General Manager.	Customer Outreach/Penalty
5	Other	2,645	18.84	The District may establish up to a 20% reduction in water allocation for any property served by the District ^b	Customer Outreach/Penalty
6	Landscape - Prohibit all landscape irrigation	1,942	13.57	Stop all landscape irrigation ^{ac}	Customer Outreach/Penalty
6	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	397	2.77	Repair all water leaks within twenty-four (24) hours of notification by the District unless other arrangements are made with the General Manager	Customer Outreach/Penalty



Table 5-1. Demand Reduction Actions (DWR Table 8-2)					
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
6	Other	3,967	27.72	The District may establish up to a 30% reduction in water allocation for any property served by the District. ^b	Customer Outreach/Penalty

Notes:

- a. This reduction action shall not apply to commercial growers or nurseries.
- b. The District may establish a water allocation for any property served by the District using a method that does not penalize persons for previous implementation of conservation methods or the installation of water saving devices. The decision to establish a water allocation and the method utilized to determine the amount of the allocation shall be at the sole discretion of District.
- c. If recycled water is available, it may be used to (1) maintain trees and shrubs on a limited schedule and by using a bucket, hand-held hose with a positive shut-off nozzle, or low-volume non-spray irrigation, (2) maintain existing landscaping necessary for fire protection as specified by the Fire Marshal of the local fire protection agency having jurisdiction over the property to be irrigated, (3) maintain existing landscaping for erosion control, (4) maintain landscaping within active public facilities, including parks and playing fields, day care centers, school grounds, cemeteries, and golf course greens, provided that such irrigation does not exceed two (2) days per week, (5) provide watering of livestock, and (6) supply public works projects and actively irrigated environmental mitigation projects.



Table 5-2. Supply Augmentation and Other Actions (DWR Table 8-3)				
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap? (AFY)	How much is this going to reduce the shortage gap? (%)	Additional Explanation or Reference
1 through 6	Expand Public Information Campaign	217.30	1.5	Offer workshops, increased use of bill inserts
2 through 6	Expand Public Information Campaign	43.46	0.3	Promotion of District-wide advanced metering infrastructure (AMI) hourly water use data to communicate with customers. The District offers rebates for AMI capable meters to their customers so they can easily access insights into their water use.



5.3 Shortage Response Action Effectiveness

The purpose of implementing demand reduction and supply augmentation actions is to reduce water demand and increase other sources of supply to make up for the water shortage gaps. If implemented, the demand reduction and supply augmentation actions outlined in Table 5-1 and Table 5-2 will allow the District to sufficiently meet the water shortage gaps at each shortage level. Table 5-3 presents the WSCP shortage gap reduction goals and compares them to the total shortage gap reduction possible if all demand reduction and supply augmentation actions are implemented for the associated shortage level.

Table 5-3. Shortage Gap Reduction from Demand Reduction and Supply Augmentation Actions						
	Shortage Level					
	1	2	3	4	5	6
WSCP Shortage Gap Reduction Goal (%)	10	20	30	40	50	>50
Shortage Gap Reduction due to Demand Reduction Actions (%)^a	8	19	28	42	50	55
Shortage Gap Reduction due to Supply Augmentation Actions (%)^a	2	2	2	2	2	2
Total Shortage Gap Reduction (%)	10	21	30	44	52	57

- a. Based upon assumed reduction percentages from Table 5-1 and compared to total actual water use for 2020.
- b. Based upon assumed supply augmentation percentages from Table 5-2 and compared to total actual water use for 2020.

Section 6

Emergency Response Plan

A catastrophic water shortage could occur when a natural disaster such as an earthquake results in damage to water supply conveyances, other state water infrastructure, or District water facilities. This could possibly result in deficient water supplies for the region and/or the District. In response to potential natural disasters and other emergencies, the District prepared an Emergency Response Plan (ERP) in 2018. The ERP includes standardized response and recovery procedures to minimize customer water service interruptions and to prevent, minimize, and mitigate human injury and infrastructure damage resulting from emergencies or disasters of human-made or natural origin. The information contained in the ERP is intended to prepare and guide staff and inform emergency response agencies. The ERP includes plans, procedures, lists, and identification of equipment that may be useful during an emergency. The ERP includes the following sections:

- **Section 1:** Introduction
- **Section 2:** Emergency Planning Process
- **Section 3:** Mutual Aid System
- **Section 4:** Water System Information and Hazard Identification
- **Section 5:** Preparedness Phase Operations
- **Section 6:** Response Phase Overview
- **Section 7:** EOC Staff Assignments and Responsibility
- **Section 8:** Restoration and Recovery Phase
- **Section 9:** Mitigation Phase

Additionally, the ERP provides specific guidelines for the four items listed below. These guidelines will give District emergency responders support when determining the necessary response actions to manage an incident in a timely manner.

- Establishing an Emergency Operations Center (EOC) including the location and resources required, as well as a secondary EOC if the primary EOC is compromised.
- Organization and responsibilities of the EOC personnel to evaluate and direct the overall response to the emergency.
- Strategies for emergency response, repair, and restoration of the water system.
- Responsibilities of District personnel during the emergency response.

6.1 Seismic Risk Assessment and Mitigation Plan

A seismic risk assessment of the District's critical water system assets, including storage tanks, pump stations, and critical transmission and distribution pipelines was conducted. This assessment includes a description of the likelihood of occurrence near the critical facilities, a list of the assets that may be impacted, potential impacts, and suggested mitigation measures. The seismic risk assessment is documented as a technical memorandum, and it is included as Attachment A.

Section 7

Communication Protocols

Timely and effective communication is a key element of water shortage contingency planning implementation. The District's communication protocols and procedures in the event of a water shortage are intended for activation only with District Board authorization. Under a water shortage condition, the District would assess the actual water supply and demand information and conditions to determine whether activating the WSCP is warranted. If activation is warranted, the General Manager will call for an emergency Board meeting to request District Board authorization, if needed. The District would recommend activation of the appropriate stage and request District Board authorization to initiate the measures necessary to achieve the appropriate demand reduction target. The public would be encouraged to understand and be involved in the decision-making process and provide feedback to the District Board on such an action.

The list below outlines the specific communication methods to inform customers, the public, interested parties, and local, regional, and the state government of any current or anticipated water shortage stage and the associated water demand reduction actions:

- Customers, the public, and other interested parties:
 - Announcements on District website homepage
 - Press releases via the River Village News
 - Public information and awareness program with workshops, park signage, water bill inserts, and educational programs at schools
- Local, regional, and state government
 - Email officials at cities and counties impacted by the water shortage
 - Email or place phone call to designated officials at regional and state level (DWR)

Section 8

Compliance and Enforcement

The District adopted Ordinance No 16-10: An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program in June 2016 which provides a description of penalties and the District's authority to fine or terminate water service. The ordinance will be revised in accordance with the water shortage stages, demand reduction actions, and other measures outlined in this WSCP. The ordinance will go before the District's Board for approval after the WSCP has been revised and adopted.

8.1 Ensuring Ordinance Compliance

When water shortage stages are enacted, the District will ensure compliance with the ordinance by launching education and communication programs with District customers. If violations are identified, the fines described in Section 8.2 may apply if the offender has already been issued a warning. In the event of a water shortage, customers participating in the Permanent Special Agriculture Water Rate (PSAWR) program must affirmatively accept the condition that service may be interrupted during water supply shortages before other classes of water service are interrupted. During shortages, the District notifies customers participating in PSAWR through, newsletters, mailers, and the District website.

8.2 Enforcement of Demand Reduction Actions

Any person who uses, causes to be used, or permits the use of water in violation of the ordinance is guilty of an offense punishable as outlined below. Each day that a violation of the ordinance occurs is a separate offense.

Similarly, the District will ensure compliance with and enforce provisions of the WSCP reduction actions taken at each shortage level as noted in Table 5-1 by the following means:

- Prior to issuing administrative fines for violations, the District will first conduct public outreach and issue a warning to customers not in compliance. The District will provide the customer with a fact sheet about water shortage demand reduction actions to explain why the measures are in place.
- Administrative fines may be levied for each subsequent violation, with increasing fees as follows:
 - \$100 for a first violation.
 - \$200 for a second violation within one year from occurrence of the first violation.
 - \$500 for each additional violation within one year of the first violation.
- Installation of a flow-restricting device in the meter.
- Violations may be prosecuted as a misdemeanor punishable by imprisonment in the county jail for not more than 30 days or by a fine not exceeding \$1,000, or by both as provided in CWC section 377.
- Willful violations of the mandatory conservation measures and water use restrictions applicable during a Level 6 Drought Emergency condition may be enforced by discontinuing service to the property at which the violation occurs, as provided by CWC section 356.

All remedies provided for herein shall be cumulative and not exclusive.

8.3 Exemptions and Appeals

If, due to unique circumstances, a specific requirement of this WSCP would result in undue hardship and disproportionate impact to a District customer, then an exemption may be granted or conditionally granted by following the procedures detailed below.

1. **Request an Exemption or Appeal.** The customer shall submit a letter to the District requesting an exemption or appeal.
2. **Provide supporting documentation.** The exemption application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant.
3. **Basis is found to support exemption.** An exemption shall be granted only if the District finds, based on the information provided in the application, supporting documents, any additionally requested information, and the District's records of water use information for the property, all of the following:
 - a. The exemption does not grant special privilege inconsistent with those available to all other District customers.
 - b. Unique circumstances specific to the applicant are found to have a disproportionate impact on the property or use that exceeds the impacts to customers generally.
 - c. The granted exemption will not cause harm to adjacent properties and will not impede the District's ability to fulfill the purpose of the WSCP.

The rationale and reason for the exemption request is not common, recurrent, or general in nature.

Approval Authority. The General Manager shall exercise approval authority and act upon any completed application no later than 30 days after submittal and may approve, conditionally approve, or deny the exemption. The applicant requesting the exemption shall be promptly notified in writing of any action taken. Unless specified otherwise at the time an exemption is approved, the variance applies to the subject property during the term of the mandatory shortage response.

Appeals to the District Board of Directors. An applicant may appeal a decision or condition of the General Manager on a variance application. The appeal must be in the form of a written request for a hearing and shall state the grounds for the appeal. At a public meeting, the District Board of Directors shall act as the approval authority and review the appeal. The decision of the District Board of Directors is final.

Section 9

Legal Authorities

The District's legal authority to enforce demand reduction measures during water shortages is codified by local ordinance, Rainbow Drought Ordinance 16-10: An Ordinance of Rainbow Municipal Water District Adopting a Drought Response Conservation Program.

The District shall declare a water shortage emergency condition in accordance with CWC Chapter 3 (commencing with Section 350) of Division 1 as stated below:

“Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.”

The District shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558.)

Section 10

Financial Consequences of WSCP Activation

The financial consequence of implementing the WSCP include potential revenue reductions and expense increases for the District. The District has estimated the costs associated with the revenue losses and has developed mitigation actions to reduce these impacts.

10.1 Potential Revenue Reductions and Expense Increases

Upon implementation of a shortage stage and the associated reduction actions, the District anticipates that revenues generated from the quantity charge component of customers' bills would be reduced proportionately to the water shortage percentage. In addition to reduced revenues, the District may also experience increased expenses due to the need for staff to carry out monitoring and enforcement actions identified by each shortage stage.

10.2 Mitigation Actions to Address Revenue Reductions

Throughout extended water shortage periods, the District would attempt to avoid rate adjustments.

Potential mitigation actions include:

- Use of financial reserves - The District has financial reserves to address decreased water sales during a water shortage.
- Postponement of capital improvements - The District could delay work on non-essential capital improvements until water sales become more sustainable.

10.3 Cost of Compliance

For the District to ensure its customers comply with the ordinance and CWC Chapter 3.3, Excessive Residential Water Use During Drought, additional costs will be incurred. These costs are associated with the increased costs for monitoring and enforcement of water use reduction measures.

Section 11

Monitoring and Reporting

The District will monitor and report implementation of the WSCP by collecting, tracking, and analyzing appropriate data for the purposes of monitoring reduction in customer water demands, customer compliance, and meeting state reporting requirements. Potable water use figures are recorded daily by District staff. The District operates its water system on a computerized supervisory control and data acquisition system (SCADA), which allows instantaneous viewing of water system conditions.

During a Shortage level 1 or 2, District staff would compare the daily and monthly water distribution totals to the target distribution totals to verify that the appropriate reduction goal is being met. The District Engineering and CIP Program Manager reviews the monthly distribution reports and determines if further action is required to meet demand reduction goals. Monthly distribution reports shall be sent to the District Board. If reduction goals are not met, the District Engineering and CIP Program Manager would notify the District Board so that corrective action is considered and/or taken.

During a Shortage Level 3 and higher, the procedure described above would be followed, with the addition of a weekly distribution report to the General Manager.

Section 12

WSCP Refinement, Adoption, Submittal, and Availability

As part of the District's commitment to ensuring reliable supplies, the WSCP will be adopted by the District Board and made available to the public.

12.1 Refinement Procedures

The WSCP is routinely updated to ensure water demand reduction actions and supply augmentation measures continue to accurately reflect the District's planned response to water shortage outages. The modifications to this WSCP for 2020 were adjusted to comply with the 2019 CWC revisions. Experience with recent drought conditions and recommendations from the Water Authority for regional consistency in water shortage contingency planning also played a role in the revisions to this WSCP.

Review and update of the WSCP shall occur in parallel with the update of the UWMP, at a minimum of every five years. However, the WSCP may also be updated independently of the UWMP and with greater frequency, at the District's discretion.

12.2 Adoption, Submittal, and Availability

The updated WSCP shall be adopted, submitted, and made available as part of the same process for the 2020 UWMP per the CWC requirements. During each WSCP review and update process, the revised WSCP will go through internal review prior to adoption by the District's Board. The WSCP must be reviewed and adopted prior to or in conjunction with the UWMP review and adoption process. The WSCP may also be periodically amended independently of the UWMP, as needed. In either instance, the public review period and adoption process follows that which is defined in Government Code 6066. The associated notifications for the public hearing process and the Board adoption resolution for the WSCP are provided as appendices to the UWMP.

The updated WSCP shall be made available on the District's website no later than 30 days after it is adopted. The WSCP shall also be available as an appendix to the UWMP document, which will be posted to the District's website and DWR's public Water Use Efficiency data portal website. The UWMP and its WSCP appendix will also be submitted to the California State Library and be available for review in hardcopy format in the District's offices during normal working hours.

Attachment A: Seismic Risk Assessment and Mitigation Plan



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San Diego, CA 92101

Technical Memorandum

T: 858.514.8822

Prepared for: Rainbow Municipal Water District
Project Title: 2020 Urban Water Management Plan
Project No.: 155487

Technical Memorandum

Subject: Water System Seismic Assessment
Date: April 14, 2021
To: Malik Tamimi, Project Manager
From: Cheryl Dilks, Project Manager
Copy to: J.P. Semper

Prepared by: Amber Pulido_____

Reviewed by: Paul Selsky, P.E._____

Limitations:

This document was prepared solely for Rainbow Municipal Water District in accordance with professional standards at the time the services were performed and in accordance with the contract between Rainbow Municipal Water District and Brown and Caldwell dated July 24, 2020. This document is governed by the specific scope of work authorized by Rainbow Municipal Water District; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by Rainbow Municipal Water District and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.

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Section 1: Seismic Assessment Purpose and Methodology

The California Water Code (CWC), Section 10632.5, states that beginning January 1, 2020, the Urban Water Management Plan (UWMP) “shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.” In response to this CWC requirement, the Department of Water Resources (DWR) now requires that a seismic assessment be included as part of the UWMP. Water suppliers may comply with this requirement by submitting a local hazard mitigation plan if that plan addresses seismic risk for the water system or the Risk and Resilience Assessment (RRA) and associated Emergency Response Plan (ERP) mandated by America’s Water Infrastructure Act (AWIA) of 2018. While there is a Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) for San Diego County, there is no specific seismic assessment for the major water facilities in the Rainbow Municipal Water District (District). The District has not yet completed its RRA and ERP updated for AWIA compliance, so they are not referenced in this seismic assessment.

1.1 Purpose of Seismic Assessment

The purpose of this assessment is to comply with the CWC by conducting a seismic risk assessment of the District’s critical water system assets, including storage tanks, pump stations, and critical transmission and distribution pipelines. This assessment includes a description of the likelihood of occurrence near the critical facilities, a list of the assets that may be impacted, potential impacts, and suggested mitigation measures.

1.2 Methodology

The seismic risk assessment uses the simplified approach outlined in the earthquake components of Tables 2b, 3b, 5b, 6b, 10b, and 11 from the U.S. Environmental Protection Agency (EPA)’s *Guidance for Small Community Water Systems on Risk and Resilience Assessments under AWIA*. Completed tables are attached to this TM as Attachment A. The District may choose to complete these tables for other water system risks at a later time.

Additionally, the District’s 2016 Water and Wastewater Master Plan Update was used to extract detailed information about the critical system assets. The EPA’s March 2018 *Earthquake Resilience Guide for Water and Wastewater Utilities* was used to determine the potential seismic impacts for the critical assets. San Diego County’s MJHMP was relied upon to describe the seismic risk for the District’s service area, and the EPA’s Vulnerability Self-Assessment Tool (VSAT) 2.0 was used to determine the annual threat likelihood of earthquake in the District’s area. Mitigation and resilience measures were determined using the EPA’s *Earthquake Incident Action Checklist* (see Attachment B) and FEMA’s *A Guide to Using HAZUS for Mitigation*.

Section 2: Seismic Risk for the District

In 2017, San Diego County updated its Multi-Jurisdictional Hazard Mitigation Plan (MJHMP). The MJHMP intends to enhance public awareness and local policies around hazard mitigation, create a tool for decision-making, promote compliance with State and Federal requirements, provide inter-jurisdictional coordination, and achieve regulatory compliance. The 2017 update includes an evaluation of seismic impacts and potential mitigation actions for certain areas of the county.

In the MJHMP, most hazards were given a risk level of high, medium, or low depending on several factors unique to the hazard. The plan also provided the likeliness of the hazard occurrence with either a “highly likely”, “likely” or “somewhat likely” rating. Earthquakes in the San Diego region were determined to be a

“high” risk and “somewhat likely to occur.” According to the MJHMP, there are several major active faults in San Diego County, including the Rose Canyon, La Nacion, Elsinore, San Jacinto, Coronado Bank, and San Clemente Fault Zone. The fault zones that are nearest the District’s service area are the Elsinore and San Jacinto fault zones. The San Jacinto Fault is the most active fault in the county. It branches off the major San Andreas Fault as it passes through the San Bernardino Mountains. Two other faults that can generate moderately sized but potentially damaging earthquakes are the Rose Canyon and Elsinore Faults. The MJHMP suggests maximum likely magnitudes based on the Richter scale for local faults, as shown in Table 1.

Fault	Maximum Magnitude
Coronado Bank	7.7
Elsinore	7.3
La Nacion	6.6
Rose Canyon	7.0
San Clemente	7.7
San Jacinto	7.3

Additionally, the EPA’s VSAT Web 2.0 provides a database of earthquake likelihood values by zip code. Earthquake severities are based on ranges of Peak Ground Acceleration (PGA). Refer to Table 2 below for the annual likelihood of an earthquake occurring for zip code 92028 (Fallbrook).

Earthquake Severity	Definition	Annual Threat Likelihood
EQ 1 - PGA 0.0 - 0.2	Earthquake with weak to light shaking, causing minimal structural damage.	100%
EQ 2 - PGA 0.2 - 0.4	Earthquake with moderate to strong shaking, causing light to moderate damage, particularly to poorly built or badly designed structures	0.24%
EQ 3 - PGA 0.4 - 0.8	Earthquake with very strong to severe shaking, causing moderate to heavy damage to integrity of masonry and frame structures.	0.097%
EQ 4 - PGA 0.8 - 1.1	Earthquake with violent shaking, causing heavy damage, partial building collapses, and potentially shifting structures off foundations; some underground pipes are broken.	0.012%
EQ 5 - PGA > 1.1	Earthquake with extreme shaking, causing very heavy damage to masonry, frame structures, foundations, dams, and bridges; considerable damage to underground pipelines; large landslides may occur.	0.0048%

Section 3: Seismic Risk Assessment

This section describes vulnerabilities to the District’s critical assets by using EPA’s *Guidance for Small Community Water Systems on Risk and Resilience Assessments under AWIA* as a guide.

3.1 Source Water

The District’s supply is fully reliant upon purchased imported potable water from the San Diego County Water Authority (Water Authority), which relies upon two aqueducts to convey water to southern California. An earthquake may impact the source water supply if the aqueducts experience structural failure. Seismic assessment of the aqueducts and source water supply are covered under the Water Authority’s and Metropolitan Water District of Southern California’s seismic assessment components of their Water Shortage Contingency Plans.

3.2 Constructed Conveyances and Water Supply Connections

The purchased water is delivered to the District through eight District Flow Control Facility (FCF) locations (i.e., Water Authority Aqueduct Connections) and two emergency connection locations. An earthquake may cause structural failure at the FCFs and emergency connections, potentially causing water loss from pipe breakage or cracking.

3.3 Storage and Distribution Facilities

The District has 3 operational reservoirs, 13 enclosed storage tanks, 7 booster pump stations (PS), 6 emergency pumps, and 56 pressure regulating stations within the District’s distribution system.

The District’s storage and distribution facilities and potential earthquake impacts are described in the following sections.

3.3.1 Distribution Pipelines

The District’s system includes 323 miles of distribution pipeline, ranging in diameter from 4-inch to 42-inches in diameter. Table 3 summarizes pipeline lengths by diameter. Ground shaking and liquefaction from earthquakes can cause pipes to crack at brittle joints and sink into the liquefied ground potentially causing significant sudden water loss, flood damage to nearby structures, and the inability to deliver water to some customers.

Pipeline Diameter (inches)	Total Pipeline Length (miles)	Pipeline Diameter (inches)	Total Pipeline Length (miles)
4	4.5	20	10.9
6	65.1	22	1
8	114.7	24	5.8
10	17.7	27	0.3
12	42.2	30	0.6
14	20.3	36	0.4
16	27	42	0.6
18	11.7		
Total Length of Pipe			323



3.3.2 Storage Facilities

The District has 3 operational reservoirs and 13 enclosed storage tanks. The three operational reservoirs are either concrete or asphalt lined. Reservoir failure from an earthquake can cause loss of control of water supply and downstream flooding of nearby structures.

There is one pre-stressed concrete tank, and the other 12 storage tanks are circular above-ground steel tanks. Some common earthquake effects on above ground tanks are structural stability failure, water sloshing within the tank causing structural failure, sliding on the foundation, cracking or shearing of walls for concrete tanks, and elephant foot buckling for steel tanks.

Table 4 lists the operational reservoirs and storage tanks for the District and their associated pressure zones and storage capacities. Asset names have been changed to protect sensitive information.

Table 4. Storage Facilities		
Storage Facility	Pressure Zone	Capacity (MG)
Tank/Reservoir 1	Magee	3.0
Tank/Reservoir 2 ⁽¹⁾	Rainbow Heights	0.9
Tank/Reservoir 3	Rainbow Heights	4.0
Tank/Reservoir 4	Gomez	3.5
Tank/Reservoir 5	U-1	0.6
Tank/Reservoir 6	U-1	1.5
Tank/Reservoir 7	Vallecitos	0.4
Tank/Reservoir 8	Northside	22.8
Tank/Reservoir 9	North	7.8
Tank/Reservoir 10	North	4.0
Tank/Reservoir 11	Canonita	6.0
Tank/Reservoir 12	South	4.0
Tank/Reservoir 13	South	4.0
Tank/Reservoir 14	South	4.0
Tank/Reservoir 15 ⁽¹⁾	Pala Mesa	203.7
Tank/Reservoir 16	Pala Mesa	6.0
Tank/Reservoir 17	Morro Tank	4.0
Tank/Reservoir 18	Morro Res	151.5

⁽¹⁾ Out of Service Facility

3.3.3 Booster Pump Stations

There are seven booster PS facilities. The PS buildings are susceptible to structural damage from earthquakes, and the pump operations may be impacted by earthquake associated power outages. Liquefaction may occur, causing the entire facility and its assets, such as booster pumps, generators, and piping, to lose bearing strength and collapse from liquefaction of the soil underlying the structures. Table 5 lists the



District’s booster pump stations, the total number of pumps in each facility, and capacity information. Asset names have been changed to protect sensitive information.

Table 5. Booster Pump Stations				
Pump Station Name	Total Number of Pumps	Pump Station Capacity		
		Total Capacity		Firm Capacity
		gpm	MGD	MGD
PS 1	4	3,509	5.1	3.6
PS 2	3	1,615	2.3	1.5
PS 3	1	679	1.0	1.0
PS 4	2	6,296	5.8	3.2
PS 5	1	3,455	5.0	5.0
PS 6	4	4,552	6.6	4.1
PS 7	2	1,398	2.0	1.0

3.3.4 Other Water Distribution System Assets

The pressure regulating stations house one or more hydraulically actuated pressure reducing valves (PRV). Six pressure control stations have only one PRV. The other 50 stations have more than one PRV. In the event of an earthquake, these PRVs could crack or break, causing valve failure and localized flooding. Refer to the 2016 Master Plan for the full list of PRVs.

3.4 Electronic, Computer, or Other Automated Systems

The District has one centralized SCADA system to control their distribution system. Earthquakes commonly cause power outages due to damage to power lines, transformers, and generators which could disrupt SCADA functionality.

3.5 Operations and Maintenance of the System

This section describes critical assets related to the operation and maintenance of the District’s system. An earthquake may cause structural damage to the administrative and operational buildings, which may then impact internal and external system communications.

Customer Center and Operations Center

The District has a customer service center and an operations center.

Power

The District receives its power supply from San Diego Gas & Electric (SDG&E). The District is subject to any associated earthquake impacts to SDG&E’s facilities in the District’s service area.

Section 4: Mitigation and Resilience Measures

This section discusses potential actions that could be taken to improve the resiliency of the system to earthquakes and mitigate the risk of failure. Strategies to improve the District’s assets’ resilience to earthquakes and enhancements to operational strategies to improve system resilience are described in the following sections.

4.1.1 Mitigation and Resilience for Water System Assets

To mitigate the threat of earthquakes to District FCFs, reservoirs, storage tanks, distribution pipelines, booster pumps, emergency pumps, emergency connections, and other District buildings, the District should first consider conducting a complete structural assessment of the assets to seismically evaluate their performance if subjected to earthquakes of varying degrees. This evaluation can identify the “high risk” assets that should take priority for replacement or seismic design retrofits in the future. Assets associated with source water resilience, such as aqueducts, shall be addressed by the Water Authority and MWD independently.

4.1.2 Operational Strategies to Improve Water System Resilience

Given the District’s dependence on a wholesaler, improving reliability and redundancy can help strengthen preparedness and reduce response times in case of earthquake impacts to the Water Authority or MWD systems. The District could consider identifying interconnectivity strategies between nearby systems, such as City of Oceanside, Carlsbad Municipal Water District, and Vista Irrigation District to maximize reliability and resiliency. Although Water Authority supplies are considered reliable, improved interconnection with other systems could help address an earthquake event that may impact some or all District FCFs. Another strategy involves enhancing or establishing clear earthquake event communication protocols and documenting emergency equipment and other resources in advance. See Section 3.1.3 for further suggestions for the Emergency Response Plan (ERP).

The District should also consider identifying and updating lists of priority water customers (e.g., hospitals, dialysis clinics, schools) to develop a plan to restore water service to those customers first. Back-up supplies of water (bulk water delivery or bottled water supplies) should also be identified and documented in the ERP.

Because earthquakes will impact multiple utilities simultaneously, it is also recommended that the District establish coordination with SDG&E now to foster better communication and response times immediately after an earthquake. Sharing information with the power utility regarding critical asset locations could help facilitate faster power recovery to priority assets. Locations of back-up generators and fuel reserves should be updated regularly and included with the ERP.

4.1.3 Emergency Response Planning

The District should review and update their ERP to ensure all earthquake procedures, equipment lists, and emergency contacts are current. The current ERP specifically addresses earthquakes and procedures to follow in Section 4.1.1. To supplement this, the EPA’s earthquake checklist in Attachment B can serve as a helpful guide for emergency planning and response. Additionally, the following are tools that can be used to revise an ERP:

- [Earthquake Hazard Mitigation Handbook](#) (Federal Emergency Management Agency [FEMA])
- [Planning for an Emergency Drinking Water Supply](#) (EPA)
 - Incident monitoring: [USGS recent earthquake activity map](#) (U.S. Geological Survey [USGS])
- Drinking Water Emergency Response Plan Guidelines (State Water Resources Control Board [SWRCB])

- [ERP Template from Division of Drinking Water \(DDW\)'s ERP Workshop](#)
- [EPA Region 1 Water/Wastewater System Generator Preparedness Brochure](#) (EPA)

Finally, it is recommended that all District staff review the ERP, understand where the emergency operations center (EOC) is located, how it will be activated, and what their role is during an earthquake emergency. Desktop trainings and exercises for seismic scenarios are also suggested.

References

Atkins, Rainbow Municipal Water District Water and Wastewater Master Plan Update, Rainbow Municipal Water District, 2016.

County of San Diego – Office of Emergency Services, San Diego County – Unified District Council, Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) for San Diego County, California, 2017.

Environmental Protection Agency (EPA), “Earthquake Resilience Guide for Water and Wastewater Utilities,” Earthquake Resilience Guide for Water and Wastewater Utilities, March 2018, <https://www.epa.gov/sites/production/files/2018-02/documents/180112-earthquakeresiliencguide.pdf>.

Environmental Protection Agency (EPA), “Water Sector Incident Action Checklist – Earthquake,” Incident Action Checklist – Earthquake, January 2015, https://www.epa.gov/sites/production/files/2015-06/documents/earthquake_1.pdf.

National Institute of Building Sciences for the Federal Emergency Management Agency, “A Guide to Using HAZUS for Mitigation,” April 2002, https://www.fema.gov/pdf/plan/prevent/hazus/hazus_for_mitigation.pdf.

Attachment A: Guidance for Small Community Water Systems on Risk and Resilience Assessments under AWIA

Table 2b: Source Water (Natural Hazards)

Asset Category: Source Water Examples of Assets in this Category: Encompasses all sources that supply water to a water system. Possible examples include rivers, streams, lakes, source water reservoirs, groundwater, and purchased water.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Source Water</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	The District’s supply is fully reliant upon purchased imported potable water from the San Diego County Water Authority (Water Authority), which relies upon two aqueducts to convey water to southern California. An earthquake may impact the source water supply if the aqueducts experience structural failure. Seismic assessment of the aqueducts and source water supply are covered under the Water Authority’s and Metropolitan Water District of Southern California’s seismic assessment components of their Water Shortage Contingency Plans.
<input type="checkbox"/> Tornado	Click or tap here to enter text.

Asset Category: Source Water Examples of Assets in this Category: Encompasses all sources that supply water to a water system. Possible examples include rivers, streams, lakes, source water reservoirs, groundwater, and purchased water.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Source Water</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Ice storm	Click or tap here to enter text.
<input type="checkbox"/> Fire	Click or tap here to enter text.
<input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.	Click or tap here to enter text.

Table 3b: Pipes and Constructed Conveyances, Water Collection, and Intake (Natural Hazards)

Asset Category: Pipes and Constructed Conveyances, Water Collection, and Intake Examples of Assets in this Category: Encompasses the infrastructure that collects and transports water from a source water to treatment or distribution facilities. Possible examples include holding facilities, intake structures and associated pumps and pipes, aqueducts, and other conveyances.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Pipes and Constructed Conveyances, Water Collection, and Intake</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	The purchased water is delivered to the District through eight District Flow Control Facility (FCF) locations (i.e., Water Authority Aqueduct Connections) and two emergency connection locations. An earthquake may cause structural failure at the FCFs and emergency connections, potentially causing water loss from pipe breakage or cracking.
<input type="checkbox"/> Tornado	Click or tap here to enter text.
<input type="checkbox"/> Ice storm	Click or tap here to enter text.

Asset Category: *Pipes and Constructed Conveyances, Water Collection, and Intake*
Examples of Assets in this Category: Encompasses the infrastructure that collects and transports water from a source water to treatment or distribution facilities. Possible examples include holding facilities, intake structures and associated pumps and pipes, aqueducts, and other conveyances.

<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Pipes and Constructed Conveyances, Water Collection, and Intake</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<p><input type="checkbox"/> Fire</p>	<p>Click or tap here to enter text.</p>
<p><input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.</p>	<p>Click or tap here to enter text.</p>

Table 5b: Storage and Distribution Facilities (Natural Hazards)

<p>Asset Category: Storage and Distribution Facilities</p> <p>Examples of Assets in this Category: Encompasses all infrastructure used to store water after treatment, maintain water quality, and distribute water to customers. Possible examples include residual disinfection, pumps, tanks, reservoirs, valves, pipes, and meters.</p>	
Natural Hazards	Brief Description of Impacts
<p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>If you select a natural hazard in the left column as a significant risk to the <i>Storage and Distribution Facilities</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<p><input type="checkbox"/> Hurricane</p>	<p>Click or tap here to enter text.</p>
<p><input type="checkbox"/> Flood</p>	<p>Click or tap here to enter text.</p>
<p><input checked="" type="checkbox"/> Earthquake</p>	<p>The District’s system includes 323 miles of distribution pipeline, ranging in diameter from 4-inch to 42-inches in diameter. There are 3 operational reservoirs, 13 enclosed storage tanks, 7 booster pump stations, 6 emergency pumps, and 56 pressure reducing stations within the distribution system.</p> <p>Distribution Pipelines:</p> <p>Ground shaking and liquefaction from earthquakes can cause pipes to crack at brittle joints and sink into the liquefied ground potentially causing significant sudden water loss, flood damage to nearby structures, and the inability to deliver water to some customers.</p> <p>Storage Facilities</p> <p>Reservoir failure from an earthquake can cause loss of control of water supply and downstream flooding of nearby structures. There is one pre-stressed concrete tank, and the other 12 storage tanks are circular above-ground steel tanks. Some common earthquakes effects on above ground tanks are structural stability failure, water sloshing within the tank causing structural failure, sliding on the foundation, cracking or shearing of walls for concrete tanks, and elephant foot buckling for steel tanks.</p>

Asset Category: Storage and Distribution Facilities Examples of Assets in this Category: Encompasses all infrastructure used to store water after treatment, maintain water quality, and distribute water to customers. Possible examples include residual disinfection, pumps, tanks, reservoirs, valves, pipes, and meters.	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Storage and Distribution Facilities</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input checked="" type="checkbox"/> Earthquake	<p>Booster Pump Stations There are seven booster PS facilities. The PS buildings are susceptible to structural damage from earthquakes, and the pump operations may be impacted by earthquake associated power outages. Liquefaction may occur, causing the entire facility and its assets, such as booster pumps, generators, and piping, to lose bearing strength and collapse from liquefaction of the soil underlying the structures.</p> <p>Pressure Reducing Valves The pressure regulating stations house one or more hydraulically actuated pressure reducing valves (PRV). In the event of an earthquake, the PRVs could crack or break, causing valve failure and localized flooding.</p>
<input type="checkbox"/> Tornado	
<input type="checkbox"/> Ice storm	Click or tap here to enter text.
<input type="checkbox"/> Fire	Click or tap here to enter text.

Table 6b: Electronic, Computer, or Other Automated Systems (including the security of such systems) (Natural Hazards)

<p>Asset Category: <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i></p> <p>Examples of Assets in this Category: Encompasses all treatment and distribution process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the sensors, controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	The District has one centralized SCADA system to control their distribution system. Earthquakes commonly cause power outages due to damage to power lines, transformers, and generators which could disrupt SCADA functionality.
<input type="checkbox"/> Tornado	Click or tap here to enter text.

<p>Asset Category: <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i></p> <p>Examples of Assets in this Category: Encompasses all treatment and distribution process control systems, business enterprise information technology (IT) and communications systems (other than financial), and the processes used to secure such systems. Possible examples include the sensors, controls, monitors and other interfaces, plus related IT hardware and software and communications, used to control water collection, treatment, and distribution. Also includes IT hardware, software, and communications used in business enterprise operations. The assessment must account for the security of these systems (e.g., cybersecurity, information security).</p>	
<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Electronic, Computer, or Other Automated Systems (including the security of such systems)</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<input type="checkbox"/> Ice storm	Click or tap here to enter text.
<input type="checkbox"/> Fire	Click or tap here to enter text.
<input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.	Click or tap here to enter text.

Table 10b: The Operation and Maintenance of the System (Natural Hazards)

Asset Category: <i>The Operation and Maintenance of the System</i> Examples of Assets in this Category: Encompasses critical processes required for operation and maintenance of the water system that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outage), loss of suppliers (e.g., interruption in chemical delivery), and loss of key employees (e.g., disease outbreak or employee displacement).	
Natural Hazards Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.	Brief Description of Impacts If you select a natural hazard in the left column as a significant risk to the <i>Operation and Maintenance of the System</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.
<input type="checkbox"/> Hurricane	Click or tap here to enter text.
<input type="checkbox"/> Flood	Click or tap here to enter text.
<input checked="" type="checkbox"/> Earthquake	<p>An earthquake may cause structural damage to the administrative and operational buildings, which may then impact internal and external system communications. The District has a customer service center and a water operations center.</p> <p>The District receives its power supply from San Diego Gas & Electric (SDG&E). The District is subject to any associated earthquake impacts to SDG&E’s facilities in the District’s service area.</p>
<input type="checkbox"/> Tornado	Click or tap here to enter text.
<input type="checkbox"/> Ice storm	Click or tap here to enter text.

Asset Category: *The Operation and Maintenance of the System*
Examples of Assets in this Category: Encompasses critical processes required for operation and maintenance of the water system that are not captured under other asset categories. Possible examples include equipment, supplies, and key personnel. Assessments may focus on the risk to operations associated with dependency threats like loss of utilities (e.g., power outage), loss of suppliers (e.g., interruption in chemical delivery), and loss of key employees (e.g., disease outbreak or employee displacement).

<p>Natural Hazards</p> <p>Select the natural hazards in the left column that pose a <u>significant risk</u> to this asset category at the CWS.</p>	<p>Brief Description of Impacts</p> <p>If you select a natural hazard in the left column as a significant risk to the <i>Operation and Maintenance of the System</i> asset category, briefly describe in the right column how the natural hazard could impact this asset category at the CWS. Include effects on major assets, water service, and public health as applicable.</p>
<p><input type="checkbox"/> Fire</p>	<p>Click or tap here to enter text.</p>
<p><input type="checkbox"/> Other(s), enter below: Click or tap here to enter text.</p>	<p>Click or tap here to enter text.</p>



Table 11: Countermeasures (Optional)¹

<p>Countermeasures (optional) List countermeasures in the left column the CWS could potentially implement to reduce risk from the malevolent acts and natural hazards that were selected.</p>	<p>Brief Description of Risk Reduction or Increased Resilience For each countermeasure, in the right column, describe how the countermeasure could reduce risk or increase resilience for CWS assets from malevolent acts or natural hazards that were selected in the analysis. A countermeasure may reduce risk across multiple malevolent acts, natural hazards and asset categories.</p>
<p>1. Mitigate the threat of earthquakes to water system assets.</p>	<p>To mitigate the threat of earthquakes to District FCFs, reservoirs, storage tanks, distribution pipelines, booster pumps, emergency pumps, emergency connections, and other District buildings, the District should first consider conducting a complete structural assessment of the assets to seismically evaluate their performance if subjected to earthquakes of varying degrees. This evaluation can identify the “high risk” assets that should take priority for replacement or design retrofits in the future.</p>
<p>2. Operational Strategies to Improve Water System Resilience.</p>	<p>Given the District’s dependence on a wholesaler, improving reliability and redundancy can help strengthen preparedness and reduce response times in case of earthquake impacts to the Water Authority or MWD systems. The District could consider identifying interconnectivity strategies between nearby systems, such as City of Oceanside, Carlsbad Municipal Water District, and Vista Irrigation District to maximize reliability and resiliency. Although Water Authority supplies are considered reliable, improved interconnection with other systems could help address an earthquake event that may impact some or all District FCFs.</p> <p>Another strategy involves enhancing or establishing clear earthquake event communication protocols and documenting emergency equipment and other resources in advance. The District should also consider identifying and updating lists of priority water customers (e.g., hospitals, dialysis clinics, schools) to develop a plan to restore water service to those customers first. Back-up supplies of water (bulk water delivery or bottled water supplies) should also be considered and documented in the ERP.</p> <p>Because earthquakes will impact multiple utilities simultaneously, it is also recommended that the District establish coordination with SDG&E now to establish better communication and response times immediately after an earthquake. Sharing information with the power utility regarding critical asset locations could help facilitate faster power recovery to priority assets. Locations of back-up generators and fuel reserves should be updated regularly and included with the ERP.</p>

¹ IMPORTANT NOTE: The assessment does not require a specific number of countermeasures. You may have fewer than five countermeasures or add more countermeasures on a separate sheet.

Attachment B: Earthquake Incident Action Checklist



Incident Action Checklist – Earthquake

The actions in this checklist are divided up into three “rip & run” sections and are examples of activities that water and wastewater utilities can take to: prepare for, respond to and recover from an earthquake. For on-the-go convenience, you can also populate the “My Contacts” section with critical information that your utility may need during an incident.

Earthquake Impacts on Water and Wastewater Utilities

An earthquake is caused by the shifting of tectonic plates beneath the Earth’s surface. Ground shaking from moving geologic plates collapses buildings and bridges, and sometimes triggers landslides, avalanches, flash floods, fires and tsunamis. The strong ground motion of earthquakes has the potential to cause a great deal of damage to drinking water and wastewater utilities, particularly since most utility components are constructed from inflexible materials (e.g., concrete, metal pipes). Earthquakes create many cascading and secondary impacts that may include, but are not limited to:

- Structural damage to facility infrastructure and equipment
- Water tank damage or collapse
- Water source transmission line realignment or damage
- Damage to distribution lines due to shifting ground and soil liquefaction, resulting in potential water loss, water service interruptions, low pressure, contamination and sinkholes and/or large pools of water throughout the service area
- Loss of power and communication infrastructure
- Restricted access to facilities due to debris and damage to roadways



FEMA

The following sections outline actions water and wastewater utilities can take to prepare for, respond to and recover from an earthquake.

Example of Water Sector Impacts and Response to an Earthquake

East Bay Municipal Utility District Mitigates Earthquake Impacts

Following the 1989 Loma Prieta earthquake, the East Bay Municipal Utility District (EBMUD) in Oakland, California, began developing a comprehensive seismic program to increase their ability to recover from earthquake impacts and reduce water and wastewater service interruptions. Taking a proactive approach, EBMUD was the first US water utility to comprehensively retrofit its service area facilities to address seismic weaknesses.

The utility began by assessing its entire water distribution network to determine areas of improvement. Upgrades included installation of flexible joints and hoses to minimize pipe ruptures and to facilitate rerouting of water around broken pipes. The utility also created alternative transmission routes for pipes that cross fault zones.

EBMUD did a great deal of work to reinforce aqueducts to make them more resilient to earthquake impacts, including strengthening levees at aqueduct crossings and pipe foundations at river crossings, reinforcing pipe joints on buried portions of pipe, and strengthening pipe support structures on elevated portions of the aqueduct. The utility is also designing aqueduct interconnections to create bypasses around damaged segments after a levee failure or earthquake. These bypasses allow the utility to continue providing service to customers while permanent repairs are being made.

Since 1989, EBMUD has invested more than \$350 million in their seismic program, which has been primarily funded by bonds that are being repaid through a seismic surcharge on customers’ water bill of just over one dollar per month for single-family residential homes.

Source: EBMUD’s 2011 “Earthquake Readiness: Protecting Life Safety and Public Health.”



My Contacts and Resources



CONTACT NAME	UTILITY/ORGANIZATION NAME	PHONE NUMBER
	Local EMA	
	State EMA	
	State Primacy Agency	
	WARN Chair	
	Power Utility	

Planning

- Incident monitoring:
 - [USGS recent earthquake activity map](#) (U.S. Geological Survey [USGS])
 - [NOAA National Weather Service tsunami alerts](#) (National Oceanic and Atmospheric Administration [NOAA])
- [Earthquake Hazard Mitigation Handbook](#) (Federal Emergency Management Agency [FEMA])
- [Earthquake Hazards Program](#) (USGS)
- [Earthquake Shaking Maps and Information for California Residents](#) (Association of Bay Area Governments)
- [Recent Earthquakes: Implications for U.S. Water Utilities](#) (Water Research Foundation)
- [Planning for an Emergency Drinking Water Supply](#) (EPA)
- [All-Hazard Consequence Management Planning for the Water Sector](#) (Water Sector Emergency Response Critical Infrastructure Partnership Advisory Council [CIPAC] Workgroup)
- [Vulnerability Self Assessment Tool \(VSAT\)](#) (EPA)
- [Tabletop Exercise Tool for Water Systems: Emergency Preparedness, Response, and Climate Resiliency](#) (EPA)
- [How to Develop a Multi-Year Training and Exercise \(T&E\) Plan](#) (EPA)
- [Make a Plan](#) (FEMA)

Coordination

- [Water/Wastewater Agency Response Network \(WARN\)](#) (EPA)
- [Community Based Water Resiliency](#) (EPA)

Facility and Service Area

- [Oregon Earthquake Resiliency Plan](#) (see Chapter 8: Water and Wastewater Systems) (Oregon Seismic Safety Policy Advisory Commission)
- [Seismic Guidelines for Water Pipelines](#) (American Lifelines Alliance)

Power, Energy and Fuel

- [EPA Region 1 Water/Wastewater System Generator Preparedness Brochure](#) (EPA)

Documentation and Reporting

- [Federal Funding for Utilities In National Disasters \(Fed FUNDS\)](#) (EPA)

Mitigation

- [Earthquake Publications: Building Designers, Managers and Regulators](#) (FEMA)
- [IS-323: Earthquake Mitigation Basics for Mitigation Staff](#) (FEMA)
- [HAZUS: FEMA's Methodology for Estimating Potential Losses from Disasters](#) (FEMA)
- [Earthquake Hazard Mitigation for Utility Lifeline Systems](#) (FEMA)



Actions to Prepare for an Earthquake



Planning

- Review and update your utility's emergency response plan (ERP), and ensure all emergency contacts are current.
- Conduct briefings, training and exercises to ensure utility staff is aware of all preparedness, response and recovery procedures.
- Identify priority water customers (e.g., hospitals), obtain their contact information, map their locations and develop a plan to restore those customers first.
- Develop an emergency drinking water supply plan and establish contacts (potentially through your local emergency management agency [EMA] or mutual aid network) to discuss procedures, which may include bulk water hauling, mobile treatment units or temporary supply lines, as well as storage and distribution.
- Conduct a hazard vulnerability analysis in which you review historical records to understand the past frequency and intensity of earthquakes and how your utility may have been impacted. Consider taking actions to mitigate seismic impacts to the utility, including those provided in the "Actions to Recover from an Earthquake: Mitigation" section.
- Complete pre-disaster activities to help apply for federal disaster funding (e.g., contact state/local officials with connections to funding, set up a system to document damage and costs, take photographs of the facility for comparison to post-damage photographs).

Coordination

- Join your state's Water/Wastewater Agency Response Network (WARN) or other local mutual aid network.

- Coordinate with WARN members and other neighboring utilities to discuss:
 - Outlining response activities, roles and responsibilities and mutual aid procedures (e.g., how to request and offer assistance)
 - Conducting joint tabletop or full-scale exercises
 - Obtaining resources and assistance, such as equipment, personnel, technical support or water
 - Establishing interconnections between systems and agreements with necessary approvals to activate this alternate source. Equipment, pumping rates and demand on the water sources need to be considered and addressed in the design and operations
 - Establishing communication protocols and equipment to reduce misunderstandings during the incident
- Coordinate with other key response partners, such as your local EMA, to discuss:
 - How restoring system operations may have higher priority than establishing an alternative water source
 - Potential points of distribution for the delivery of emergency water supply (e.g., bottled water) to the public, as well as who is responsible for distributing the water
- Understand how the local and utility emergency operations center (EOC) will be activated and what your utility may be called on to do, as well as how local emergency responders and the local EOC can support your utility during a response. If your utility has assets outside of the county EMA's jurisdiction, consider coordination or preparedness efforts that should be done in those areas.
- Ensure credentials to allow access will be valid during an incident by checking with local law enforcement.

Actions to Prepare for an Earthquake *(continued)*



Communication with Customers _____

- Develop outreach materials to provide your customers with information they will need after an earthquake (e.g., clarification about water advisories, instructions for private well and septic system maintenance and information about earthquake mitigation).
- Review public information protocols with local EMA and public health/primacy agencies. These protocols should include developing water advisory messages (e.g., boil water) and distributing them to customers using appropriate mechanisms, such as reverse 911.

Facility and Service Area _____

- Inventory and order extra equipment and supplies, as needed:
 - Motors
 - Fuses
 - Chemicals (ensure at least a two week supply)
 - Cellular phones or other wireless communications device
 - Emergency Supplies
 - Tarps/tape/rope
 - Cots/blankets
 - First aid kits
 - Foul weather gear
 - Plywood
 - Flashlights/flares
 - Sandbags (often, sand must be ordered as well)
 - Bottled water
 - Batteries
 - Non-perishable food

- Ensure communication equipment (e.g., radios, satellite phones) works and is fully charged.
- Develop a GIS map of all system components and prepare a list of coordinates for each facility.
- Document pumping requirements and storage capabilities, as well as critical treatment components and parameters.
- Establish a seismically hardened or offsite facility to store essential records and equipment.
- Inspect utility for structural stability and consider implementing actions to improve the utility's ability to withstand damage from earthquakes, such as:
 - Secure fixtures, shelves and equipment
 - Anchor or stabilize utility equipment to withstand earthquake forces and movements
 - Reinforce, secure or improve utility transmission lines and connections to withstand earthquake forces, soil movements and differential settlements
 - Anchor or improve tank structures to withstand earthquake forces and movements

Personnel _____

- Identify essential personnel and ensure they are trained to perform critical duties in an emergency (and possibly without communication), including the shut down and start up of the system.
- Establish communication procedures with essential and non-essential personnel. Ensure all personnel are familiar with emergency evacuation and shelter in place procedures.
- Pre-identify emergency operations and clean-up crews. Establish alternative transportation strategies if roads are impassable.

Actions to Prepare for an Earthquake *(continued)*



- Consider how evacuations or limited staffing due to transportation issues (potentially all utility personnel) will impact your response procedures.
- Identify possible staging areas for mutual aid crews if needed in the response, and the availability of local facilities to house the crews.
- Encourage personnel, especially those that may be on duty for extended periods of time, to develop family emergency plans.

Power, Energy and Fuel

- Evaluate condition of electrical panels to accept generators; inspect connections and switches.
- Document power requirements of the facility; options for doing this may include:
 - Placing a request with the US Army Corps of Engineers 249th Engineer Battalion (Prime Power): <http://www.usace.army.mil/249thEngineerBattalion.aspx>
 - Using the US Army Corps of Engineers on-line Emergency Power Facility Assessment Tool (EPFAT): <http://epfat.swf.usace.army.mil/>

- Confirm and document generator connection type, capacity load and fuel consumption. Test regularly, exercise under load and service backup generators.
- Contact fuel vendors and inform them of estimated fuel volumes needed if utility is impacted. Determine your ability to establish emergency contract provisions with vendors and your ability to transport fuel if re-fueling contractors are not available. Develop a backup fueling plan and a prioritization list of which generators to fuel in case of a fuel shortage.
- Collaborate with your local power provider and EOC to ensure that your water utility is on the critical facilities list for priority electrical power restoration, generators and emergency fuel.



FEMA

Notes:

Actions to Respond to an Earthquake



Planning

- For coastal communities with an increased risk for tsunami activity following an earthquake; review the Tsunami Incident Action Checklist for more information.

Coordination

- Notify your local EMA and state regulatory/primacy agency of system status.
- If needed, request or offer assistance (e.g., water buffalos, water sampling teams, generators) through mutual aid networks, such as WARN.
- Assign a representative of the utility to the incident command post or the community's EOC.

Communication with Customers

- Notify customers of any water advisories and consider collaborating with local media (television, radio, newspaper, etc.) to distribute the message. If emergency water is being supplied, provide information on the distribution locations.

Facility and Service Area

Overall

- Conduct damage assessments of the utility to prioritize repairs and other actions.

- Check that back-up equipment and facility systems, such as controls and pumps, are in working order, and ensure that chemical containers and feeders are intact.

Drinking Water Utilities

- Inspect the utility and service area for damage. Identify facility components (e.g., valve boxes) and fire hydrants that have been buried, are inaccessible or have been destroyed.
- Investigate drinking water wells for damage caused by liquefaction. This could result in the loss of storage for groundwater or ground subsidence.
- Ensure pressure is maintained throughout the system and isolate those sections where it is not.
- Isolate and control leaks in water transmission and distribution piping.
- Turn off water meters at destroyed homes and buildings.
- Monitor water quality, develop a sampling plan and adjust treatment as necessary.
- Notify regulatory/primacy agency if operations and/or water quality or quantity are affected.
- Utilize pre-established emergency connections or setup temporary connections to nearby communities, as needed. Alternatively, implement plans to draw emergency water from pre-determined tanks or hydrants. Notify employees of the activated sites.

Notes:

Actions to Respond to an Earthquake *(continued)*



Wastewater Utilities

- Inspect the utility and service area, including lift stations, for damage, downed trees, and power availability. Inspect the sewer system for debris and assess the operational status of the mechanical bar screen. If necessary, run system in manual operation.
- Notify regulatory/primacy agency of any changes to the operations or required testing parameters.

Documentation and Reporting

- Document all damage assessments, mutual aid requests, emergency repair work, equipment used, purchases made, staff hours worked and contractors used during the response to assist in requesting reimbursement and applying for federal disaster funds. When possible, take photographs of damage at each work site (with time and date stamp). Proper documentation is critical to requesting reimbursement.
- Work with your local EMA on the required paperwork for public assistance requests.

Personnel

- Account for all personnel and provide emergency care, if needed. Caution personnel about known hazards resulting from earthquakes.
- Deploy emergency operations and clean-up crews (e.g., securing heavy equipment). Identify key access points and roads for employees to enter the utility and critical infrastructure; coordinate the need for debris clearance with local emergency management or prioritize it for employee operations.

Power, Energy and Fuel

- Use backup generators, as needed, to supply power to system components.
- Monitor and plan for additional fuel needs in advance; coordinate fuel deliveries to the generators.
- Maintain contact with electric provider for power outage duration estimates.

Notes:

Actions to Recover from an Earthquake



Coordination

- Continue work with response partners to obtain funding, equipment, etc.

Communication with Customers

- Assign a utility representative to continue to communicate with customers concerning a timeline for recovery and other pertinent information.

Facility and Service Area

- Complete damage assessments.
- Complete permanent repairs, replace depleted supplies and return to normal service.



FEMA

Documentation and Reporting

- Compile damage assessment forms and cost documentation into a single report to facilitate the sharing of information and the completion of state and federal funding applications. Visit EPA's web-based tool, Federal Funding for Utilities—Water/Wastewater—in National Disasters (Fed FUNDS), for tailored information and application forms for various federal disaster funding programs: <http://water.epa.gov/infrastructure/watersecurity/funding/fedfunds/>
- Develop a lessons learned document and/or an after action report to keep a record of your response activities. Update your vulnerability assessment, ERP and contingency plans.
- Revise budget and asset management plans to address increased costs from response-related activities.

Mitigation

- Identify mitigation and long-term adaptation measures that can prevent damage and increase utility resilience. Consider impacts related to earthquakes when planning for system upgrades (e.g., replacing pipes, wellheads and water tanks to address seismic weaknesses).

Notes:

Appendix E: Notices of Public Hearings

1. UWMP Notices
2. WSCP Notices

The notices for the public hearings will be added once they have been sent.



March 24, 2021

NOTICE OF PREPARATION FOR PUBLIC HEARING

RMWD'S 2020 Urban Water Management Plan & Water Shortage Contingency Plan

Ms. Helen Robbins-Meyer
Chief Administrative Officer
County of San Diego
5560 Overland Ave, Suite 130
San Diego, CA 92123

Via Email

Dear Ms. Meyer,

This letter is to inform you that Rainbow Municipal Water District (RMWD) is updating its Urban Water Management Plan (UWMP) and preparing a Water Shortage Contingency Plan (WSCP). The plans are updated every five years pursuant to California Water Code Section 10610-10610.4. The UWMP addresses water supply reliability and management by RMWD for at least the next 20 years, and the WSCP address RMWD's contingency plan for potential water shortages.

California Water Code Section 10621 requires urban water suppliers to notify the cities and counties within the supplier's water service area that the supplier will be reviewing the plans and considering amendments or changes through a public hearing process. RMWD will hold public hearings for the UWMP and WSCP within 60 days or more from the date of this letter. The two public hearings may occur on the same day. RMWD's Board must adopt the WSCP and the updated UWMP prior to RMWD's submittal of both plans to the California Department of Water Resources by the July 1, 2021 deadline.

In accordance with California Water Code, RMWD will make its 2020 UWMP and 2020 WSCP available for public review prior to holding the public hearings. Information on where to review the plans and the time and date for the public hearings will be communicated to the cities, county, and the public in future notices.

Please feel free to contact Malik Tamimi, Engineering Project Manager, at (760) 728-1178 x173 or mtamimi@rainbowmwd.com if you have any questions or would like additional information.

Sincerely,

Tom Kennedy
General Manager
Rainbow Municipal Water District

CC Chad Williams, RMWD Engineering and CIP Program Manager
Malik Tamimi, RMWD Engineering Project Manager
Cheryl Dilks, Brown and Caldwell



March 24, 2021

NOTICE OF PREPARATION FOR PUBLIC HEARING

RMWD'S 2020 Urban Water Management Plan & Water Shortage Contingency Plan

Mr. Tim Bombardier **Via Email**
Principal Water Resources Specialist
San Diego County Water Authority
4677 Overland Ave
San Diego, CA 92123

Dear Mr. Bombardier,

This letter is to inform you that Rainbow Municipal Water District (RMWD) is updating its Urban Water Management Plan (UWMP) and preparing a Water Shortage Contingency Plan (WSCP). The plans are updated every five years pursuant to California Water Code Section 10610-10610.4. The UWMP addresses water supply reliability and management by RMWD for at least the next 20 years, and the WSCP address RMWD's contingency plan for potential water shortages.

California Water Code Section 10621 requires urban water suppliers to notify the cities and counties within the supplier's water service area that the supplier will be reviewing the plans and considering amendments or changes through a public hearing process. RMWD will hold public hearings for the UWMP and WSCP within 60 days or more from the date of this letter. The two public hearings may occur on the same day. RMWD's Board must adopt the WSCP and the updated UWMP prior to RMWD's submittal of both plans to the California Department of Water Resources by the July 1, 2021 deadline.

In accordance with California Water Code, RMWD will make its 2020 UWMP and 2020 WSCP available for public review prior to holding the public hearings. Information on where to review the plans and the time and date for the public hearings will be communicated to the cities, county, and the public in future notices.

Please feel free to contact Malik Tamimi, Engineering Project Manager, at (760) 728-1178 x173 or mtamimi@rainbowmwd.com if you have any questions or would like additional information.

Sincerely,


Tom Kennedy
General Manager
Rainbow Municipal Water District

CC Chad Williams, RMWD Engineering and CIP Program Manager
Malik Tamimi, RMWD Engineering Project Manager
Cheryl Dilks, Brown and Caldwell



March 24, 2021

NOTICE OF PREPARATION FOR PUBLIC HEARING

RMWD’S 2020 Urban Water Management Plan & Water Shortage Contingency Plan

Mr. Jack Bebee **Via Email**
General Manager
Fallbrook Public Utility District
990 E. Mission Rd
Fallbrook, CA 92028

Dear Mr. Bebee,

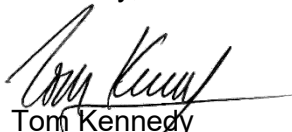
This letter is to inform you that Rainbow Municipal Water District (RMWD) is updating its Urban Water Management Plan (UWMP) and preparing a Water Shortage Contingency Plan (WSCP). The plans are updated every five years pursuant to California Water Code Section 10610-10610.4. The UWMP addresses water supply reliability and management by RMWD for at least the next 20 years, and the WSCP address RMWD’s contingency plan for potential water shortages.

California Water Code Section 10621 requires urban water suppliers to notify the cities and counties within the supplier’s water service area that the supplier will be reviewing the plans and considering amendments or changes through a public hearing process. RMWD will hold public hearings for the UWMP and WSCP within 60 days or more from the date of this letter. The two public hearings may occur on the same day. RMWD’s Board must adopt the WSCP and the updated UWMP prior to RMWD’s submittal of both plans to the California Department of Water Resources by the July 1, 2021 deadline.

In accordance with California Water Code, RMWD will make its 2020 UWMP and 2020 WSCP available for public review prior to holding the public hearings. Information on where to review the plans and the time and date for the public hearings will be communicated to the cities, county, and the public in future notices.

Please feel free to contact Malik Tamimi, Engineering Project Manager, at (760) 728-1178 x173 or mtamimi@rainbowmwd.com if you have any questions or would like additional information.

Sincerely,


Tom Kennedy
General Manager
Rainbow Municipal Water District

CC Chad Williams, RMWD Engineering and CIP Program Manager
Malik Tamimi, RMWD Engineering Project Manager
Cheryl Dilks, Brown and Caldwell



March 24, 2021

NOTICE OF PREPARATION FOR PUBLIC HEARING

RMWD'S 2020 Urban Water Management Plan & Water Shortage Contingency Plan

Ms. Deanna Lorson **Via Email**
City Manager
City of Oceanside
300 North Coast Hwy
Oceanside, CA 92054

Dear Ms. Lorson,

This letter is to inform you that Rainbow Municipal Water District (RMWD) is updating its Urban Water Management Plan (UWMP) and preparing a Water Shortage Contingency Plan (WSCP). The plans are updated every five years pursuant to California Water Code Section 10610-10610.4. The UWMP addresses water supply reliability and management by RMWD for at least the next 20 years, and the WSCP address RMWD's contingency plan for potential water shortages.

California Water Code Section 10621 requires urban water suppliers to notify the cities and counties within the supplier's water service area that the supplier will be reviewing the plans and considering amendments or changes through a public hearing process. RMWD will hold public hearings for the UWMP and WSCP within 60 days or more from the date of this letter. The two public hearings may occur on the same day. RMWD's Board must adopt the WSCP and the updated UWMP prior to RMWD's submittal of both plans to the California Department of Water Resources by the July 1, 2021 deadline.

In accordance with California Water Code, RMWD will make its 2020 UWMP and 2020 WSCP available for public review prior to holding the public hearings. Information on where to review the plans and the time and date for the public hearings will be communicated to the cities, county, and the public in future notices.

Please feel free to contact Malik Tamimi, Engineering Project Manager, at (760) 728-1178 x173 or mtamimi@rainbowmwd.com if you have any questions or would like additional information.

Sincerely,


Tom Kennedy
General Manager
Rainbow Municipal Water District

CC Chad Williams, RMWD Engineering and CIP Program Manager
Malik Tamimi, RMWD Engineering Project Manager
Cheryl Dilks, Brown and Caldwell

Appendix F: Adoption Resolutions

1. UWMP Adoption Resolution
2. WSCP Adoption Resolution

The adoption resolutions will be added once Board approval has been granted.

**MINUTES OF THE REGULAR BOARD MEETING
OF THE BOARD OF DIRECTORS OF THE
RAINBOW MUNICIPAL WATER DISTRICT
APRIL 27, 2021**

1. **CALL TO ORDER** - The Regular Meeting of the Board of Directors of the Rainbow Municipal Water District on April 27, 2021 was called to order by President Hamilton at 12:03 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. *(Due to COVID restrictions the meetings are being held virtually.)* President Hamilton presiding.

2. **ROLL CALL**

Present: Director Hamilton *(via video conference)*, Director Mack, Director Moss *(via video conference)*.

Absent: Director Gasca, Director Rindfleisch.

Also Present: General Manager Kennedy.

Also Present Via Teleconference or Video Conference:

Legal Counsel Smith, Executive Assistant Washburn, Finance Manager Largent, Human Resources Manager Harp, Information and Technology Specialist Espino.

No members of the public were present via teleconference or video conference before Closed Session.

3. **ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)**

There were no changes to the agenda.

4. **INSTRUCTIONS TO ALLOW PUBLIC COMMENT ON AGENDA ITEMS FROM THOSE ATTENDING THIS MEETING VIA TELECONFERENCE OR VIDEO CONFERENCE**

President Hamilton read aloud the instructions for those attending the meeting via teleconference or video conference.

5. **ORAL/WRITTEN COMMUNICATIONS FROM THE PUBLIC OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD REGARDING CLOSED SESSION AGENDA ITEMS (Government Code § 54954.2).**

There were no comments.

The meeting adjourned to Closed Session at 12:06 p.m.

(*) - Asterisk indicates a report is attached.

6. CLOSED SESSION

- A. Conference with Legal Counsel-Anticipated Litigation (Government Code §54956.9(d)(2))
 - * One Item
- B. Conference with Legal Counsel - Anticipated Initiation of Litigation (Government Code §54956.9(d)(4))
 - * One Item
- C. Conference with Labor Negotiators (Government Code §54957.6 and §54957)

Agency Designated Representatives

Tom Kennedy
Karleen Harp
Tracy Largent

Discussions regarding labor negotiations for:

Rainbow Employees Association
Rainbow Association of Supervisors and Confidential Employees
Rainbow Exempt Employees Association

The meeting reconvened at 1:27 p.m.

7. REPORT ON POTENTIAL ACTION FROM CLOSED SESSION

Time Certain: 1:00 p.m.

8. REPEAT CALL TO ORDER

The Regular Meeting of the Board of Directors of the Rainbow Municipal Water District on April 27, 2021 was called to order by President Hamilton at 1:30 p.m.in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. *(Due to COVID restrictions the meetings are being held virtually.)* President Hamilton presiding.

9. PLEDGE OF ALLEGIANCE

10. REPEAT ROLL CALL

Present: Director Gasca (via video conference), Director Hamilton (via video conference), Director Mack, Director Rindfleisch (via video conference), Director Moss (via video conference).

Also Present: General Manager Kennedy.

Also Present Via Teleconference or Video Conference:

Legal Counsel Smith, Executive Assistant Washburn, Engineering and CIP Program Manager Williams, Operations Manager Gutierrez, Finance Manager Largent, Human Resources Manager Harp, Associate Engineer

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Powers, Customer Service and Communications Supervisor Gray, Information and Technology Manager Khattab, Information and Technology Specialist Espino, Engineering Technician Rubio, Senior Accountant Rubio, Construction and Maintenance Supervisor Lagunas, Program Manager Tamimi, District Services Representative Holtz.

Thirteen members of the public were present for Open Session via teleconference or video conference.

11. REPEAT REPORT ON POTENTIAL ACTION FROM CLOSED SESSION

Legal Counsel reported the Board met in Closed Session to discuss three items noting there was no reportable action.

12. REPEAT ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)

There were no changes to the agenda.

13. REPEAT INSTRUCTIONS TO ALLOW PUBLIC COMMENT ON AGENDA ITEMS FROM THOSE ATTENDING THIS MEETING VIA TELECONFERENCE OR VIDEO CONFERENCE

President Hamilton read aloud the instructions for those attending via teleconference or video conference.

14. ORAL/WRITTEN COMMUNICATIONS FROM THE PUBLIC OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD REGARDING ITEMS NOT ON THIS AGENDA (Government Code § 54954.2).

Mr. Willis addressed the Board noting his interest in keeping in touch with several of the local agencies. He requested the RMWD Board Member contact information so he could reach out to them to get their feedback from time-to-time on issues that may arise. He thanked the Board for their time.

15. EMPLOYEE RECOGNITIONS

A. Michael Powers (5 Years)

Mr. Kennedy announced Michael Powers, RMWD's Associate Engineer, was celebrating five years with the District. He noted Mr. Powers has served as Acting District Engineer and has most recently done some great work in relation to both the CIP plan and PEIR. He congratulated Mr. Powers and stated he will be presented with a plaque and check as soon as possible.

Justin Demary (15 Years)

Mr. Kennedy announced Justin Demary, one of RMWD's most skilled heavy equipment operators, was celebrating fifteen years with the District. He congratulated Mr. Demary and stated he will be presented with a plaque and check as soon as possible.

(*) - Asterisk indicates a report is attached.

***16. APPROVAL OF MINUTES**

A. March 23, 2021 - Regular Board Meeting

Motion:

To approve the minutes.

Action: Approve, Moved by Director Mack, Seconded by Director Gasca.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch, Director Moss.

***17. BOARD OF DIRECTORS' COMMENTS/REPORTS**

Directors' comments are comments by Directors concerning District business, which may be of interest to the Board. This is placed on the agenda to enable individual Board members to convey information to the Board and to the public. There is to be no discussion or action taken by the Board of Directors unless the item is noticed as part of the meeting agenda.

A. President's Report (Director Hamilton)

President Hamilton reported he and Mr. Kennedy attended the retirement event for Paul Jones, the General Manager of Eastern Municipal Water District.

B. Representative Report (Appointed Representative)

1. SDCWA

A. Summary of Board Meeting - March 25, 2021

Mr. Kennedy stated in addition to the summary of the March Board meeting, there was a great deal of discussion regarding the interference by SDCWA lobbyists in the City of Oceanside's proxy selection process during that meeting. He summarized the discussions and actions that took place during the April Board meeting.

Director Gasca requested a copy of SDCWA's bylaws. Mr. Kennedy offered to provide the link to these published on their website.

Mr. Willis mentioned he has made inquiries as to SDCWA's mission statement which he could not find on their website.

Discussion went to Item #18.

2. CSDA

Discussion returned from Item #18.

Director Mack reported the Legislation Committee met for the second time to review some of the potential bills under consideration. He noted CSDA was seeking input from agencies related to the Clean Fleet Act in terms of whether agencies would be financially impacted. Mr. Kennedy explained this Act may not impact RMWD too heavily unless electric light duty vehicles become

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available. He pointed out should these become available, charging stations and other things would need to be put in place to keep the vehicles running in addition to the cost of the vehicles.

Director Mack stated the committee continued discussions regarding special assessments. He mentioned it was reported over the course of a few months, California would have a surplus of \$50 billion which was perceived to be good news and could possibly result in agencies receiving reimbursement for losses as well as potential opportunities for grants. Director Rindfleisch explained the state surplus came as a result of the new presidential administration's bailout for state and local governments to cover all the shortfall from lost tax revenue from having been shut down for twelve months.

Mr. Kennedy announced the May CSDA Quarterly Dinner meeting will be conducted virtually.

3. LAFCO

Mr. Kennedy reported LAFCO will meet on Monday at which time they will be considering the application for the Pardee annexation from Valley Center MWD to RMWD. He noted the detachment ad hoc committee meeting will meet on May 10th. Discussion ensued regarding the cause for delay in the detachment application process.

4. San Luis Rey Watershed Council

President Hamilton inquired as to whether there was an update regarding this Council being active. Mr. Kennedy replied that no updates were available as the organization is essentially defunct.

5. Santa Margarita River Watershed Watermaster Steering Committee

President Hamilton reported the committee met and received an update on MWD reservoir status and held a brief discussion regarding the conjunctive use project between FPU and Camp Pendleton. He reported the 50+ years of allegations over water rights in the Santa Margarita basin appeared to be headed toward conclusion. He noted the next meeting would be held in July.

6. ACWA

Director Gasca reminded the Board the 2021 Virtual Spring Conference would take place in May. He recommended those attending from RMWD should coordinate to avoid overlapping in the different presentations to ensure as much information is captured as possible. Director Mack pointed out there may JPIA meetings held prior to the start of the conference one of the registered Directors may want to attend.

C. Meeting, Workshop, Committee, Seminar, Etc. Reports by Directors (AB1234)

1. Board Seminar/Conference/Workshop Training Attendance Reports

Director Moss stated she attended the Council of Water Utilities meeting as part of the process of educating herself. Mr. Kennedy shared some of the information provided at that meeting.

D. Directors Comments

President Hamilton reminded the Board Members the required harassment was being provided by the District on Thursday, April 29, 2021.

(*) - Asterisk indicates a report is attached.

- E. Legal Counsel Comments
 - 1. Attorney Report: Brown Act and Employment Law

Legal Counsel summarized the information contained in his written report noting the third proposal in his written report related to modifications to the Brown Act requirements generated a great deal of opposition which he will continue to monitor in terms of how this will affect how agendas are prepared and conduct meetings in the future.

President Hamilton inquired as to those requirements provided in the third proposal would apply to all agencies according to their size and would funding be provided to support those smaller agencies. Legal Counsel stated as it was currently proposed it would apply to all agencies with a flat-out amendment to The Brown Act with unfunded state mandates. President Hamilton asked if this was back before the committee. Legal Counsel confirmed this was back in committee again and how this new amendment was still opposed.

Director Mack inquired about the 5% population requirements. Legal Counsel clarified this 5% requirement was part of the original Bill that has since been taken away. He noted the new version has been modified to include publishing the instructions in the agenda on the two most spoken languages other than English with other languages being made available upon request.

Discussion went to Item #19.

18. COMMITTEE REPORTS

- A. Budget and Finance Committee

Mr. Nelson reported the committee reviewed the budget plan, appointed Julie Johnson to serve as the Vice Chairperson, and were informed a detailed presentation on the rates for the upcoming fiscal year will be provided at the May committee meeting. He concluded with noting Items #24 and #25 before the Board today were reviewed and received a recommendation from the committee for Board approval.

- B. Communications and Customer Service Committee'

Mr. Shute reported the committee continued to receive updates on the WSUP program including the communications plan related to such in terms of the methods in which RMWD was reaching customers to ensure nobody was overlooked. He mentioned the committee also reviewed new language with regards to the importance of pressure regulators which has since been published on the District's website, received updates on the PSWAR program as well as the payment processor change, reviewed the strategic plan related to communications.

- C. Engineering and Operations Committee

Mr. Nelson reported the committee was briefed on four of the items before the Board today for consideration (Items #19, #20, #21, and #23). He noted the committee also received an update on the WSUP program.

Discussion went to Item #17.

(*) - Asterisk indicates a report is attached.

19. PRESENTATION PROVIDING AN UPDATE ON PREPARATION OF THE DISTRICT'S PROGRAMMATIC ENVIRONMENTAL IMPACT REPORT

Mr. Kennedy expressed how pleased and proud he was with the dedicated work on the part of both RMWD staff and the consultants preparing this report. He noted this was not customarily done but will be viewed as an excellent resource to the ratepayers for decades to come.

Mr. Williams mentioned the presentation being given to the Board today was shared with the Engineering and Operations Committee earlier this month. He noted minor modifications recommended by the committee have been incorporated into today's presentation. He introduced the Helix Environmental team.

Karl Osmundson of Helix Environmental gave a presentation on the PEIR as he summarized its contents, shared the findings and benefits to RMWD, as well as reviewed the list of next steps to be taken.

Mr. Kennedy noted staff will come back to the Board as part of the budget process to fund the last stage of this project.

Joanne Dramko of Helix Environmental noted the uniqueness of this project was Helix looked at all the RMWD pipelines more comprehensively.

Discussion ensued regarding potential savings to the District as well as the state and local approval process.

Director Gasca recommended a GANNT chart be prepared for the dates shown under the Next Steps slide to assist with gaining some type of perspective.

Discussion went to Item #20.

BOARD ACTION ITEMS

20. DISCUSSION AND POSSIBLE ACTION TO AUTHORIZE THE GENERAL MANAGER TO EXECUTE PURCHASE ORDERS FOR TWO EMERGENCY GENERATORS AND A SOLAR POWERED BATTERY BACKUP SYSTEM IN ORDER TO MEET THE DEADLINE FOR SPENDING THE \$300,000 COMMUNITY POWER RESILIENCY ALLOCATION

Mr. Williams explained RMWD recently coordinated with Hoch Consultant and was successful in obtaining a grant in the amount of \$300,000 with the caveat these funds monies be expended on or before October 31, 2021. He noted staff was asking the Board to authorize increasing the General Manager's spending authority on this particular item to \$300,000 to allow staff to procure the necessary equipment associated with the grant. He pointed out every cent will be tracked and how a monthly recurring update will be provided to the Board as money is expended.

President Hamilton asked if North County Fire would be sharing some of the cost. Mr. Kennedy explained North County Fire shares the tower at Sumac with RMWD and how they were helpful in being awarded the grant which would be the primary funding source.

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Mr. Williams pointed out the District is only required to have ownership of the equipment by the stipulated deadline. He confirmed RMWD was hard pressed to meet the deadline; however, staff was prepared to be proactive should the Board approve increasing the spending authority.

Motion:

To approve Option 1 – Make a finding that the purchase of the two generators and the solar powered system equipment does not constitute a “project” as defined by CEQA and authorize the General Manager to execute purchase orders for the two generators and solar powered system equipment for an amount up to \$300,000 in order to meet the CAL OES Grant deadline of October 31, 2021.

Action: Approve, Moved by Director Moss, Seconded by Director Mack.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch, Director Moss.

Mr. Kennedy sought Board input regarding potentially allocating funds from the recent MWD settlement to hire a grant writer for a period of two years. Director Mack agreed with this concept noting it could be advantageous to the District. Mr. Kennedy noted this may be something staff proposes as part of the budget review process.

Discussion went to Item #21.

21. **CONSIDER A CONSTRUCTION AGREEMENT WITH SANCON TECHNOLOGIES FOR THE NORTH RIVER ROAD SEWER MANHOLE REHABILITATION PROJECT IN THE AMOUNT OF \$373,233.50 AND AUTHORIZE THE GENERAL MANAGER TO SIGN ON BEHALF OF THE DISTRICT**

Mr. Kennedy explained this was the third phase of the North River Road rehabilitation.

Motion:

To approve Option 1 – Award the construction contract for the North River Road Phase III Sewer Manhole Rehabilitation Project to Sancon Technologies in accordance with the California Public Contracting Code for a not to exceed amount of \$373,233.50, make a finding that the project is Categorical Exempt from CEQA, and authorize the General Manager to execute a contract for the construction of the North River Road Phase III Sewer Manhole Rehabilitation Project to Sancon Technologies.

Action: Approve, Moved by Director Moss, Seconded by Director Hamilton.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch, Director Moss.

Discussion went to Item #22.

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***22. CONSIDER APPROVAL OF THE PARTICIPATION AGREEMENT FOR THE DESIGN, CONSTRUCTION AND FUNDING OF PORTIONS OF THE RICE CANYON PIPELINE AND RELATED FACILITIES**

Mr. Kennedy noted this matter was to bring the Rice Canyon Transmission Main Pipeline to the Tri Pointe development area. He pointed out this has already been cleared by CEQA as well as how the agreement has been reviewed staff and Legal Counsel.

Motion:

To approve Option 1 – Approve the Participation Agreement for the Design, Construction and Funding of Portions of the Rice Canyon Pipeline and Related Facilities and Authorize the General Manager to execute the Agreement on behalf of the District.

Action: Approve, Moved by Director Gasca, Seconded by Director Mack.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch, Director Moss.

Discussion went to Item #23.

23. DISCUSSION AND POSSIBLE ACTION RELATED TO DELAYED BACKFLOW ASSEMBLY TESTING

Mr. Kennedy gave a presentation entitled “Backflow Program Issues 2018-2019” noting this topic was brought to the District’s attention by a committee member which in turn launched an investigation. He explained some of the challenges experienced during this time period that have since been corrected.

Mr. Kennedy noted the issues associated with addressing the matter due to some customers being charged for services they did not receive and other customers who were not billed for services received. He mentioned some of the possible resolutions and solicited the Board for direction as to how to proceed.

Director Moss asked if those customers impacted have been identified as existing customers. Mr. Kennedy confirmed the dollar amount provided is for impacted existing customers only and excludes those who are no longer RMWD customers.

Discussion ensued.

President Hamilton suggested issuing a one-time credit to those existing customers impacted by this oversight. Director Gasca recommended keeping the two situations separated and address each independently. Discussion followed.

Director Gasca inquired as to whether those customers who received a service for which they paid should be billed. President Hamilton disagreed with billing these customers since this was a District error; however, staff should send a letter notifying those customers they will be billed for these services going forward.

Director Moss excused herself from the meeting at 3:30 p.m.

(*) - Asterisk indicates a report is attached.

Motion:

Staff draft a letter to be sent to the ratepayers who received services for which they were not billed notifying them they will now be charged for the service they will be receiving for the Communications and Customer Service Committee to review.

Action: Approve, Moved by Director Gasca, Seconded by Director Hamilton.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 4).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch.

Absent: Director Moss.

Discussion ensued regarding how to address those customers who paid for services for which they did not receive.

President Hamilton recommended any refund be limited to those customers impacted that are existing RMWD ratepayers.

Motion:

To approve issuing a one-time billing credit to existing customers who were billed for backflow services they did not receive.

Action: Approve, Moved by Director Hamilton, Seconded by Director Mack.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 4).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch.

Absent: Director Moss.

Discussion went to Item #24.

***24. DISCUSSION AND POSSIBLE ACTION TO APPROVE A VARIANCE FROM ORDINANCE 19-04 TO ALLOW A LOT, LARGER THAN 0.5 ACRES, TO QUALIFY FOR CAPACITY CLASS "A", APPROVE AN ADDITIONAL SERVICE CONNECTION ON ONE PARCEL, AND APPROVE THE NEW WATER SERVICE REQUEST (DIVISION 1)**

Ms. Largent explained this was a variance request both staff and the Budget and Finance Committee do not recommend for Board approval due to the fact this is a 10-acre parcel with two different renters. She stated RMWD was being asked to settle a contract dispute for the owner because the nursery is not paying their water bill. She noted the owner is concerned about what will happen once the shut-off moratorium is lifted in that should the water at the nursery be turned off, the renters could tap into the house water services.

Mr. Kennedy added this would not be the way to settle a problem that is not RMWD's to settle.

Ms. Largent mentioned since the variance was received, the autopay process has been implemented and payments are now being made regularly. Discussion ensued.

(*) - Asterisk indicates a report is attached.

Motion:

To adopt Option 2 – Deny the variance request and additional meter on parcel (staff recommendation).

Action: Approve, Moved by Director Mack, Seconded by Director Gasca.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 4).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch.

Absent: Director Moss.

***25. DISCUSSION AND POSSIBLE ACTION TO APPROVE A VARIANCE FROM ORDINANCE 19-04 TO ALLOW A LOT, LARGER THAN 0.5 ACRES, TO QUALIFY FOR CAPACITY CLASS “B” AND APPROVE THE CAPACITY CLASS WATER USE AGREEMENT (DIVISION 2)**

Ms. Largent explained this was a variance for a downsize to a 3/4” meter. She noted the 12-month rolling average is well below the required 50 units per month; therefore, staff recommends Board approval for the meter downsize.

Motion:

To approve Option 1 – Approve the variance to Ordinance 19-04 to allow a property larger than 0.5 acres to qualify for capacity class B and approve the New Water Service Agreement.

Action: Approve, Moved by Director Hamilton, Seconded by Director Mack.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 4).

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch.

Absent: Director Moss.

***26. DISCUSSION AND POSSIBLE ACTION TO ADOPT ORDINANCE NO. 21-01 AMENDING AND UPDATING ADMINISTRATIVE CODE SECTION 2.03.010 – REMUNERATION AND REIMBURSEMENT POLICY**

Mr. Kennedy expressed appreciation to Ms. Washburn for preparing the proposed revisions based on input received from the Board over the past several meetings. He solicited the Board for input to which the Board responded with no objections to the proposed revisions.

Motion:

To approve Option 1 - Adopt Ordinance No. 21-01 amending and updated Administrative Code Section 2.03.010 as presented.

Action: Approve, Moved by Director Rindfleisch, Seconded by Director Hamilton.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 4).

(*) - Asterisk indicates a report is attached.

Ayes: Director Gasca, Director Hamilton, Director Mack, Director Rindfleisch.

Absent: Director Moss.

27. BOARD MEMBER REQUESTS FOR AUTHORIZATION TO ATTEND UPCOMING MEETINGS / CONFERENCES / SEMINARS

Ms. Washburn announced many of the recurring conferences are now open for registration. She offered to send a list of the conferences to the Board for their reference.

BOARD INFORMATION ITEMS

28. POTENTIAL REOPENING OF THE DISTRICT AND CONTINUATION OF ZOOM MEETINGS

Mr. Kennedy explained the District was still waiting to hear from the State regarding their restrictions being lifted. He said the District may be ready to safely conduct in-person Board and committee meetings with individuals who have been vaccinated. He noted there were a great deal of other steps to be taken prior to completely opening the District to the public. He solicited the Board for input in terms of whether to continue with offering online participation in public meetings before proceeding with planning for hybrid meetings in the future.

Director Rindfleisch asked for clarification the Governor was going to require Board meetings have a Zoom option. Mr. Kennedy said he expects the Brown Act to allow for this; however, it is unclear whether this option will be mandated.

Legal Counsel added there were multiple bills currently under consideration; therefore, it was difficult to predict. He stated it appears allowing for participation via Zoom is favored.

President Hamilton agreed with providing attending via Zoom as an option.

Discussion ensued.

Director Gasca asked if there would be a requirement for employees to be vaccinated before returning to work in the office. He urged the District to think through how the process of reopening including how to legally address the matter in which someone (employees or members of the public) chooses not to be vaccinated. He wants to be sure RMWD has the rationale together. Mr. Kennedy said the District will follow the County Health Order restrictions until they are lifted.

Legal Counsel stated there was guidance from the Federal Government that agencies could make it mandatory for vaccinations; however, there had to be a number of exemptions which would require in interactive to accommodate those not vaccinated. Mr. Kennedy clarified there were no current plans to mandate vaccination.

Mr. Kennedy stated staff will start some planning work and bring something back this matter back to the Board. He also mentioned staff was currently preparing a remote work policy in hopes of being able to move forward corroboratively with staff to make sure the District's work is completed in a safe and efficient manner while retaining and recruiting the best employees possible.

(*) - Asterisk indicates a report is attached.

***29. RECEIVE AND FILE INFORMATION AND FINANCIAL ITEMS**

- A. General Manager Comments**
 - 1. Meetings, Conferences and Seminar Calendar
- B. Operations Comments**
 - 1. Operations Report
- C. Engineering Comments**
 - 1. Engineering Report
 - 2. As-Needed Services Expenditures Summary
 - 3. RMWD Sewer Equivalent Dwelling Units (EDU's) Status
- D. Human Resource & Safety Comments**
 - 1. Human Resources Report
- E. Finance Comments**
 - 1. Board Information Report
 - 2. Budget vs. Actuals
 - 3. Fund Balance & Developer Projections
 - 4. Treasury Report
 - 5. Five Year Water Purchases Demand Chart
 - 6. Water Sales Summary
 - 7. Check Register
 - 8. Directors' Expenses Report
 - 9. Credit Card Breakdown
 - 10. RMWD Properties

Mr. Kennedy noted without any objection, Ms. Washburn will send Mr. Willis the Directors' contact information. He also pointed out he sent out information regarding the recent main line break which has since been resolved including contact being made with all the customers involved.

Mr. Gutierrez reported the WSUP program was 50% complete. President Hamilton mentioned a customer requested 24-hour advance notice before water service is interrupted. Mr. Gutierrez stated this matter has been addressed.

The information and financial items were received and filed.

30. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT REGULAR BOARD MEETING

It was noted the initial budget review should be on the next agenda.

31. ADJOURNMENT

The meeting was adjourned by Director Hamilton to the April 27, 2021 Rainbow Public Facilities annual meeting.

The meeting was adjourned at 4:07 p.m.

Hayden Hamilton, Board President

Dawn M. Washburn, Board Secretary

(*) - Asterisk indicates a report is attached.

SUMMARY OF FORMAL BOARD OF DIRECTORS' MEETING
April 22, 2021

- 8.1 Partnership Opportunities for the Water Authority's Out-of-Region Groundwater supplies.
Authorize the General Manager to seek opportunities to leverage the Water Authority's water stored in Kern County, up to 16,117 acre-feet, so it may be used to assist during the State's drought.
- 8.1.1 MWD Delegates Report
The Board directed the MWD Delegates to request all education, outreach and lobbying consultant contracts including the names, costs, and scope of work from MWD. And specifically, to identify all consultants working in any capacity in San Diego County.
- 8.1.2 CLOSED SESSION
The Board approved a settlement of the Vallecitos litigation with the following material terms: 1) the Water Authority pays Vallecitos no money; 2) Vallecitos dismisses its lawsuit with prejudice, and each side releases the other for all areas in dispute; 3) the Water Authority does not seek to recover the money it spent on repair work to the Vallecitos delivery pipeline; 4) The Water Authority will be paid up to \$25,000 by Vallecitos to install a device by which Vallecitos can watch the desalinated water flow at their delivery point; 5) the Uniform Contract is amended to make clear that the water being delivered to Vallecitos is desalinated water (with certain exceptions); 6) the Water Authority will, over 10 years at its own timing, provide an additional 4,600 acre-feet of desalinated water at normal treated water rate+ transportation rate (subject to various reductions such as for plant shutdowns and lack of Vallecitos orders; and 6) there are certain infrastructure issues detailed by the staffs of both agencies.
- 8.2 Adopt positions on various bills.
The Board adopted the following positions: Oppose on AB 377 (Rivas); Oppose on AB 1021 (Mayes); Support on AB 1061 (Lee); Support on AB 1403 (Levine); and Oppose on SB 526 (Min).
- 8.3 Monthly Treasurer's Report on Investments and Cash Flow.
The Board noted and filed the Treasurer's report.
- 8.4 Approve amendments to the consolidated Memorandum of Understanding with represented employees.
The Board adopted Resolution No. 2021-11, a resolution of the Board of Directors of the San Diego County Water Authority approving amendments to and extension of the consolidated memorandum of understanding with Teamsters Local 911 representing the Technical/ Support, Professional/Administrative, and Managerial/Supervisory bargaining units for the period from July 1, 2021, through June 30, 2023.
- 8.5 Approval of Minutes.
The Board approved the minutes the Formal Board of Directors' meeting of March 25, 2021.

8.6 Retirement of Director.

The Board adopted Resolution No. 2021-10 honoring David Barnum upon his retirement from the Board of Directors.



TO: Rainbow Municipal Water District
FROM: Alfred Smith
DATE: May 25, 2021
RE: Attorney Report: Brown Act and CEQA Update
150152-0005

I. INTRODUCTION.

This attorney report provides an update on two recent developments. First, local water districts have been amended out of AB 339, which would have required costly unfunded mandates under the Brown Act.

Second, a new CEQA decision provides protection to local agencies under the exhaustion of administrative remedies doctrine. In *Stop Syar Expansion v. County of Napa* (2021) 2021 WL 1596347, the First District Court of Appeal, in a partially-published opinion, held administrative exhaustion for the purposes of the California Environmental Quality Act (“CEQA”), is only satisfied where the plaintiff (1) complies with the procedural requirements of local law, including the Administrative Code of the local agency; and (2) specifically asserts the CEQA objections prior to the Board’s approval of the project.

II. BROWN ACT UPDATE.

On March 17, 2020, Governor Gavin Newsom issued Executive Order Number N-29-20, which suspended portions of the Brown Act limiting the use of teleconferencing for public meetings. For example, prior to the COVID-19 pandemic, the Brown Act required that all teleconference locations — i.e., the physical location that a board member calls in from — be identified on the agenda and open to the public. The Brown Act also required that, even if directors remotely attend the meeting, a majority of the Board members must be physically present within the District’s jurisdictional boundaries.

The Governor’s Executive Order will sunset when the pandemic ends. Looking forward to what provisions will govern virtual meetings post-pandemic, Cristina Garcia (D – Los Angeles) and Alex Lee (D – Fremont) jointly introduced AB 339. As originally introduced, AB 339 would require local agencies to continue providing the public with virtual access to board meetings, even if all of the board members attend in-person.

AB 339 originally mandated virtual access both by calling in and by Internet. AB

339 further required that agencies provide closed captioning (on-screen text for those who cannot hear audio) for virtual participants. The instructions for virtual participation would have to be posted with the agenda. Agencies would also have to provide a place for the public to go to provide in-person comments — even in states of emergency.

Finally, AB 339 also proposed adding new provisions to the Brown Act requiring public agencies to provide live translation services during all meetings -- including real-time translators during all meetings and a translation of all agendas and meeting instructions into all languages spoken by 5 percent or more of the jurisdiction's population.

All of the mandates within AB 339 would have come without funding and would not have been eligible for reimbursement from the State of California. Moreover, none of the mandates would have applied to the State Legislature nor state agencies. CSDA, ACWA and multiple special districts throughout the State opposed AB 339.

At a recent legislative hearing, however, the California Assembly Local Government Committee substantially amended AB 339. The bill now applies only to cities and counties with populations of 250,000 or more. In addition, the scope of AB 339 was narrowed to simply require an option for the public to participate in meetings by either phone or internet.

III. CEQA UPDATE.

A. BACKGROUND.

In 2015, the Napa County Planning Commission certified an Environmental Impact Report pursuant to CEQA ("EIR"), thereby approving a project to expand an aggregate operation in Napa County ("Project"). The Project would expand a 497-acre quarry mining area in the hills near Napa State Hospital by 106 acres to remove basalt and other rocks. The Project would increase production from a million tons of rock annually to 1.3 million tons annually.

Project proponents stated that a bigger quarry is needed to keep providing basalt for the region's roads and other construction projects. Without the expansion, the quarry will run out of basalt to mine. Opponents challenged the expansion on a variety of issues, such as whether dust from quarry blasting contains health-damaging respirable crystalline silica. The opponents further argued that blasting in the expanded quarry would disturb users of the adjacent Skyline Wilderness Park.

A community group, Stop Syar Expansion ("SSE"), appealed the Planning Commission's actions to the Napa County Board of Supervisors ("Board"). After hearing the appeal, the Board rejected SSE's contentions, certified the EIR, and approved the Project with modifications.

SSE petitioned for a writ of mandate alleging the EIR was deficient in multiple distinct ways. The trial court denied the petition as to each alleged deficiency, including an express finding that SSE failed to exhaust administrative remedies. SSE filed an appeal.

B. COURT'S ANALYSIS.

In an 86 page decision, the Court of Appeal ruled in favor of the County of Napa, affirming the trial court's findings on five alleged EIR deficiencies. The Court stated that the policy behind the administrative exhaustion requirement is to ensure the local public agency with presumed expertise has the "opportunity to receive and respond to articulated factual issues and legal theories *before* its actions are subjected to judicial review," and thus has the "opportunity to act and to render litigation unnecessary." (Quoting from *North Coast Rivers Alliance v. Marin Municipal Water District Board of Directors* (2013) 216 Cal.App.4th 614, 623). Exhaustion is a jurisdictional prerequisite, not a matter of judicial discretion, and presents a question of law reviewed *de novo* by appellate courts.

To serve the exhaustion doctrine's purposes, the objections presented to the administrative tribunal must be sufficiently specific to allow the agency the opportunity to evaluate them and respond. Relatively bland and general references, or isolated and unelaborated comments, do not suffice. Rather, the "exact issue" must be presented to the agency, and requiring anything less would allow litigants "to narrow, obscure, or even omit their arguments before the final administrative authority because they could possibly obtain a more favorable decision from a trial court."

As confirmed by numerous cases, whether the common law exhaustion requirement has been satisfied in a given case depends on the particular procedures applicable to the public agency in question. Failure to properly raise issues in the manner required by the public agency's procedures constitutes a fatal failure to exhaust on those issues, thus precluding a subsequent court action raising them. Accordingly, to show that it exhausted its CEQA issues, plaintiff SSE was required to demonstrate *both* that it satisfied Public Resources Code section 21177 (by participating in the Planning Commission hearings during the public comment period or prior to issuance of the NOD), *and* that it fully exhausted the subsequent administrative appeal remedy to the Board as provided by the County's Code.

Further, to carry its burden to show exhaustion, it is insufficient to merely provide "string-cites" to the administrative record without explaining how each shows the agency was "fairly apprised" of the asserted CEQA noncompliance. A petitioner is required to show, with specificity, how it met exhaustion requirements.

Applying the foregoing principles, the Court of Appeal ruled that appellant SSE failed to exhaust its administrative remedies on numerous issues, including its challenges to: the EIR's use of a 5-year average/2009 actual production baseline;

alleged insufficient mitigation for oak removal/loss of carbon sequestration impacts; alleged deficient water use baseline and mitigation; and water quality impact analysis.

C. Conclusion.

Although several recent California appellate decisions have found against local agencies on the exhaustion of administrative remedies doctrine, this case provides a solid precedent for agencies facing CEQA lawsuits by plaintiffs who did not specifically assert each of their objections for consideration prior to Board approval. The decision also affirms that to properly demonstrate administrative exhaustion, the plaintiff must show compliance with the procedures set forth in CEQA and also the procedures applicable to the local agency in question.

AES

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

DISCUSSION AND POSSIBLE ACTION TO CHANGE PROPERTY AND LIABILITY COVERAGE LIMITS TO MITIGATE DRASTIC PREMIUM INCREASES

BACKGROUND

Special District Risk Management Authority (SDRMA) is a public joint powers insurance authority that provides risk management programs for over 628 individual member public agencies. Rainbow Municipal Water District has been a member participating in the worker's compensation, property, and liability insurance programs since 2005.

Before 2005, the District participated in the Association of California Water Agencies-Joint Powers Insurance Authority (ACWA-JPIA) programs for worker's compensation, property, and liability insurance. ACWA-JPIA declined to renew the District's coverage due to excessive liability claims and other factors, such as the age of the District's infrastructure, that made ACWA-JPIA assess the District as a poor risk to participate their member agency pool.

Significant Rate Increases for the Second Consecutive Year

Last year, SDRMA notified all of its member agencies that due to the catastrophic losses around the world, rates are impacted throughout the insurance markets. This, along with the overall member agency pool costs over the past few years, resulted in a member contribution rate increase of 40% for the 2020-21 plan year for the District.

On March 25, 2021 SDRMA issued rate indication letters for the 2021-22 plan year with another 40% increase. The deadline to submit a withdrawal notice to SDRMA was just six days later on April 1, 2021, which did not allow sufficient time to acquire competitive quotes and ask the Board to change carriers before the deadline.

On May 10, 2021, SDRMA issued a revised estimated contribution for the 2021-22 plan year that indicated a 72% increase in the District's premium, bringing it to an estimated \$700,037.63 if we maintain our current \$10 million in liability coverage limits. This is still just an estimate, and the actual amount will vary based on any coverage changes, operational changes, our 10-year loss ratio, and our Credit Incentive Points earned. This estimated rate increase will result in an approximate increase of \$294,850 in premium costs for the year.

DESCRIPTION

Staff has obtained rate indication letters for our current liability coverage limit of \$10 million per occurrence, as well as for a lower liability limit of \$5 million per occurrence. The rate increase could be mitigated from 72% to 19% with the lower liability limit. The estimated rate with \$5 million liability limit would be \$480,702.46, which would save \$219,335.17 in premiums compared to the \$10 million liability limit. This change would mean the District would be assuming an additional \$5 million in risk in the event of catastrophic claims.

The deadline to notify SDRMA of new liability limit selections is June 7, 2021.

Historical Claims Losses

Over the past 10 years, the District has incurred \$630,344 for 36 claims, which includes \$290,341 in reserves for seven open claims. Since 2005 when the District started with SDRMA, the District has incurred \$1,229,880 in claims costs for a total of 55 claims in the 16-year period. The most common claim type is general property damage (31% of claims), and the most expensive claim type has been bodily injury, which represented 33% of claims costs.

Attachments:

SDRMA Rate indication letter for \$10 million limit dated March 25, 2021

SDRMA Rate indication letter for \$10 million limit dated May 10, 2021

SDRMA Rate indication letter for \$5 million limit dated May 10, 2021

SDRMA Property/Liability 10 Year Claim Summary

SDRMA Certificate of Insurance

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area Four: Fiscal Responsibility

BOARD OPTIONS/FISCAL IMPACTS

OPTION 1: Direct staff to reduce the liability coverage limit from \$10 million to \$5 million per occurrence. The fiscal impact would be a reduction in the premium increase by approximately \$219,335 for the 2021-22 fiscal year, and a \$5 million increase in uninsured liability risk. The 2021-22 premium would be approximately \$480,702 for the 2021-22 fiscal year.

OPTION 2: Direct staff to maintain the liability coverage limit at \$10 million per occurrence. The fiscal impact would be an increase in property and liability premium expenses of 72%, for a total of approximately \$700,038 for the 2021-22 fiscal year.

ENVIRONMENTAL

In accordance with CEQA guidelines Section 15378, the action before the Board does not constitute a "project" as defined by CEQA and further environmental review is not required at this time.

STAFF RECOMMENDATION

Staff defers to the Board for direction.



Karleen Harp
Human Resources Manager

May 25, 2021



March 25, 2021

Ms. Karleen Harp
Human Resources Manager
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, California 92028

RE: 2021-22 Property/Liability Program Estimated Contribution

Dear Ms. Harp,

We sincerely appreciate your continued support of SDRMA and patience in waiting for the 2021-22 estimated renewal contribution while we are working on finalizing renewal costs from the program excess/reinsurer carriers.

As we mentioned at our 2021 Virtual Spring Education Day on March 3, the current insurance market continues to be impacted by the catastrophic losses around the world. Underwriting practices throughout the insurance market are consistently evolving due to the development of losses and cost of claims. Based on those factors and overall pool claims costs over the past several years, after considerable review and discussion with the SDRMA Board of Directors, staff has refined SDRMA underwriting methodologies for the 2021-22 renewal.

SDRMA will continue to make every effort to reduce operating costs and minimize rate increases while ensuring the financial integrity of the Property/Liability Program. We have received initial indications from our excess/reinsurer carriers of imposed rate increases that are impacting all of their clients, including SDRMA.

We are providing you with an estimated contribution amount for use in your budgeting process. Until the 2021-22 renewal invoices are issued, we cannot guarantee the final contribution amount. We will continue to work with our excess/reinsurers to negotiate the rate increases on behalf of our program membership. Your agency's actual renewal contribution will be confirmed on the 2021-22 renewal invoice that will be sent out in mid-May.

The actual contribution amount for 2021-22 will vary compared to 2020-21 due to rate increases, any coverage limit changes, stand-alone policy pricing, scheduled item additions/deletions, updates on agency operations submitted on the renewal questionnaire, risk factor adjustments, and Credit Incentive Program (CIP) points earned. Your agency's 2021-22 estimated contribution amount is as follows:

2020-21 Annual Contribution \$10M Liability Limits	2021-22 Estimated Annual Contribution \$10M Liability Limits
\$405,187.35	\$569,152.17

The SDRMA Property/Liability Program offers three liability limit options; \$2.5M, \$5M, or \$10M. Lowering liability limits could help lower your agency's annual contribution amount. Before considering lower liability limits, please verify that your agency is not bound by any contract or agreement to carry a specific level of liability limits. Please consult legal counsel and your governing body prior to changing the coverage limit. Liability limits cannot be changed after renewal on July 1.

Other Important Items to Note:

- If you would like to elect an alternative liability limit for 2021-22, please provide your selected limit by **May 15, 2021** by emailing memberplus@sdrma.org.
- No Longevity Distribution is declared for the Property/Liability Program this year.
- Our Multi-Program Discount provides members a great opportunity to save money. Members receive an automatic multi-program discount of 5% per program (Property/Liability and Workers' Compensation) when they belong to both programs.
- Your annual contribution provides your agency with access to safety and loss prevention services, resources, and trainings that are provided at no additional cost, including Target Solutions, ergonomic assessments, discounted CSDA Conferences and trainings, free CSDA webinars, and safety DVDs.
- The 2021-22 estimated contribution range does not serve as a 'not to exceed' amount. Final reinsurance costs, and any policy adjustment made before or after July 1 may incur a change in premium.
- Members considering withdrawal from coverage with SDRMA for the 2021-22 program year are required to submit a "Notice of Intent to Withdraw" by **April 1** in accordance with SDRMA Bylaws and must have completed the initial three full program year commitment period.

On behalf of the Board of Directors and our entire risk management team, we thank you for your continued participation in our programs! If you have any questions, please contact Ellen Doughty, at edoughty@sdrma.org or 800.537.7790.

Sincerely,
Special District Risk Management Authority

A handwritten signature in blue ink that reads "Laura S. Gill".

Laura S. Gill
Chief Executive Officer



May 10, 2021

Ms. Karleen Harp
Human Resources Manager
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, California 92028

RE: 2021-22 Property/Liability Program Estimated Contribution - **Update**

Dear Ms. Harp,

Over the past several months, we have been working diligently with the SDRMA Property/Liability Program reinsurers in preparation for the 2021-22 renewal. At each renewal, our primary goal is to provide a consistent level of broad coverage and favorable rates, based on the present insurance market conditions.

On March 25, 2021 we issued an Indication Letter with an estimated 2021-22 renewal contribution for your agency. Since that letter was issued, the insurance market has continued to harden, and the estimated renewal costs have been revised, based on the reinsurer costs. Please login to MemberPlus to view the revised **2021-22 PL Indication** letter, under the NOTIFICATIONS dropdown, in the MEMBER LETTERS section.

As previously noted, final renewal costs will not be confirmed until the 2021-22 renewal invoices have been issued. Due to the evolving conditions of the current insurance market, obtaining final costs from the reinsurers is delayed. **We expect to issue renewal invoices at the end of May or early June.** We thank you for your patience as we continue to work with our excess/reinsures to negotiate the renewal rates on behalf of our program membership. SDRMA will continue to make every effort to reduce operating costs and minimize rate increases while ensuring the financial integrity of the Property/Liability Program.

Below we are providing you with a **revised** estimated contribution amount according to the most recent cost updates from the program reinsurers. The actual contribution amount for 2021-22 will vary compared to 2020-21 due to rate increases, any coverage limit changes, stand-alone policy pricing, scheduled item additions/deletions, updates on agency operations submitted on the renewal questionnaire, 10-year loss ratio, and Credit Incentive Program (CIP) points earned. Your agency's revised 2021-22 estimated contribution amount is as follows:

2020-21 Annual Contribution \$10M Liability Limits	2021-22 Estimated Annual Contribution \$10M Liability Limits
\$405,187.35	\$700,037.63

The SDRMA Property/Liability Program offers three liability limit options; \$2.5M, \$5M, or \$10M. **Lowering liability limits could help lower your agency's annual contribution amount.** Before considering lower liability limits, please verify that your agency is not bound by any contract or agreement to carry a specific level of liability limits. Please consult legal counsel and your governing body prior to changing the coverage limit. Liability limits cannot be changed after renewal on July 1.

Other Important Items to Note:

- If you would like to obtain a quote for an alternative liability limit, please send your request to memberplus@sdrma.org or call 800.537.7790.
- Alternative liability limits for 2021-22, must be chosen and confirmed by **June 7, 2021** via email to memberplus@sdrma.org.
- No Longevity Distribution is declared for the Property/Liability Program this year.
- Our Multi-Program Discount provides members a great opportunity to save money. Members receive an automatic multi-program discount of 5% per program (Property/Liability and Workers' Compensation) when they belong to both programs.
- Your annual contribution provides your agency with access to safety and loss prevention services, resources, and trainings that are provided at no additional cost, including Vector Solutions, ergonomic assessments, discounted CSDA Conferences and trainings, free CSDA webinars, and safety DVDs.
- The 2021-22 estimated contribution range does not serve as a 'not to exceed' amount. Final reinsurance costs, and any policy adjustment made before or after July 1 may incur a change in premium.

For additional information on the current insurance market, please refer to the Alliant Presentation ***State of the Insurance Market 2021***, available in MemberPlus as an attachment to this letter.

On behalf of the SDRMA Board of Directors and our entire risk management team, we thank you for your continued participation in our programs! If you have any questions or would like to request a printed copy of the Alliant presentation, please contact Ellen Doughty, at edoughty@sdrma.org or 800.537.7790.

Sincerely,
Special District Risk Management Authority

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Laura S. Gill
Chief Executive Officer



May 10, 2021

Ms. Karleen Harp
Human Resources Manager
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, California 92028

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2020-21 Annual Contribution \$10M Liability Limits	2021-22 Estimated Annual Contribution \$5M Liability Limits
\$405,187.35	\$480,702.46

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Sincerely,
Special District Risk Management Authority

A handwritten signature in blue ink that reads "Laura S. Gill". The signature is written in a cursive, flowing style.

Laura S. Gill
Chief Executive Officer

Special District Risk Management Authority



Property/Liability 10 Year Claim Summary

Rainbow Municipal Water District
Member Since - 04/13/2005
Member Type - Water
As of 04/30/2021

Coverage Period	Number of Claims			Total Claims Amount			Average Severity Comparison		
	Open	Closed	Total	Paid	Outstanding Reserve	Total Incurred	Member	Member Type	Pool
2020-21	3	0	3	\$25,911	\$101,000	\$126,911	\$42,304	\$30,730	\$17,500
2019-20	3	2	5	\$24,432	\$100,801	\$125,233	\$25,047	\$34,675	\$14,615
2018-19	1	1	2	\$14,226	\$88,540	\$102,766	\$51,383	\$41,274	\$19,009
2017-18	0	2	2	\$6,527	\$0	\$6,527	\$3,263	\$26,566	\$50,525
2016-17	0	2	2	\$2,237	\$0	\$2,237	\$1,118	\$25,421	\$31,185
2015-16	0	2	2	\$5,227	\$0	\$5,227	\$2,613	\$23,387	\$70,064
2014-15	0	1	1	\$43,406	\$0	\$43,406	\$43,406	\$19,265	\$74,913
2013-14	0	4	4	\$114,122	\$0	\$114,122	\$28,531	\$17,092	\$33,157
2012-13	0	8	8	\$58,690	\$0	\$58,690	\$7,336	\$15,446	\$25,844
2011-12	0	7	7	\$45,224	\$0	\$45,224	\$6,461	\$13,212	\$26,947
	7	29	36	\$340,003	\$290,341	\$630,344			

Claims by Claim Type

	Number of Claims				Total Claims Amount				Average Severity Comparison		
	Open	Closed	Total	%	Paid	Outstanding Reserve	Total Incurred	%	Member	Member Type	Pool
General Property Damage	0	11	11	31%	\$98,070	\$0	\$98,070	16%	\$8,915	\$41,148	\$30,631
General Bodily Injury	1	5	6	17%	\$105,939	\$100,000	\$205,939	33%	\$34,323	\$49,595	\$57,748
Employment Practices Liability	1	3	4	11%	\$60,093	\$88,540	\$148,633	24%	\$37,158	\$100,243	\$104,505
Auto Property Damage	1	4	5	14%	\$22,257	\$1,000	\$23,257	4%	\$4,651	\$3,253	\$2,967
Auto Bodily Injury	3	1	4	11%	\$10,199	\$100,801	\$111,000	18%	\$27,750	\$114,446	\$98,785
Auto Collision	1	4	5	14%	\$42,015	\$0	\$42,015	7%	\$8,403	\$3,604	\$4,588
Theft	0	1	1	3%	\$1,429	\$0	\$1,429	0%	\$1,429	\$8,671	\$8,996
	7	29	36		\$340,003	\$290,341	\$630,344				

Claim Status: C - Closed

O - Open R - Reopened

Special District Risk Management Authority



Property/Liability Claim Detail

Rainbow Municipal Water District As of 04/30/2021

Loss Date	Claim Number	Loss Category	Loss Type	Claim Status	Indemnity Paid	Indemnity Reserve	Expense Paid	Expense Reserve	Total Incurred
09/14/2005	506002498-0001	Auto Property Damage	Backing	C	\$3,500.00	\$0.00	\$125.00	\$0.00	\$3,625.00
10/31/2005	506002538-0001	Auto Property Damage	Rearend	C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2005-06	No. of Claims: 2				\$3,500.00	\$0.00	\$125.00	\$0.00	\$3,625.00
12/25/2006	607002929-0001	Auto Collision	Head On	C	\$15,593.58	\$0.00	\$150.00	\$0.00	\$15,743.58
01/14/2007	607003263-0001	General Property Damage	Dangerous Condition	C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
01/14/2007	607003264-0001	General Bodily Injury	Dangerous Condition	C	\$98,000.00	\$0.00	\$72,821.25	\$0.00	\$170,821.25
2006-07	No. of Claims: 3				\$113,593.58	\$0.00	\$72,971.25	\$0.00	\$186,564.83
09/25/2007	708003238-0001	General Property Damage	Water Damage	C	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
09/26/2007	708003178-0001	General Property Damage	Indemnification Claim	C	\$68,776.19	\$0.00	\$2,894.50	\$0.00	\$71,670.69
10/22/2007	708003216-0001	All Risk Perils	Fire - Accidental	C	\$87,249.84	\$0.00	\$0.00	\$0.00	\$87,249.84
03/28/2008	708003360-0001	Auto Property Damage	Failure To Yield	C	\$5,447.30	\$0.00	\$0.00	\$0.00	\$5,447.30
06/29/2008	708003475-0001	General Property Damage	Water Damage	C	\$119,126.54	\$0.00	\$0.00	\$0.00	\$119,126.54
2007-08	No. of Claims: 5				\$280,599.87	\$0.00	\$2,894.50	\$0.00	\$283,494.37
09/24/2008	809004713-0001	Errors and Omissions	Public Officials E & O	C	\$0.00	\$0.00	\$1,929.00	\$0.00	\$1,929.00
04/02/2009	809003736-0001	Auto Comprehensive	Hit By Flying/Moving Object,Deer	C	\$1,370.88	\$0.00	\$996.04	\$0.00	\$2,366.92
04/17/2009	809003747-0001	Auto Property Damage	Backing	C	\$1,363.69	\$0.00	\$0.00	\$0.00	\$1,363.69
2008-09	No. of Claims: 3				\$2,734.57	\$0.00	\$2,925.04	\$0.00	\$5,659.61
12/06/2009	910004021-0001	General Property Damage	Water Damage	C	\$97,000.00	\$0.00	\$4,386.88	\$0.00	\$101,386.88
12/06/2009	910004149-0001	General Property Damage	Water Damage	C	\$0.00	\$0.00	\$2,169.62	\$0.00	\$2,169.62
02/17/2010	910004067-0001	Auto Collision	Hit Parked Car	C	\$1,288.83	\$0.00	\$0.00	\$0.00	\$1,288.83
04/22/2010	910004190-0001	General Bodily Injury	Dangerous Condition	C	\$0.00	\$0.00	\$2,410.88	\$0.00	\$2,410.88
2009-10	No. of Claims: 4				\$98,288.83	\$0.00	\$8,967.38	\$0.00	\$107,256.21
12/28/2010	011004676-0001	General Property Damage	Water Damage	C	\$7,469.43	\$0.00	\$2,979.26	\$0.00	\$10,448.69
01/26/2011	011004705-0001	General Property Damage	Water Damage	C	\$1,633.94	\$0.00	\$854.34	\$0.00	\$2,488.28
2010-11	No. of Claims: 2				\$9,103.37	\$0.00	\$3,833.60	\$0.00	\$12,936.97
07/12/2011	112004857-0001	General Property Damage	Water Damage	C	\$2,395.00	\$0.00	\$1,596.10	\$0.00	\$3,991.10
07/12/2011	112004857-0002	General Property Damage	Water Damage	C	\$3,950.00	\$0.00	\$781.00	\$0.00	\$4,731.00
09/05/2011	112004910-0001	General Property Damage	Water Damage	C	\$11,910.40	\$0.00	\$4,018.05	\$0.00	\$15,928.45
11/17/2011	112005231-0001	General Bodily Injury	Dangerous Condition	C	\$0.00	\$0.00	\$1,801.70	\$0.00	\$1,801.70
03/13/2012	112005049-0001	Auto Collision	Intersection - Straight	C	\$5,335.67	\$0.00	\$0.00	\$0.00	\$5,335.67
03/18/2012	112005077-0001	General Property Damage	Water Damage	C	\$6,000.00	\$0.00	\$2,897.25	\$0.00	\$8,897.25
04/23/2012	112005085-0001	General Property Damage	Water Damage	C	\$0.00	\$0.00	\$4,538.65	\$0.00	\$4,538.65

Claim Status: C - Closed O - Open R - Reopened

Special District Risk Management Authority



Property/Liability Claim Detail

Rainbow Municipal Water District
As of 04/30/2021

Loss Date	Claim Number	Loss Category	Loss Type	Claim Status	Indemnity Paid	Indemnity Reserve	Expense Paid	Expense Reserve	Total Incurred	
2011-12		No. of Claims: 7				\$29,591.07	\$0.00	\$15,632.75	\$0.00	\$45,223.82
12/14/2012	213005297-0001	General Property Damage	Water Damage	C	\$30,934.90	\$0.00	\$3,169.25	\$0.00	\$34,104.15	
01/28/2013	213005368-0001	General Property Damage	Water Damage	C	\$350.00	\$0.00	\$1,821.42	\$0.00	\$2,171.42	
02/04/2013	213005355-0001	Auto Property Damage	Rearend	C	\$674.58	\$0.00	\$110.00	\$0.00	\$784.58	
03/04/2013	213005548-0001	General Bodily Injury	Dangerous Condition	C	\$0.00	\$0.00	\$9.60	\$0.00	\$9.60	
03/04/2013	213005548-0002	General Bodily Injury	Dangerous Condition	C	\$0.00	\$0.00	\$9.25	\$0.00	\$9.25	
03/07/2013	213005386-0001	General Property Damage	Water Damage	C	\$8,993.63	\$0.00	\$1,676.95	\$0.00	\$10,670.58	
05/08/2013	213005444-0001	General Property Damage	Water Damage	C	\$4,833.26	\$0.00	\$3,393.50	\$0.00	\$8,226.76	
05/10/2013	213005446-0001	Auto Collision	Hit By Other Car	C	\$2,603.90	\$0.00	\$110.00	\$0.00	\$2,713.90	
2012-13		No. of Claims: 8				\$48,390.27	\$0.00	\$10,299.97	\$0.00	\$58,690.24
07/25/2013	314005498-0001	General Property Damage	Water Damage	C	\$2,542.58	\$0.00	\$1,460.90	\$0.00	\$4,003.48	
09/15/2013	314005569-0001	General Bodily Injury	Rd.Dfect/Mnhole/Meter.Cvr	C	\$15,000.00	\$0.00	\$11,798.75	\$0.00	\$26,798.75	
09/15/2013	314005569-0002	Auto Property Damage	Manhole Cover	C	\$6,000.00	\$0.00	\$0.00	\$0.00	\$6,000.00	
05/20/2014	314005754-0001	General Bodily Injury	Dangerous Condition	C	\$0.00	\$0.00	\$77,319.82	\$0.00	\$77,319.82	
2013-14		No. of Claims: 4				\$23,542.58	\$0.00	\$90,579.47	\$0.00	\$114,122.05
06/15/2015	415006397-0001	Employment Practices Liability	Discrimination / Retaliation	C	\$36,954.00	\$0.00	\$6,452.35	\$0.00	\$43,406.35	
2014-15		No. of Claims: 1				\$36,954.00	\$0.00	\$6,452.35	\$0.00	\$43,406.35
07/20/2015	516006191-0001	Employment Practices Liability	Discrimination / Retaliation	C	\$0.00	\$0.00	\$3,560.50	\$0.00	\$3,560.50	
07/22/2015	516006315-0001	Employment Practices Liability	Discrimination / Retaliation	C	\$0.00	\$0.00	\$1,666.29	\$0.00	\$1,666.29	
2015-16		No. of Claims: 2				\$0.00	\$0.00	\$5,226.79	\$0.00	\$5,226.79
09/26/2016	617006675-0001	General Property Damage	Water Damage	C	\$0.00	\$0.00	\$807.55	\$0.00	\$807.55	
11/24/2016	617006776-0001	Theft	Theft	C	\$1,429.00	\$0.00	\$0.00	\$0.00	\$1,429.00	
2016-17		No. of Claims: 2				\$1,429.00	\$0.00	\$807.55	\$0.00	\$2,236.55
07/22/2017	718007073-0001	Auto Property Damage	Rearend	C	\$5,491.88	\$0.00	\$35.00	\$0.00	\$5,526.88	
07/22/2017	718007073-0002	Auto Bodily Injury	Rearend	C	\$1,000.00	\$0.00	\$0.00	\$0.00	\$1,000.00	
2017-18		No. of Claims: 2				\$6,491.88	\$0.00	\$35.00	\$0.00	\$6,526.88
01/12/2019	819007711-0001	Auto Collision	Hit Parked Car	C	\$2,661.38	\$0.00	\$105.00	\$0.00	\$2,766.38	
03/27/2019	819008481-0001	Employment Practices Liability	Wrongful Termination	O	\$0.00	\$50,000.00	\$11,459.95	\$38,540.05	\$100,000.00	
2018-19		No. of Claims: 2				\$2,661.38	\$50,000.00	\$11,564.95	\$38,540.05	\$102,766.38
10/08/2019	920008060-0002	Auto Property Damage	Intersection - Straight	C	\$6,875.30	\$0.00	\$0.00	\$0.00	\$6,875.30	

Claim Status: C - Closed O - Open R - Reopened

Special District Risk Management Authority



Property/Liability Claim Detail

Rainbow Municipal Water District
As of 04/30/2021

Loss Date	Claim Number	Loss Category	Loss Type	Claim Status	Indemnity Paid	Indemnity Reserve	Expense Paid	Expense Reserve	Total Incurred
10/08/2019	920008060-0003	Auto Bodily Injury	Right Turn	O	\$0.00	\$25,000.00	\$9,175.38	\$15,824.62	\$50,000.00
10/08/2019	920008060-0004	Auto Bodily Injury	Right Turn	O	\$0.00	\$5,000.00	\$11.85	\$4,988.15	\$10,000.00
10/08/2019	920008060-0005	Auto Bodily Injury	Right Turn	O	\$0.00	\$25,000.00	\$11.85	\$24,988.15	\$50,000.00
10/08/2019	920008060-0001	Auto Collision	Right Turn	C	\$7,758.98	\$0.00	\$599.00	\$0.00	\$8,357.98
2019-20	No. of Claims: 5				\$14,634.28	\$55,000.00	\$9,798.08	\$45,800.92	\$125,233.28
10/23/2020	021008590-0001	General Bodily Injury	Chemical Exposure	O	\$0.00	\$50,000.00	\$0.00	\$50,000.00	\$100,000.00
02/16/2021	021008645-0001	Auto Collision	Rearend	O	\$22,651.50	\$0.00	\$190.00	\$0.00	\$22,841.50
03/02/2021	021008692-0001	Auto Property Damage	Backing	O	\$3,014.87	\$1,000.00	\$55.00	\$0.00	\$4,069.87
2020-21	No. of Claims: 3				\$25,666.37	\$51,000.00	\$245.00	\$50,000.00	\$126,911.37
Reporting Years: 16	Total No. of Claims: 55		No. of Open Claims: 7		\$697,181.05	\$156,000.00	\$242,358.68	\$134,340.97	\$1,229,880.70

Claim Status: C - Closed

O - Open R - Reopened

MEMBER'S CERTIFICATE OF COVERAGE

Issue Date
7/1/2020

Provider Special District Risk Management Authority
1112 'I' Street, Suite 300
Sacramento, California 95814
800.537.7790 www.sdrma.org



Member **Rainbow Municipal Water District**
3707 Old Highway 395
Fallbrook, California 92028

Member Number: 7288

This is to certify that coverages listed below have been issued to the Member named above for the period indicated. This certificate is not an insurance policy or an agreement of coverage and does not amend, extend or alter the coverage afforded by the agreements listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the coverage described herein is subject to all the terms, exclusions, and conditions of the specific coverage document. This certificate of coverage evidences the limits of liability in effect at the inception of the agreements shown; limits shown may have been reduced by paid claims. This certificate is issued as a matter of information only and confers no rights upon the certificate holder.

Type of Coverage	Policy Number	Effective Date	Expiration Date	Limits
Property		7/1/2020	7/1/2021	Per Occurrence
Property				\$ 800,000,000
Boiler & Machinery				\$ 100,000,000
Pollution	PPC-SDRMA-202021			\$ 2,000,000
Cyber				Limits on File
Catastrophic Loss				\$ 800,000,000 Replacement cost for Scheduled Property
Mobile Equipment	LCA-SDRMA-202021	7/1/2020	7/1/2021	Per Occurrence
Mobile/Contractors Equipment				\$ 800,000,000 Actual cash value for Scheduled Property
General Liability	LCA-SDRMA-202021	7/1/2020	7/1/2021	Per Occurrence
Bodily Injury				\$ 10,000,000
Property Damage				\$ 10,000,000
Public Officials Personal				\$ 500,000
Employment Benefits				\$ 10,000,000
Employee/Public Officials E & O				\$ 10,000,000
Employment Practices Liability				\$ 10,000,000
Employee/Public Officials Dishonesty (Crime)	EDC-SDRMA-202021			\$ 1,000,000
Auto Liability	LCA-SDRMA-202021	7/1/2020	7/1/2021	Per Occurrence
Auto Bodily Injury				\$ 10,000,000
Auto Property Damage				\$ 10,000,000
Non-Owned Auto Bodily Injury				\$ 10,000,000
Non-Owned Auto Property Damage				\$ 10,000,000
Uninsured Motorist	UMI-SDRMA-202021			Limits on File
Auto Physical Damage	LCA-SDRMA-202021	7/1/2020	7/1/2021	Per Occurrence
Auto PD - Comp				Limits on File
Auto PD - Collision				Limits on File
High Dollar Vehicles				Limits on File
Trailer	LCA-SDRMA-202021	7/1/2020	7/1/2021	Per Occurrence
Trailer				Limits on File
Workers' Compensation	WCP-SDRMA-202021	7/1/2020	7/1/2021	Per Occurrence
Employers Liability				\$ 5,000,000
Workers' Compensation				Statutory

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

DISCUSSION AND POSSIBLE ACTION TO APPROVE A TWO-YEAR PROFESSIONAL SERVICES AGREEMENT FOR THE PROCUREMENT AND INSTALLATION OF SUPERVISORY CONTROL AND DATA ACQUISITION RELATED INSTRUMENTATION, RADIOS, SWITCHES, ENCLOSURES AND THE PROGRAMMING OF THIS EQUIPMENT

BACKGROUND

The District utilizes Supervisory Control and Data Acquisition (SCADA) to operate critical infrastructure throughout the District. SCADA allows staff to perform tasks such as opening and closing valves, adjusting pressure and flow, purchasing water from the wholesaler(s), moving water throughout the system, etc. Without SCADA, staff must travel to each location and make manual adjustments.

Parts of the District's SCADA system are outdated and are in need of upgrade. The older part of the system is more than twenty-years old. As electronic parts and equipment age more than twenty years, it gets more difficult to find replacement parts and consultants that know how to program and configure them. The cellnet radios that we have lose connectivity when the weather is cold or there is moisture in the air such as dew in the morning. The newer equipment being proposed operates better in all weather conditions.

When a portion of the system fails, the Operations Staff are required to deploy to the failed location and manually check parts of the system that are not reporting. Staff remains onsite until the issue has been resolved or is able to determine that new parts are needed. When staff cannot make the necessary repair(s) because parts have to be ordered, this further delays the repair process leaving the affected SCADA system off-line until the parts are received and installed. During this time, staff continue to make physical trips to the failed site and make manual changes as needed. This manual troubleshooting process can involve several hours of staff's time and can take them away from the project/task they were working on. Replacing the outdated equipment/technology with newer equipment, will greatly reduce the frequency and magnitude of SCADA issues.

To date, staff has been working on the required SCADA upgrades; however, they are often called off to assist on emergency situations and attend to higher priority failures within the system. As such, the SCADA upgrade project has not been completed and more and more portions are becoming outdated.

DESCRIPTION

This project is a multi-year project that includes a third party performing the necessary upgrades, including the installation of new radios, enclosures, switches and the programming of this equipment. Hiring a third party will expedite the installation and upgrades of the SCADA system, and free up our SCADA and Electrical technicians to focus on the maintenance and upkeep of the system as a whole.

The District issued an RFP to provide the necessary upgrades, including the installation of new radios, enclosures, switches, and the programming of this equipment on March 23, 2021 and the District received three proposals from Vertech, Freedom Automation, and SCADA Integration. Members of staff, a consultant and members of the Engineering and Operations Committee reviewed the proposals and evaluated them based on the executive summary, project description, ability to meet District schedule, identification of consultant, project organization and experience, past performance and cost/schedule control, firm's local experience, and Firm's Knowledge of the type of Equipment, System and Software used at the District. The evaluation determined that multiple firms complied with the District's requirements and were qualified to perform the SCADA services for the District. The proposals were discussed by the Engineering and Operations Committee, and it was decided that interviews of the proposers were necessary for the Committee to make a specific recommendation to the Board of Directors.

Interviews of the proposing firms were conducted on May 18, 2021. After interviewing two firms (Freedom Automation, Inc. and Vertech), the interview panel chose Freedom Automation, Inc. to execute this project.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area Two: Asset Management. By improving the quality of the District's SCADA network, Operations Staff will be able to have a robust system that has very little downtime. The SCADA and Electrical technicians will be able to focus solely on the upkeep and maintenance of the system, making sure failures are prevented before they occur.

ENVIRONMENTAL

The action before the Board qualifies for a Class 1 Categorical Exemption from the California Environmental Quality Act (CEQA) pursuant to Section 15301 of the 2020 CEQA Guidelines, in that the project involves a minor alteration of existing facilities involving negligible or no expansion of existing use.

BOARD OPTIONS/FISCAL IMPACTS

The District's Five-Year Water CIP Plan includes estimated future spending of \$420,000 for FY22/23 associated with the Water System Monitoring Program, project number 600019. The proposed fee for this work is \$348,000.00 with a proposed schedule of two (2) years. Failing to complete this work will leave the District vulnerable to costs and staff time associated with continued failures of outdated radios and SCADA equipment.

Option 1:

- Appropriate funding and award a Professional Services Agreement to Freedom Automation, Inc. for the procurement and installation of supervisory control and data acquisition related instrumentation, radios, switches, enclosures and the programming of this equipment not to exceed \$348,000.00.
- Make a finding that the project qualifies for Class 1 Categorical Exemption under CEQA.
- Authorize the General Manager to execute a contract for the procurement and installation of supervisory control and data acquisition related instrumentation, radios, switches, enclosures and the programming of this equipment with Freedom Automation, Inc.

Option 2:

- Provide other direction to staff.

STAFF RECOMMENDATION

Staff recommends Option 1.



Ahmed Khattab
Information Technology Manager

05/25/2021

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

DISCUSSION AND POSSIBLE ACTION TO APPROVE A LEASE AGREEMENT FOR THE SITE OF THE BONSCALL RESERVOIR

BACKGROUND

The Bonsall Reservoir has not been utilized as a part of the District's potable water distribution system for several years. It is located West of Old Highway 395; South of West Lilac, off Aqueduct Road on Via Urner Road. There are no plans to return the reservoir to service and doing so would require extensive rehabilitation and not provide any operational benefit. At the direction of the Board of Directors, staff has continued to evaluate the installation of a solar facility at the site. While this evaluation is still in progress, the site has been leased to agricultural tenants.

The Bonsall Reservoir site was most recently under a long-term lease to Mr. Don Dabbs, a nursery operator. The latest five-year extension of the lease for \$7,500 expired in 2020. An appraisal of the land conducted in 2019 found that the market rental rate for the land is estimated at \$1,683 per month. Mr. Don Dabbs has continued to use the site and is willing to continue his lease of the land at the market rental rate while the District continues the evaluation of alternative uses for the site, specifically the viability of installing a solar photovoltaic system at this location.

In discussions with SDG&E, service planners had indicated that they would not set a meter solely to provide a net metering option. Staff has repeatedly attempted to get a formal response in writing but to no avail. Based on this, Staff contacted Dr. Lon House of Water and Energy Consulting to further evaluate the Bonsall Reservoir site. Dr. House is currently assisting the Valley Center Municipal Water District with the implementation/installation of solar photovoltaic (SV) systems within their service area and provides water/energy consulting services in association with ACWA.

As the Board is aware, previous studies about solar at the Beck Reservoir were hampered by an assertion by SDG&E that the District would need to pay to upgrade their facilities in order to take the power. During preliminary discussions with Dr. House, he indicated that there are tariff structures that we could apply for that would remove this requirement. One in particular, the RES-BCT program would allow us to generate the power at one site and use it at another. The credit is lower than in a residential net metering arrangement but absent the cost of upgrading the electrical distribution system around Beck the ROI may work out better at Beck than at Bonsall.

The District is in the very early stages of meeting proposed State mandates to have an electrified fleet. The Beck reservoir location provides the opportunity to expand the SV system should the District need additional capacity to meet energy needs for an electrified fleet.

In the interim of determining the return on investment (ROI) for a SV system at any location, Staff recommends that a two (2) year lease be executed with Mr. Dabbs at the Bonsall Reservoir location. The site is unused by the District and this proposed lease agreement will generate revenue while Staff works

through the logistics of installing a SV system. Per the terms of the lease agreement, the lease may be terminated with written notice at any time.

The District has coordinated with Mr. Dabbs on a two (2) year lease agreement and Mr. Dabbs has paid in full for January 2021 through May 2021. At this time, the District has not cashed the check and will only do so if the Board approves the lease agreement.

Should the Board decide not to authorize the two (2) year lease, Staff will begin the Notice to Vacate process.

DESCRIPTION

The proposed lease agreement (Exhibit A) now includes updated language and the appraised market rental rate of \$1,683 per month. The initial term of the lease would commence on January 1, 2021 and continue for 24 months unless terminated sooner pursuant to other provisions of the lease. Upon entering the lease agreement, payment would be due for the period of time which has already past since the commencement of the initial term. The lease agreement also has provisions for a renewal term of 12 months or continuation of the lease on a month-to-month tenancy.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area Four: Fiscal Responsibility. Continuing to lease the Bonsall Reservoir site at the appraised value while the District continues to evaluate alternative uses for the site allows the District to continue to collect some revenue from the site and maintain options for future use of the site.

ENVIRONMENTAL

In accordance with CEQA guidelines Section 15378, the action before the Board does not constitute a “project” as defined by CEQA and further environmental review is not required at this time.

BOARD OPTIONS/FISCAL IMPACTS

The proposed lease agreement allows for the collection of \$1,683 per month for the lease of the Bonsall Reservoir Site.

- 1) Option 1:
 - Approve the proposed lease agreement.
 - Authorize the General Manager to execute the lease agreement of behalf of the District.
 - Make a determination that the action before the Board does not constitute a “project” as defined by CEQA.
- 2) Option 2:
 - Provide other direction to staff.

STAFF RECOMMENDATION

Staff recommends Option 1.



Chad Williams
Engineering and CIP Program
Manager

05/25/2021



LEASE AGREEMENT
CONTRACT AGREEMENT NO. [21-04]

This LEASE AGREEMENT (“Lease”) is made by and between RAINBOW MUNICIPAL WATER DISTRICT (“Landlord”), and Don Dabbs (“Tenant”), collectively referred to herein as “Parties.”

ARTICLE 1
LEASE OF SITE

1.1 Description of Site. Landlord is the owner of real property located at 32232 Aqueduct Rd., Bonsall, California, APN 127-071-05 which includes approximately 6.19 acres, and a small block building located at 32511 Aqueduct Rd., Bonsall California, APN 127-071-06 (“Site”).

1.2 Ingress and Egress. Landlord grants Tenant the non-exclusive right to ingress and egress to the Site.

1.3 Agreement to Lease. Subject to the terms and conditions provided herein, Landlord hereby leases to Tenant the Site, including the non-exclusive right to ingress and egress, for the purpose of growing, storage, and/or staging of commercial plants.

ARTICLE 2
TERM

2.1 Lease Term. The initial term of this Lease (“Initial Term”) shall commence on January 1, 2021 (the “Commencement Date”) and, unless terminated sooner pursuant to the provisions of this Lease, shall continue for a period of twenty-four (24) months.

2.2 Renewal Term. At the end of the Initial Term, Tenant shall have the first right of refusal to renegotiate this Lease for a Renewal Term not to exceed an additional twelve (12) months (“Renewal Term”). The Lease shall expire automatically unless Tenant serves written notice no less than six (6) months prior to the expiration of the Initial Term of its intent to renegotiate the Lease for a Renewal Term.

2.3 Holding Over. If Tenant remains in possession of the Site after the expiration or earlier termination of the Lease term, with Landlord’s consent, such possession shall be deemed to be a month-to-month tenancy, terminable on thirty (30) days’ written notice given by either party to the other, at the rental rate in effect at the date of such expiration or termination. All provisions of this Lease, except those pertaining to term, shall apply to the month-to-month tenancy.

**ARTICLE 3
RENT**

3.1 Rent. Tenant shall pay to Landlord, as rent for the Site, including the non-exclusive right to ingress and egress as described herein, the sum of one thousand six hundred eighty three dollars (\$1,683.00) per month. The parties hereby agree and acknowledge that the amount of rent is reasonable and consistent with the fair market value of the Site, escalated according to the Consumer Price Index from the market value determined by the appraisal report, entitled Appraisal of Agricultural Land Known as Bonsall Reservoir, dated July 18, 2019, attached hereto as Attachment A.

3.2 Timing and Location of Rent Payments. Rent shall be due and payable beginning on the Commencement Date of this Lease and on the first day of each month thereafter for the duration of this Lease, unless the date rent is due falls on a weekend or holiday, in which case rent will be due on the following business day. All rent shall be paid to Landlord at the address for notice stated herein, or at such other location as Landlord may designate in writing.

3.3 Partial Payments and Deductions. Rent payments shall be made without deduction, offset, prior notice or demand, except to the extent that rent may be prorated for a partial month as approved in writing by Landlord. Landlord has discretion to accept partial payments of rent; however, Landlord's acceptance of a partial payment of rent does not waive the terms of this Lease and all outstanding rent will remain due unless otherwise agreed to by Landlord in writing.

3.4 Late Rent and Dishonored Payments. The parties acknowledge that late payment by Tenant of rent or other sums due hereunder will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult to ascertain. Such costs include, but are not limited to, processing and accounting charges. If Landlord does not receive Tenant's rent payment within five (5) days of the due date, Landlord may collect a late fee of one hundred dollars (\$100.00). The parties further acknowledge that any returned checks or otherwise dishonored rent payments will result in additional costs to Landlord, including but not limited to bank charges and processing. If Tenant's rent payment is returned or otherwise dishonored, Landlord may collect a service charge of \$25 for the first payment that is dishonored, and up to \$35 for each additional payment. Any late fees or service charges due under this section shall be considered additional "rent." The parties hereby agree and acknowledge that such late fees and service charges represent a fair and reasonable estimate of the costs Landlord will incur by reason of late or dishonored payment by Tenant.

**ARTICLE 4
TAXES AND UTILITIES**

4.1 Personal Property Taxes. Tenant shall pay prior to delinquency all taxes, assessments, license fees, possessory interest taxes, and other charges levied and assessed against Tenant's trade fixtures, furnishings, equipment and other personal property located on the Site to the extent applicable. Whenever possible, Tenant shall cause personal property to be assessed and billed separately from the real property of Landlord.

4.2 Utilities. Tenant shall be responsible to secure all utilities required by Tenant for its use of the Site directly from the servicing utility. Landlord will cooperate with Tenant in Tenant's

efforts to obtain utilities from any location provided by Landlord or the servicing utility, including effectuating any easement or other instrument reasonably required by the utility company provided that such efforts do not pose any disruption to Landlord's operations, or place any financial obligation upon Landlord. If electricity is needed, Tenant shall, at its sole expense, install a separate electric meter and pay its electricity costs directly to the appropriate utility company.

4.3 Disruption of Utilities. If either party in any way disturbs, interrupts or interferes with the utility service of the other party, that party shall, at its sole expense, promptly provide for complete repair and restoration of the utility service.

4.4 Damages for Disruption of Utilities. Notwithstanding the foregoing Section 4.3, under no circumstances shall Landlord be liable to Tenant for any consequential, incidental, or any other damages caused by any lapse in Tenant's services due to a disturbance, interruption, or interference of utility service.

ARTICLE 5 USE

5.1 Tenant's Access. Tenant's use of and access to the Site, and that of its agents and guests, for the purpose of growing, storage and/or staging of commercial plants as set forth in the Operations described in Article 6, shall be restricted as follows:

(a) Unauthorized Persons. Tenant has the sole responsibility under this Lease to ensure that unauthorized persons do not enter the Site. Tenant shall be wholly responsible for any liabilities or damages caused by unauthorized persons entering the Site.

(b) Access for Oversight. Tenant shall notify Landlord if any government, licensing, permitting or oversight agency requests or demands access to the Site for inspections or other regulatory purposes. It shall be Tenant's responsibility to coordinate access with Landlord, to ensure that Landlord has a reasonable opportunity to accommodate any disruption caused by the access.

5.2 Landlord's Right of Entry. Landlord and Landlord's agents shall have the right to enter the Site at all reasonable times in order to inspect, maintain and repair the Site or any portion thereof, to post notices of non-responsibility, or to show the Site to prospective purchasers, tenants or lenders. Tenant hereby waives any claim for abatement of rent, for damages for any injury or inconvenience to or interference with Tenant's business, for any loss of occupancy or quiet enjoyment of the Site, and for any other loss occasioned by such entry by Landlord.

5.3 Suitability. By executing this Lease, Tenant acknowledges and represents as follows: (a) Tenant has inspected the Site, including the means of ingress and egress described herein; (b) Tenant accepts the Site and means of ingress and egress in the AS-IS condition existing as of the date of execution of this Lease; and (c) neither Landlord nor Landlord's agents have made any representation or warranty as to the suitability of the Site for any particular use.

5.4 Prohibited Uses.

(a) Insurance Requirements. Tenant shall not do or permit anything to be done in or about the Site which will increase the existing rate of insurance or cause the cancellation of any insurance policy covering the Site. Tenant shall not sell, use or maintain, or permit the sale, use or maintenance of, any articles in or about the Site which may be prohibited by a standard form policy of fire or liability insurance.

(b) Nuisance, Waste. Tenant shall not cause, maintain, commit or permit any nuisance in, on, or about the Site. Tenant shall not permit any waste in, on or about the Site.

(c) Compliance with Laws. Tenant shall not use the Site or permit anything to be done thereon which will in any way conflict with any applicable zoning ordinances, building regulations, or other municipal, county, state or federal laws, ordinances or regulations, now or hereafter enacted. During the Lease term, Tenant shall, at its sole cost, promptly comply with all such laws, ordinances and regulations and with the requirements of any board of fire underwriters or other similar body now or hereafter constituted. The judgment of any court of competent jurisdiction or the admission of Tenant in any action against Tenant (whether or not Landlord is a party to such action) that Tenant has violated any such law, ordinance or regulation shall be conclusive of that fact between Landlord and Tenant.

**ARTICLE 6
TENANT OPERATIONS**

6.1 Tools, Equipment, Machinery. Tenant, at its sole cost, expense and risk, may maintain on the Site such tools, equipment and machinery as necessary to perform the operations referred to in this Lease (collectively the "Equipment"), subject to the requirements set forth herein. Landlord shall have no risk of loss or liability related to any Tenant Equipment.

6.2 Future Modification. Tenant shall not materially modify the Site or its operations at the Site without first obtaining the prior written approval of Landlord.

6.3 Fencing, Site Plan. Landlord may require that Tenant provide a reasonably adequate fence around the Site, at Tenant's sole expense, designed to safely prevent Landlord's employees and visitors from entering the Site or disturbing the Equipment, to protect against hazards arising from Tenant's operations, and to prevent unauthorized access. Tenant shall provide its own locks on the gate and provide copies of the keys to the locks to Landlord. If Landlord requires fencing, then Tenant shall prepare and submit a proposed Site Plan for Landlord's written approval prior to any fencing being constructed on the Site. The proposed site plan will become final upon Landlord's written approval, which shall not be unreasonably withheld. The Site Plan shall be included as Attachment B to this Agreement.

6.4 Rock/Gravel Entry. Tenant shall provide Rock/Gravel Entry with Rumble plates.

6.5 Aesthetic Enhancements. Landlord may require, in its discretion, reasonable aesthetic enhancements related to Tenant's operations at any time during the term of this Lease. Tenant shall incorporate Landlord's reasonable requirements into the Site Plan and may deduct enhancement

expenditures from rent payments with prior written approval of Landlord. Landlord shall not compel Site modifications that are inconsistent with applicable law or ordinances.

6.6 Water. Tenant shall purchase any water necessary for its operations at the Site from Landlord.

6.7 Stormwater Compliance. Tenant shall be responsible for compliance with all federal, state and local stormwater laws and regulations, including but not limited to the preparation of an adequate Storm Water Pollution Prevention Plan for the Site. This includes any regulations promulgated by the San Diego Regional Water Quality Control Board Region 9 and or the State Water Resources Control Board.

6.8 Dust Control. Tenant shall be responsible for all dust control measures related to its operations at the Site, including but not limited to all dust control measures necessary to keep all dust confined within Tenant's working areas.

6.9 Permits and Regulatory Compliance. Tenant agrees to comply with all applicable governmental laws, rules, statutes, and regulations relating to its use of the Site. Tenant may not begin operations unless and until Tenant has received and demonstrated to Landlord's reasonable satisfaction, all necessary permits and licenses from the appropriate permitting or licensing agencies or other governmental authorities, including if applicable any emissions permit required by the San Diego Air Pollution Control District for the operation of back-up power generators. Tenant shall be solely responsible to establish, implement and maintain an effective Injury and Illness Prevention Program ("IIPP") in compliance with applicable law. Tenant shall obtain all necessary permits and licenses and begin operation no less than three (3) months from the date of Landlord's execution of this Lease, and Tenant's failure to do so within the required time period shall constitute nonperformance pursuant to Section 12.1 of this Lease.

6.10 Clean Site. Tenant shall clean the Site daily prior to leaving the Site. Tenant agrees to maintain the Site in a clean and neat manner.

6.11 Inspection. Landlord may inspect Tenant's Equipment and operations at any time for verification of compliance with the terms of the Lease.

6.12 Safety. Tenant shall be solely responsible for safety concerning its Equipment and operations on and off the Site. Landlord requires that Tenant take all reasonable safety and security measures in its operations, including adequate signage on Site for the safe entering and exiting of vehicles. Tenant shall incorporate reasonable Landlord requirements into the Site Plan. Any Landlord review or observation of Tenant's safety measures shall not reduce, limit or otherwise affect Tenant's sole responsibility for safety concerning its Equipment and operations at the Site.

6.13 Hazardous Materials. At no time shall Tenant store or use any hazardous material or substance, defined as such by any state, local or federal statute or regulation, on the Site or otherwise on Landlord's property in violation of applicable law or Landlord's policy. Tenant shall submit a list of all hazardous materials or substances used or stored on the Site, for approval of Landlord. Tenant shall cease to store or use any hazardous substance or material not approved by Landlord. Such approval shall be at the sole discretion of Landlord.

6.14 Generators. Tenant must obtain prior written approval from Landlord prior to operating any back-up power generators with attached manufacturer-installed fuel storage tanks in the event of an interruption in electrical service or as use as a power source for its operations. The self-contained back-up power generators and attached fuel storage tanks shall be immediately removed from the Site once regular electrical service is restored unless generators are used as power supply for Tenant's operations. Unless otherwise approved by Landlord in writing, Tenant shall be restricted to portable, gasoline-powered and diesel-powered generators only, described in Attachment B, and shall not refuel the generators on Landlord's property. Tenant shall not store any fuel at the Site other than that contained in the generator's attached manufacturer-installed tank, which in no event shall exceed fifty (50) gallons of gasoline fuel on Landlord's property at any time. Tenant shall not place more than one (1) such generator at the Site at any time, without prior written approval from Landlord.

ARTICLE 7 MAINTENANCE AND REPAIRS

7.1 Maintenance Obligations. Landlord shall not be obligated to incur any expense or responsibility of any kind in connection with the maintenance of the Site. Tenant expressly waives the benefits of any statute now or hereafter in effect which may otherwise afford Tenant the right to make repairs at Landlord's expense or to terminate this Lease because of Landlord's failure to keep the Site in a good, clean and safe condition. Tenant shall, at its sole cost, keep the Site, including any improvements located thereon, in good condition and repair in accordance with all applicable laws, ordinances, rules, orders and regulations of: (a) federal, state, county, municipal, and other governmental agencies having or claiming jurisdiction over the Site; (b) any insurance underwriting board or insurance inspection bureau having or claiming jurisdiction over the Site; and (c) all insurance companies insuring all or any part of the Site. Tenant shall promptly and diligently repair, restore and replace all or any part of the Site in order to comply with the maintenance obligations specified herein.

7.2 Restoration of Site. In the event of damage to or destruction of all or any part of the Site, whether or not such damage or destruction is covered by insurance required to be maintained under the terms of this Lease, Tenant shall reconstruct and repair the Site to a good, clean and safe condition as before such damage or destruction. Landlord shall not be obligated to furnish any services or facilities, or to perform any reconstruction, repairs or replacements, or to pay any costs thereof. No deprivation, impairment, or limitation of use resulting from any event or work contemplated by this Section shall entitle Tenant to any offset, abatement or reduction in rent or to any termination or extension of the Lease term. Landlord's prior approval is not required for Tenant's repairs under this Section.

7.3 Surrender. Upon the expiration or termination of this Lease, Tenant shall surrender the Site in a good, clean, and safe condition. Tenant, at its sole cost, shall repair any damage to the Site caused by or in connection with the removal of any personal property, business or trade fixtures, machinery, equipment, or alterations, improvements or additions which Tenant has the right to remove. Title to all improvements located on the Site shall be surrendered with the Site unless Landlord provides written consent for Tenant to remove.

ARTICLE 8 LIENS

8.1 Liens. Tenant shall keep the Site free from any liens or claims arising out of work performed, materials furnished or obligations incurred by Tenant in connection with any construction, maintenance, repair, restoration, replacement, improvement, addition, alteration or other work on or for the Site. Tenant shall indemnify, hold harmless and defend Landlord from all liability for such liens, including attorneys' fees and costs, arising from Tenant's use and occupancy of the Site. In the event that Tenant fails to cause any such lien to be released within twenty (20) days after imposition of the lien, Landlord shall have, in addition to all other remedies provided under Article 12 and by law, the right, but not the obligation, to cause the lien to be released by such means as it shall deem proper, including payment of the claim giving rise to such lien. All such sums paid and all expenses incurred by Landlord in connection therewith, including attorneys' fees and costs, shall be due and payable by Tenant upon demand, with interest at the then applicable maximum rate an individual is permitted by law to charge. Landlord shall have the right at all times to post and keep posted on the Site any notices permitted or required by law, or which Landlord shall deem proper, to protect Landlord and the Site, and any other party having an interest therein, from mechanics' and materialmen's liens.

ARTICLE 9 DEFENSE AND INDEMNITY

9.1 Indemnification. To the fullest extent permitted by law, Tenant shall indemnify, hold harmless and defend Landlord, its directors, officers, employees, agents and authorized volunteers (collectively referred to herein as "Indemnified Parties"), and each of them, from and against any and all claims, demands, causes of action, damages, penalties, judgments, awards, decrees, costs, expenses, attorneys' fees, losses or liabilities, of every kind or nature, including but not limited to personal injury, wrongful death, and property damage arising out of, related to or in connection with this Lease or Tenant's use and occupancy of the Site, and regardless of any negligence of Indemnified Parties except for the gross negligence or willful misconduct of Indemnified Parties.

9.2 Defense. Tenant shall defend, at its own cost, expense and risk, any and all suits, actions or proceedings of every kind that may be brought against Indemnified Parties within the scope of Tenant's obligation under this Lease. Landlord shall approve the selection of legal counsel to defend Indemnified Parties. Tenant shall not agree to any settlement which would require Indemnified Parties to pay money or perform some affirmative act without Landlord's prior written consent. Landlord may, in its sole discretion, defend any and all such aforesaid suits, actions or other proceedings and Tenant shall be responsible to reimburse Landlord for all costs of defense incurred including attorneys' fees, expert witness fees and reasonable costs.

9.3 No Limitation. Tenant's indemnification, defense and hold harmless obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Tenant under workers compensation acts, disability benefit acts, other employee acts or the insurance required by this Lease. Tenant's indemnification, defense and hold harmless obligation shall also not be restricted to insurance proceeds, if any, received by Indemnified Parties, or any of them.

9.4 Notification. Each party shall use reasonable efforts to notify the other party in writing of any such claim or loss within thirty (30) days of receipt of any such claim. Failure to give notice within said time period shall not, however, relieve the Tenant of its obligations under this section.

9.5 Survival. The indemnity, hold harmless and defense obligations under this Section will survive the termination of this Lease.

ARTICLE 10 INSURANCE

10.1 Insurance. Tenant, at its sole cost, shall procure and maintain at all times during the Lease term the following types of insurance:

(a) Tenant shall maintain "OCCURRENCE" form Commercial General Liability Insurance covering the Site and Tenant's operations in the amount of not less than one million dollars (\$1,000,000.00) combined single limit per occurrence for bodily injury, personal injury and property damaged suffered or alleged to be suffered by any person or persons whatsoever resulting directly or indirectly from any act or activities of Tenant, of any person acting for it or under its control or direction, or any person authorized by it to use the rented premises.

(b) Tenant shall maintain automobile liability insurance to cover all owner, non-owned and hired automobiles (any auto) with a liability limit of one million dollars (\$1,000,000.00) per "Occurrence."

(c) Tenant shall maintain commercial pollution/environmental coverage for any and all liability associated with any environmental assessment and/or environmental cleanup on the Site with a liability limit of at least one million dollars (\$1,000,000.00).

(d) Tenant and all sublessors shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the Workers' Compensation and Insurance Act, Division IV of the labor code of the State of California and any Acts amendatory thereof. Tenant shall provide employer's liability insurance with limits of no less than one million dollars (\$1,000,000.00) for each accident, one million dollars (\$1,000,000.00) disease policy limit, and one million dollars (\$1,000,000.00) disease for each employee.

10.2 Policy Requirements. All insurance required to be maintained or paid by Tenant hereunder: (a) shall name Landlord as an additional insured; (b) shall contain a standard waiver of subrogation endorsement, and a full replacement cost endorsement; (c) shall provide that no cancellation or reduction of coverage or other modification shall be effective until at least thirty (30) days after written notice to Landlord; (d) shall be written as primary policies, not contributing with and not in excess of coverage which the Landlord may carry; (e) shall be taken out with companies having a current rating of A+ Class XIII (Best's Insurance Guide) throughout the period for which said policy is written, and such companies shall be licensed to do business in the State of California; and (f) shall be satisfactory to Landlord in all other respects.

10.3 Proof of Insurance. Within ten (10) days after execution of this Lease and within thirty (30) days of Landlord's written request at any time thereafter, Tenant shall provide Landlord with certificates of insurance for the required policies for the above-specified types of insurance and all additional insured endorsements.

10.4 Notice of Changes in and Expiration of Coverage. If any of the required coverages under this Section are to be reduced, modified, or cancelled during the term of this Lease, Tenant shall provide Landlord written notice of the scheduled action at least thirty (30) days in advance of any such action. Where any coverage required by this Section is set to expire, Tenant shall deliver the renewal certificate(s) including all additional insured endorsements to Landlord at least ten (10) days prior to the expiration date.

ARTICLE 11 ASSIGNMENT AND SUBLETTING

11.1 Assignment. Tenant shall not assign, transfer, mortgage, or encumber this Lease or any interest therein (collectively "assign") without the prior written consent of Landlord.

11.2 Subleasing. Tenant shall not sublease without prior, written consent by Landlord.

11.3 No Release of Tenant. No consent by Landlord to any assignment or sublease shall relieve Tenant of any obligation to be performed by Tenant under this Lease, whether occurring before or after such consent, assignment or subletting. Tenant immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any subletting of all or any part of the Site, and Landlord, as assignee, may collect such rent and apply it toward Tenant's obligations under this Lease. Provided, however, that, until the occurrence of a default by Tenant, Tenant shall have the right to collect such rent. Landlord's consent to any assignment or subletting shall not relieve Tenant of the obligation to obtain Landlord's express written consent to any other assignment or subletting. Landlord's acceptance of rent from any other person shall not be deemed a waiver by Landlord of any provision of this Lease or a consent to any assignment, subletting or other transfer.

ARTICLE 12 DEFAULT AND REMEDIES

12.1 Default. Tenant's failure to timely perform any duty or obligation under this Lease, and failure to remedy such nonperformance following written notice and opportunity to cure where legally required, will result in default. The following will also result in default.

(a) Abandonment. Tenant's abandonment of the Site shall result in default.

(b) Expansion of Operations, Damage or Destruction. (1) If Tenant's operations or occupancy of the Site interferes with or limits future building alterations needed for the operation or the expansion of Landlord's operations, or (2) if the Site has been destroyed or damaged in such a way as to make repair or restoration of the Site infeasible while occupied by Tenant, Landlord may terminate this Lease by giving the Tenant one hundred eighty (180) days prior written notice.

(c) Interference. If Tenant's Equipment or operations interfere with Landlord's equipment or operations, whether or not located on the same property, and Tenant fails to cure said

interference within thirty (30) days of receipt of written notice of interference by Landlord (or, if a longer period of time is reasonably necessary, then such longer period of time provided that Tenant is diligently attempting to cure the interference).

12.2 Remedies. In the event of a default by Tenant, as described in Section 12.1, Landlord shall have the remedies specified herein. These remedies are not exclusive and are cumulative and in addition to any rights or remedies at law or in equity now or later allowed to Landlord.

(a) Continuation of Lease. Landlord may continue this Lease in full force and effect without terminating Tenant's right of possession, and Landlord shall have the right to collect rent and other monetary charges when due. Landlord may do all acts necessary to maintain or preserve the Site, as Landlord deems reasonable and necessary, including removal of personal property from the Site and storage of same in a public warehouse at the expense and risk of the owners thereof. Landlord shall have the right to enter the Site and re-let it, or any part thereof, to third parties for Tenant's account. Tenant shall be liable immediately to Landlord for all costs Landlord incurs in re-letting the Site. Re-letting can be for a period shorter or longer than the remaining term of this Lease and at such rent and upon such conditions as Landlord deems reasonable in its sole discretion. Any rent received by Landlord from such re-letting shall be applied to the payment of:

- (i) First, all costs incurred by Landlord in re-letting;
- (ii) Second, rent due and unpaid under this Lease, including late fees and service charges; and
- (iii) Third, future rent as it becomes due under this Lease.

Tenant shall pay to Landlord the rent due under this Lease on the dates the rent is due, less the rent Landlord receives from any re-letting. No act by Landlord permitted under this Section shall be deemed an election to terminate this Lease. Notwithstanding that Landlord fails to elect to terminate the Lease immediately after a default by Tenant, Landlord may in its sole discretion, at any time during the Lease term elect to terminate this Lease as a result of any prior default. After Tenant's default and for as long as Landlord does not terminate Tenant's right to possession of the Site, and if Tenant obtains Landlord's consent, Tenant shall have the right to assign or sublet its interest in this Lease, but Tenant shall not be released from liability hereunder.

(b) Termination of Lease. Landlord may in its sole discretion terminate Tenant's right to possession of the Site by any lawful means, at any time after a default by Tenant. On termination, Landlord has the right to recover from Tenant any unpaid rent, including late fees and service charges, which were owed at the time of such termination and up to the time Tenant relinquishes possession of the Site to Landlord, and any other amount, including court costs and lost rents resulting from an inability to re-let the Site during the remainder of the Lease term, necessary to compensate Landlord for all losses proximately caused by Tenant's default.

(c) Equipment after Termination. Any Equipment that Tenant does not remove within sixty (60) days after the termination of this Lease may be removed by Landlord and placed in storage at Tenant's expense. Landlord shall be entitled to reimbursement from Tenant for the actual costs of storage, or a fair market value equivalent if Equipment is stored on Landlord's property. If Tenant does not remove Equipment within one hundred twenty (120) days after termination of this

Lease, the Equipment shall be considered abandoned and Landlord may take ownership of, dispose, remove, discard, abandon, or dismantle the Equipment, at Landlord's sole discretion. Landlord shall be entitled to reimbursement from Tenant for any costs associated with removal or disposal of Equipment from the Site.

**ARTICLE 13
GENERAL PROVISIONS**

13.1 Notice. Notice to either party shall be personally delivered or sent by certified mail, postage prepaid, return receipt requested, addressed to the party to be notified at the address specified herein, or at such other address as such party may from time to time designate in writing. Notice shall be deemed delivered on the date of personal delivery or three (3) business days after deposit in the U.S. Mail, as the case may be.

Landlord's Address for Notice:

Tenant's Address for Notice:

Attention: Tom Kennedy
General Manager
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, CA 92028

Attention: Don Dabbs
1111 Poinsettia Avenue
Vista, CA 92081

13.2 Transfer of Landlord's Interest. In the event of a sale, assignment, exchange or other disposition (collectively, "transfer") of Landlord's interest in the Site, other than a transfer for security purposes only, Landlord shall be relieved of all obligations and liabilities accruing hereunder after said effective date, provided that any funds then in the hands of Landlord in which Tenant has an interest are delivered to the successor of Landlord. This Lease shall not be affected by any such transfer,. The obligations to be performed by Landlord under this Lease shall be binding on Landlord's successors and assigns only during their respective periods of ownership. If the whole or any part of the Site is taken pursuant to any eminent domain proceeding, Landlord shall be entitled to all amounts paid or payable as part of any condemnation settlement or award.

13.3 Headings. The captions and paragraph headings used in this Lease are inserted for convenience of reference only and are not intended to define, limit or affect the interpretation or construction of any term or provision hereof.

13.4 Entire Agreement. This Lease, together with all attachments hereto, constitutes the entire agreement between the parties with respect to the subject matter hereof, and all prior or contemporaneous agreements, understandings, representations and statements, oral or written, are superseded.

13.5 Attachments. All Attachments referred to herein are incorporated by reference.

13.6 Modification. No modification, amendment, discharge or change of this Lease shall be valid unless the same is in writing and signed by the party against whom the enforcement of such modification, amendment, discharge or change is sought.

13.7 Severability. If any term or provision of this Lease is determined by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Lease shall not be affected thereby, and each other term and provision of this Lease shall be valid and enforceable to the fullest extent permitted by law.

13.8 Costs of Suit; Attorneys' Fees. If either party brings any action for relief against the other, declaratory or otherwise, arising out of this Lease, including any suit by Landlord for the recovery of rent or possession of the Site, the losing party shall pay the prevailing party's reasonable attorneys' fees and court costs.

13.9 Binding Effect. Subject to the provisions of Article 11 restricting assignment or subletting by Tenant and subject to Section 13.2 regarding transfer of Landlord's interest, all the provisions of this Lease shall bind and inure to the benefit of the parties hereto and their respective heirs, legal representatives, successors and assigns.

13.10 Choice of Law. This Lease shall be governed, construed and enforced in accordance with the laws of the State of California. The proper jurisdiction, forum and venue for any claims, causes of action or other proceedings arising out of or relating to this Lease shall be in the state and federal courts located in the State of California, northern district of the County of San Diego. Landlord and Tenant agree not to bring any action or proceeding arising out of or relating to this Lease in any other jurisdiction, forum or venue.

13.11 Waiver. No covenant, term or condition or the breach thereof shall be deemed waived, except by written consent of the party against whom the waiver is claimed. Any waiver of the breach of any covenant, term or condition shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other covenant, term or condition. Acceptance by Landlord of any performance by Tenant after the time such performance is due shall not be deemed a waiver of any preceding breach by Tenant other than the failure of performance so accepted, regardless of Landlord's knowledge of such preceding breach at the time of acceptance. No delay or omission by either party in exercising any relief or power accruing upon non-compliance or failure of performance by the other party shall impair or be construed as a waiver thereof, unless an intention to waive is expressly set forth in a writing signed by the waiving party.

13.12 Corporate Authority. If Tenant is a corporation, each individual executing this Lease on behalf of said corporation represents and warrants that he is duly authorized to execute and deliver this Lease on behalf of said corporation in accordance with a duly adopted resolution of the Board of Directors or in accordance with the Bylaws of said corporation, and that this Lease is binding upon said corporation in accordance with its terms. If Tenant is a corporation, Tenant shall, within thirty (30) days after execution of this Lease, deliver to Landlord a certified copy of a resolution of the Board of Directors of said corporation authorizing or ratifying the execution of this Lease.

13.13 Force Majeure. If either party, except as otherwise herein specifically provided, shall be delayed or prevented from performing any act required hereunder, by reason of strikes, lock-outs, labor problems, inability to procure materials, fire, unusual weather conditions, failure of power or other utilities, applicable governmental laws or regulations (other than those reasonably foreseeable in connection with the uses contemplated by this Lease), riots, insurrection, war or other reason of a like

nature, not the fault of the party so delayed, then performance of such act shall be excused to the extent necessary as a result of such delay. The provisions of this Section shall not operate to excuse Tenant from the prompt payment of rent or other monetary payments required hereunder.

RAINBOW MUNICIPAL WATER DISTRICT

TENANT

Name: Tom Kennedy
Title: General Manager
Date: _____

Name: Don Dabbs
Title: President
Date: _____

ATTACHMENT A – Appraisal Report

LANDLORD:_____

TENANT:_____

**Appraisal of Agricultural Land known as
Bonsall Reservoir**

Old Highway 395/Via Urner Road
Bonsall, CA 92003
APN 127-071-05

Prepared For

Mr. Steve Strapac, PE, PLS
District Engineer
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, CA 92028

Date of Report: August 16, 2019

Date of Value: July 18, 2019



1938 Kellogg Avenue
Carlsbad, CA 92008
Phone: 760-444-6230
Fax: 760-444-6242
www.arensgroup.com

 **ARENS
GROUP, INC.**
Real Estate Appraisal and Consultation



August 16, 2019

Mr. Steve Strapac, PE, PLS
District Engineer
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, CA 92028

Property: Old Highway 395/Via Urner Road
Bonsall, CA 92003
APN: 127-071-05
Arens Group File No.: 19-158

Dear Mr. Strapac:

This Appraisal Report is provided based on your recent request. Its purpose is to estimate the market value of the subject property. The following conclusions are based on our investigation and examination of the property, data gathered by us, data provided by various parties, and on our experience and judgment as real estate appraisers.

The subject property is 6.19 acre (269,636 SF) site, a portion of which was formally used as a water reservoir. The reservoir was created by the now-defunct "Bonsall Mutual Water Corp.," which has folded into Rainbow Municipal Water District. The water reservoir has been abandoned and the site is currently leased by an adjacent plant nursery. They are using the former reservoir area to house plants.

The area of the site previously used for the water reservoir has been dug out and covered with plastic coating, as shown in the following photograph:



Despite this, the highest and best use of the site is for residential development. Thus, typical buyers would convert the site to residential use which would require significant grading work to level out the area formally used as a reservoir. Once level, the resulting pad would have excellent views in virtually all directions.

Appraisers contacted general contractor, Eric Kalabat to help obtain an approximate cost for this grading work. It was stipulated that the work should be done such that the dirt from the outer walls of the reservoir would be pushed into the center until it was basically a level pad. Further, no dirt is assumed to be needed to be imported or removed from this site.

In addition to estimating the value of the site, the client has requested an estimated market rental rate. The purpose of this appraisal is to estimate the market value and the market rental rate of the property to aid the client with in the decision making process. Based on the analysis that follows, the estimated market value of the fee simple¹ interest in the subject property, subject to the assumptions and limiting conditions, certifications, extraordinary assumptions and hypothetical conditions, if any, "as is" as of July 18, 2019, is:

\$154,000
(One Hundred Fifty Four Thousand Dollars)

¹ There is reportedly a lease in place; however, the client has requested a fee simple value.

The estimated exposure time for the subject property is five to nine months, which includes a typical escrow period.

Additionally, the subject's market rental rate is estimated at **\$1,683/month NNN**.

To the best of our knowledge, statements contained in this Appraisal Report are accurate; however, all conclusions are made subject to the Limiting Conditions and Assumptions. This Appraisal Report complies with the *Uniform Standards of Professional Appraisal Practice* (USPAP) adopted by the Appraisal Foundation, and Title XI of the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA)(12 U.S. C. 3331 et seq.).

Extraordinary Assumptions²

1. Direct access is not available to the subject from Old Highway 395 or Via Urner Road. Appraisers accessed the property from the east via Aqueduct Road. Though there were functional gravel roads to the property there was signage indicating this was private property. This analysis assumes that the subject has functional and legal access.
2. This analysis assumes that the costs for grading work and leveling out the area formally used as a reservoir are accurate.

Hypothetical Conditions³

1. None.⁴

This Appraisal Report is made for the sole and exclusive use of the appraisers' client. No third parties are authorized to rely on this report without the expressed written consent of the appraisers.

Enclosed is the Appraisal Report containing information on which the conclusions of value are based. This letter of transmittal is part of the Appraisal Report and is not intended to be separated from the report. Relevant documents and support information are in the Addenda.

² Extraordinary assumptions may have an impact on the assignment results.

³ Hypothetical Condition may impact assignment results.

⁴ The report contains an "as though grading work is complete" estimate of value which is hypothetical as the subject is not graded. Despite this, the "as is" value is not hypothetical.

Thank you for the opportunity of submitting this report.

Sincerely,

Scott B. Arens

Scott B. Arens, MAI, SRA Appraiser
CA Certificate No. AG003035
scott.arensgroup.com

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SUMMARY OF SALIENT FACTS AND CONCLUSIONS

Property Name	Bonsall Reservoir
Location	Old Highway 395/Via Urner Road Bonsall, CA 92003
APN	127-071-05
Property Type	Agricultural/residential land
Owner of Record	Rainbow Municipal Water District
Census Tract	188.03

ASSIGNMENT

Arens Group File No.	19-158-GV-SEH
Interest Appraised	Fee Simple Interest
Purpose of Appraisal	To estimate the market value and the market rental rate of the subject property
Intended Use	To be used by the client to help in the decision making process
Client	Rainbow Municipal Water District
Intended User	Rainbow Municipal Water District
Date of Report	August 16, 2019
Date of Inspection	July 18, 2019
Date of Value	July 18, 2019

SITE

Site Size (SF)	269,636 SF
Site Size (Acre)	6.19 acres
Zoning	A70: Limited Agricultural (county of San Diego)
Tax Rate	Not applicable
Fixed Taxes	Not applicable
Environmental Issues	None known

HIGHEST AND BEST USE	For immediate development
-----------------------------	---------------------------

VALUE CONCLUSION

Date of Value	July 18, 2019
Estimated "As Is" Value	\$404,000
Estimated Market Rental Rate	\$1,683/month

CERTIFICATION: SCOTT B. ARENS, MAI, SRA

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial and unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest in the property that is the subject of this report, and no personal interest with respect to the parties involved.
4. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results.
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
7. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.
8. The reported analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics & Standards of Professional Appraisal Practice of the Appraisal Institute.
9. I have personally inspected the property that is the subject of this report.
10. Susan Hardman provided significant professional assistance in the preparation of this Appraisal Report, including the identification of the appraisal problem, data collection, the inspection of the subject property, and researching and inspecting the comparables. She was involved in the analysis of the data and provided assistance in estimating the final value. Overall, she aided the appraiser in the entire appraisal process.
11. As of the date of this report, I have completed the requirements of the continuing education program for Designated Members of the Appraisal Institute.
12. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
13. The appraisal assignment was not based on a requested minimum valuation, a specific valuation, or the approval of a loan.
14. As of the date of this report, I have completed the Standards and Ethics Education Requirements for Designated Members of the Appraisal Institute.
15. I have not performed any services regarding the subject property within the prior three years of accepting this assignment, as an appraiser or in any other capacity.



Scott B. Arens, MAI, SRA
CA Certified General Real Estate Appraiser No. AG003035

ASSUMPTIONS AND LIMITING CONDITIONS

This appraisal is made using the following assumptions, except when noted otherwise:

1. That title is marketable and free and clear of all liens, encumbrances, encroachments, easements and restrictions and that the property is under responsible ownership and competent management and is available for its highest and best use.
2. There are no existing judgments or pending or threatened litigation that could affect its value.
3. There are no hidden or undisclosed conditions of the land or of the improvements that impact its value (e.g. contamination, asbestos, etc.).
4. The revenue stamps placed on any deed referenced to indicate the sale price are in correct and represent the actual dollar amount of the transaction.
5. The appraisal is based on the premise there is full compliance with all applicable federal, state, and local environmental regulations and laws. It also assumes full compliance with all applicable zoning, licensing, building, and use regulations/restrictions including fire, building, safety, earthquake, occupancy codes, etc.
6. That information provided by outside parties is accurate. Though data used was obtained from sources considered reliable, no responsibility for accuracy of such items can be assured.

This appraisal is subject to the following limiting conditions, except as otherwise noted in the report.

1. Appraisals are inherently subjective and represent our opinion of value of the property appraised.
2. The opinions expressed in this report apply only to the date of value stated. Appraisers assume no responsibility for economic or physical factors occurring later which affect these opinions and conclusions. Further, the right is reserved by appraisers to make adjustments to the analyses, opinions, and conclusions based on additional or more reliable data.
3. No changes in any federal, state or local laws, regulations or codes (including, without limitation, the internal revenue code) are anticipated.
4. No environmental impact studies were requested or made in conjunction with this appraisal and appraisers reserve the right to revise or rescind any of the value opinions based upon any subsequent environmental impact studies. If any environmental impact statement is required by law, the appraisal assumes that such statement will be favorable and will be approved by the appropriate regulatory bodies.
5. Unless otherwise agreed to in writing, appraisers are not required to provide testimony, respond to any subpoena or attend any court, governmental or

- other hearing with reference to the property without competitive compensation.
6. Appraisers have made no survey of the property and assume no responsibility in connection with such matters. Sketches, surveys and diagrams of the property included in this report are for illustrative purposes only and should not be considered to scale. The appraisal covers the property as described in this report, and the areas and dimensions set forth are assumed to be correct.
 7. No opinion is expressed as to the value of any subsurface oil, gas or mineral rights, if any, and appraisers have assumed that the property is not subject to surface entry for the exploration or removal of such materials, unless otherwise noted in our appraisal.
 8. Appraisers accept no responsibility for considerations requiring expertise in other fields. Such considerations include, but are not limited to, legal descriptions and other legal matters such as legal title, geologic considerations such as soils and seismic stability, and civil, mechanical, electrical, structural and other engineering and environmental matters.
 9. The Appraisal Report must be considered only in its entirety. No part of it may be utilized separately or out of context.
 10. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraisers, or any reference to the Appraisal Institute) shall be disseminated through advertising media, public relations media, news media or any other means of communication (including without limitation prospectuses, private offering memoranda and other offering material provided to prospective investors) without the prior written consent of the persons signing the report.
 11. Income and expense estimates are used only for the purpose of estimating value and do not constitute predictions of future operating results.
 12. If the property is subject to one or more leases, any estimate of residual value contained in the appraisal may be particularly affected by significant changes in the condition of the economy, of the real estate industry, or of the appraised property at the time these leases expire or otherwise terminate.
 13. The current purchasing power of the dollar is the basis for the value stated in our appraisal; appraisers have assumed that no extreme fluctuations in economic cycles will occur.
 14. The value found herein is subject to these and to any other assumptions or conditions set forth in the body of this report but which may have been omitted from this list of Assumptions and Limiting Conditions.
 15. The analyses contained in the report necessarily incorporate numerous estimates and assumptions regarding property performance, general and local business and economic conditions, the absence of material changes in the competitive environment and other matters. Some estimates or assumptions however inevitably will not materialize, and anticipated events and circumstances may occur; therefore, actual results achieved during the

- period covered by our analysis will vary from our estimates, and the variations may be material.
16. The American with Disabilities Act of 1990 (ADA) sets specific standards for handicapped access. Determination of compliance with these standards is beyond appraisal expertise and has not been attempted. Any improvements are assumed to be in full compliance.
 17. The Appraisal Report is prepared for the exclusive benefit of the client, its subsidiaries and/or affiliates. It may not be used or relied upon by any other party. All parties who use or rely upon any information in the report without our written consent do so at their own risk.
 18. No studies have been provided to appraisers indicating the presence or absence of hazardous materials on the subject property or in the improvements, and this valuation is predicated upon the assumption that the subject property is free and clear of any environmental hazards including, without limitation, hazardous wastes, toxic substances and mold. No representations or warranties are made regarding the environmental condition of the subject property and the person signing the report shall not be responsible for any such environmental conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because appraisers are not experts in the field of environmental conditions, the Appraisal Report cannot and should not be considered as an environmental assessment of the subject property.
 19. The person(s) signing the report may have reviewed available flood maps and may have noted in the Appraisal Report whether the subject is in an identified Special Flood Hazard Area. Appraisers are not qualified to detect such areas and therefore do not guarantee such determinations. The presence of flood plain areas and/or wetlands may affect the value of the property and the value conclusion is predicated on the assumption that wetlands are non-existent or minimal.
 20. Appraisers are not building or environmental inspectors and do not guarantee the subject property is free of defects or environmental problems. Mold may be present in the subject and a professional inspection is recommended.
 21. The Appraisal Report and its value conclusions assume the satisfactory completion of any construction, repairs or alterations in workmanlike manner.
 22. Arens Group, Inc is an independently owned and operated company, has prepared the appraisal for the specific purpose stated and for the specific client/user. Accordingly, the Appraisal Report is addressed to and shall be solely for the client's use and benefit unless appraisers provide prior written consent. Appraisers expressly reserve the unrestricted right to withhold our consent to your disclosure of the Appraisal Report (or any part thereof including, without limitation, conclusion of value and our identity), to any third parties without prior written consent of the appraisers. Stated again for

- clarification, unless our prior written consent is obtained, no third party may rely on the Appraisal Report (even if their reliance was foreseeable).
23. The conclusions of this report are estimates based on known current trends and reasonably foreseeable future occurrences. These estimates are based partly on property information, data obtained in public records, interviews, existing trends, buyer seller decision criteria in the current market, and research conducted by third parties, and such data are not always completely reliable. Appraisers are not responsible for these and other future occurrences that could have reasonably been foreseen on the effective date of this assignment. Furthermore, it is inevitable that some assumptions will not materialize and that unanticipated events may occur that will likely affect actual performance. While appraisers are of the opinion that our findings are reasonable and based on current market conditions, appraisers do not represent that these estimates will actually be achieved, as they are subject to considerable risk and uncertainty. Moreover, appraisers assume competent and effective management and marketing.
 24. Any prospective value estimates presented in this report are estimates and forecasts and are in subject to considerable risk and uncertainty. In addition to the contingencies noted in the preceding paragraph, several events may occur that could substantially alter the outcome of our estimates such as, but not limited to, changes in the economy, interest rates, and capitalization rates, behavior of consumers, investors and lenders, fire and other physical destruction, changes in the title or conveyances of easements and deed restrictions, etc.
 25. In the event of a claim against Arens Group, Inc. or its affiliates or their respective officers or employees or the appraisers in connection with or in any way relating to this report or this engagement, the maximum damages recoverable are the amount of money actually collected by Arens Group, Inc. or its affiliates for this report.

Extraordinary Assumptions⁵

1. Direct access is not available to the subject from Old Highway 395 or Via Urner Road. Appraisers accessed the property from the east via Aqueduct Road. Though there were functional gravel roads to the property there was signage indicating this was private property. This analysis assumes that the subject has functional and legal access.
2. This analysis assumes that the costs for grading work and leveling out the area formally used as a reservoir are accurate.

⁵ Extraordinary assumptions may have an impact on the assignment results.

Hypothetical Conditions⁶

1. None.⁷

⁶ Hypothetical Condition may impact assignment results.

⁷ The report contains an “as though grading work is complete” estimate of value which is hypothetical as the subject is not graded. Despite this, the “as is” value is not hypothetical.

SCOPE OF WORK

This Appraisal Report complies with the *Uniform Standards of Professional Appraisal Practice* (USPAP) adopted by the Appraisal Foundation and Title XI of the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA)(12 U.S. C. 3331 et seq.). The appraisers are competent to complete the assignment in accordance with the competency provision in the USPAP.

The subject property was inspected July 18, 2019 (the date of value) at which time the site was viewed and photographs were taken. The subject was inspected by Scott B. Arens, MAI, SRA. Appraisers contacted general contractor, Eric Kalabat, to estimate an approximate cost for the grading work.

Appraisers gathered current, relevant, data related to demographic, economic, governmental, and environmental forces. A visual observation of the market area or neighborhood was made including driving the adjacent roadways and major thoroughfares in the area, noting convenience to area shopping, retail, entertainment, employment, and major arterial roadways. The subject's current zoning information was obtained.

Searches were made for comparable transactions in the subject's and competing areas using various data sources, including MLS, CoStar, Loopnet, newspapers, public record, and broker surveys. Each property was analyzed to determine comparability and was confirmed by a principal (i.e., buyer, seller, agent, etc.), if possible. The subject was analyzed to determine its highest and best use.

Purpose of Assignment

The purpose of this appraisal is to estimate the market value and the market rental rate of the subject property.

Intended Use of Appraisal

This appraisal will be used to aid the client in the decision making process.

Client

Rainbow Municipal Water District

Intended User

Rainbow Municipal Water District

Property Rights Appraised

The property rights appraised in this analysis are fee simple⁸ interest.

Date of Report

August 16, 2019

Date of Value

July 18, 2019

Date of Inspection

July 18, 2019

Extraordinary Assumptions⁹

1. Direct access is not available to the subject from Old Highway 395 or Via Urner Road. Appraisers accessed the property from the east via Aqueduct Road. Though there were functional gravel roads to the property there was signage indicating this was private property. This analysis assumes that the subject has functional and legal access.
2. This analysis assumes that the costs for grading work and leveling out the area formally used as a reservoir are accurate.

Hypothetical Conditions¹⁰

4. None.¹¹

Valuation Methodology**As Though Grading Work is Complete**

The subject is first appraised “as though grading work is complete.” For this, all three traditional approaches to value are considered. They are the cost, sales comparison, and income approaches (refer to Addendum B: Glossary for

⁸ There is reportedly a lease in place; however, the client has requested a fee simple value.

⁹ Extraordinary assumptions may have an impact on the assignment results.

¹⁰ Hypothetical Condition may impact assignment results.

¹¹ The report contains an “as though grading work is complete” estimate of value which is hypothetical as the subject is not graded. Despite this, the “as is” value is not hypothetical.

definitions). As the subject property is vacant land, only the sales comparison approach is used in this report.

“As Is” Value

The “as is” estimate begins with the “as though grading work is complete” estimate and adjusts for the cost of grading the site.

Market Rental Rate

The market rental rate is estimated by capitalizing the estimated market value of the subject property.

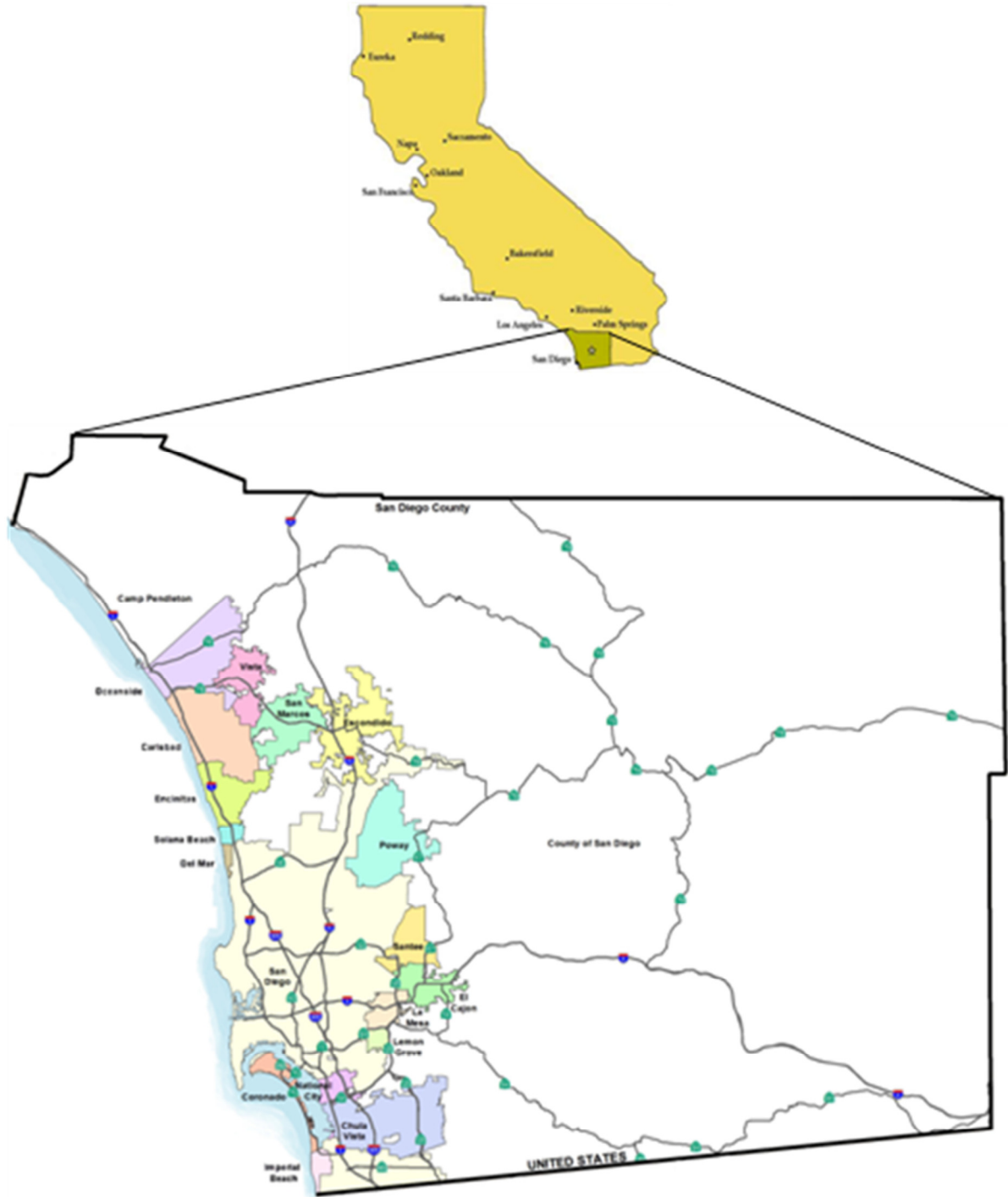
Personal Property, Fixtures and Intangible Items

This analysis does not consider any value associated with personal property, fixtures, equipment, or intangibles. This is an appraisal of the real estate only.

REGIONAL ANALYSIS

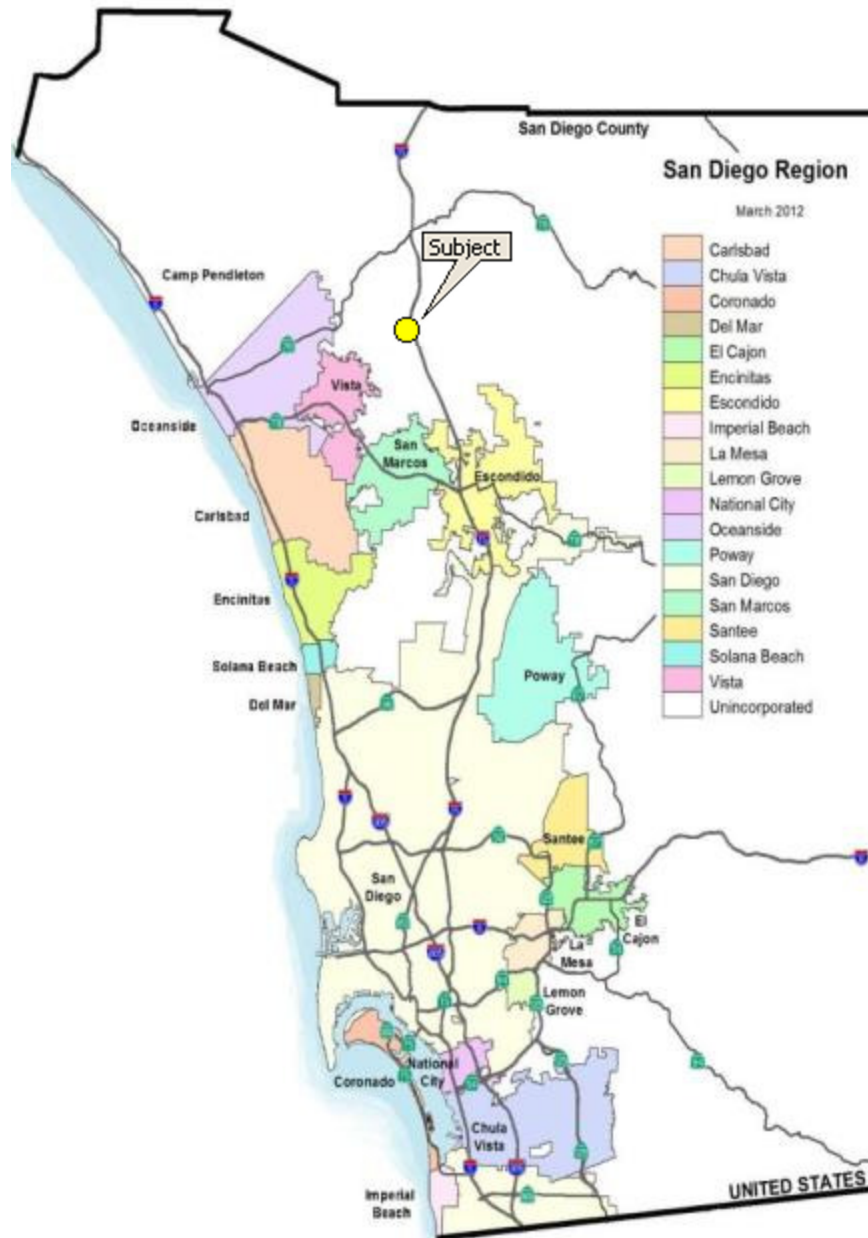
Location

San Diego County is in the southwestern corner of the state of California and the continental United States.



It is bounded by the Pacific Ocean to the west; Mexico to the south; Orange and Riverside counties to the north; and Imperial County to the east. It encompasses about 4,200 square miles and has 70 miles of coastline. The San Diego Metropolitan area is contained entirely within the county. In terms of land area, it is the 28th largest metropolitan area in the nation.

The San Diego Metropolitan Area comprises the city of San Diego and 17 other incorporated cities, as well as unincorporated territory. The following map illustrates:



Climate

San Diego is reputed to have the mildest climate within the continental United States. According to the National Weather Bureau, it is sunny approximately 70% of the year. The range between high and low daily temperatures averages approximately 10 degrees in summer and 16 degrees in winter. This mild and pleasant weather has always been a strong selling point for San Diego and will continue to be so in the future.

The county can be divided into three basic geographic climatic areas, all running north to south, roughly parallel to the coast. The coastal plain extends 20 to 25 miles inland and generally enjoys cooler summers and warmer winters. The middle section of foothills and mountains (with elevations as high as 6,500 feet) tends to have warmer summers and cooler winters. The third area, the desert, extends from the mountains into Imperial County and is usually warmer than the others year-round.

Transportation

Transportation in San Diego County is oriented toward the automobile. The freeway system is very good and congestion is not typically excessive (typical commute is less than 20 minutes from major population centers to employment centers).

Public transit in San Diego is adequate, though not ideal. Bus, train, and trolley systems run through all urbanized areas and some rural ones, but the system is far less extensive than it could be. Like the rest of Southern California, San Diegans rely heavily on their cars and will probably continue to do so in the future.

Population <http://www.dof.ca.gov/research/demographic/reports/estimates/e-6/2000-10/view.php>

Changes in population are a major force on real estate values. Given the fixed supply of land, population changes will eventually affect real estate demand. The population of the county surpassed 3 million in 2008, making San Diego the 17th most populated metropolitan area in the United States. The following table shows the change in population of San Diego County since 2005.¹²

¹² <http://quickfacts.census.gov/qfd/states/>

	Population	Percent Change	Numeric Change
2005	2,970,135	--	6,745
2006	2,982,816	0.4%	12,681
2007	3,014,165	1.0%	31,349
2008	3,051,262	1.2%	37,097
2009	3,077,633	0.9%	26,371
2010	3,104,581	0.9%	26,948
2011	3,116,658	0.4%	12,077
2012	3,128,734	0.4%	12,077
2013	3,222,558	3.0%	93,824
2014	3,263,431	1.3%	40,873
2015	3,299,521	1.1%	36,090
2016	3,317,749	0.6%	18,228
2017	3,337,685	0.6%	19,936
2018	3,344,430	0.7%	24,043
2020*	3,836,691	15.0%	499,006

* projected

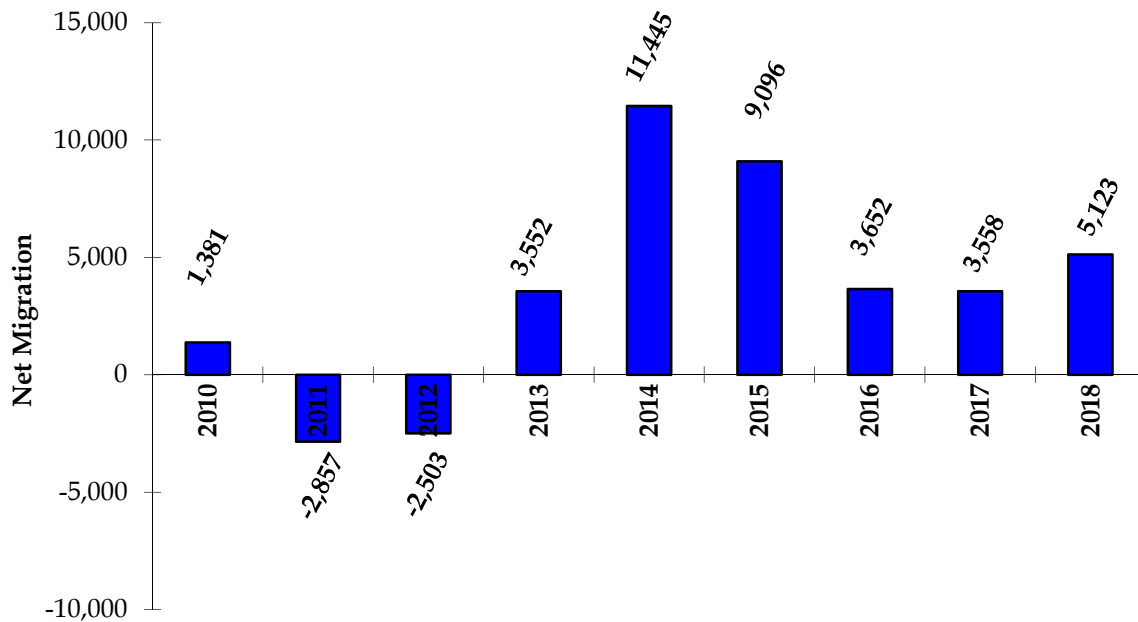
Population growth consists of the following two factors:

- 1) Natural Growth: births minus deaths
- 2) Net Migration: number of people moving in minus people moving out

Natural growth tends to increase steadily and is generally impervious to economic conditions. Net migration tends to fluctuate through economic cycles. Increases in this component were high in the late 1980s but declined in the early 1990s, with negative figures from 1992 to 1995, the first time in 28 years that more people moved out than in. As the economy improved in the second half of the 1990s through 2003, net migration again increased. As can be seen on the following chart, the trend began to reverse itself, with net migration decreasing significantly in 2011 and 2012, before rebounding in 2013:¹³

¹³ <http://www.dof.ca.gov/research/demographic/reports/estimates/e-2/>

San Diego County Net Migration



Housing Demand

Population growth is the key to housing demand. Since the number of people per household stays relatively stable – generally between a low of 2.6 and a high of 2.9 – a new housing unit is demanded for each 2.6 to 2.9 net people who move to, or are born in, San Diego.¹⁴ Based on these figures, the population increase in 2018 of 5,123 people equates to a demand for between approximately 13,320 and 14,857¹⁵ new housing units (these figures would likely be greater since some properties are condemned and/or destroyed).

Housing Supply vs. Demand

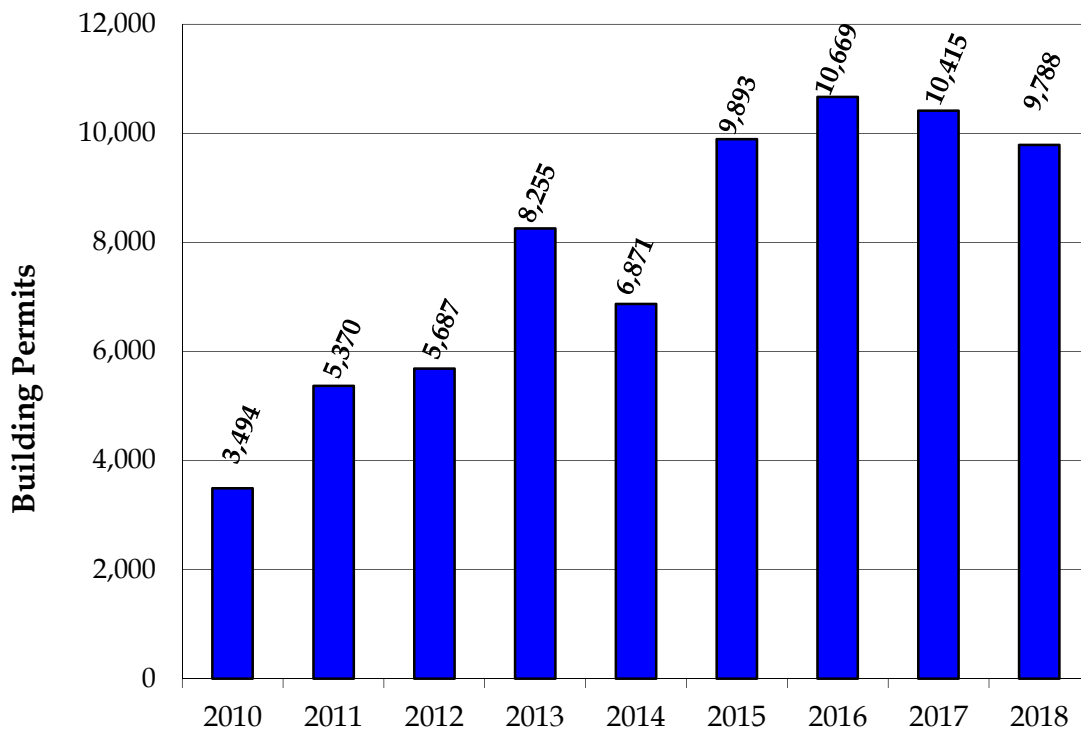
The number of housing permits has declined significantly since the boom times of the mid 2000s. The total number of building permits for San Diego County has increased since bottoming out in 2009, as shown as follows:¹⁶

¹⁴ A common response to the relationship between natural growth and real estate demand is that newborn babies do not purchase or rent homes. Though true, this view ignores the fact that as each baby is born, so does a young adolescent grow into a young adult who desires a place of his or her own. Thus, natural growth reflects an immediate real demand for housing.

¹⁵ (5,123 people ÷ 2.6 people/household) and (5,123 people ÷ 2.9 people/household).

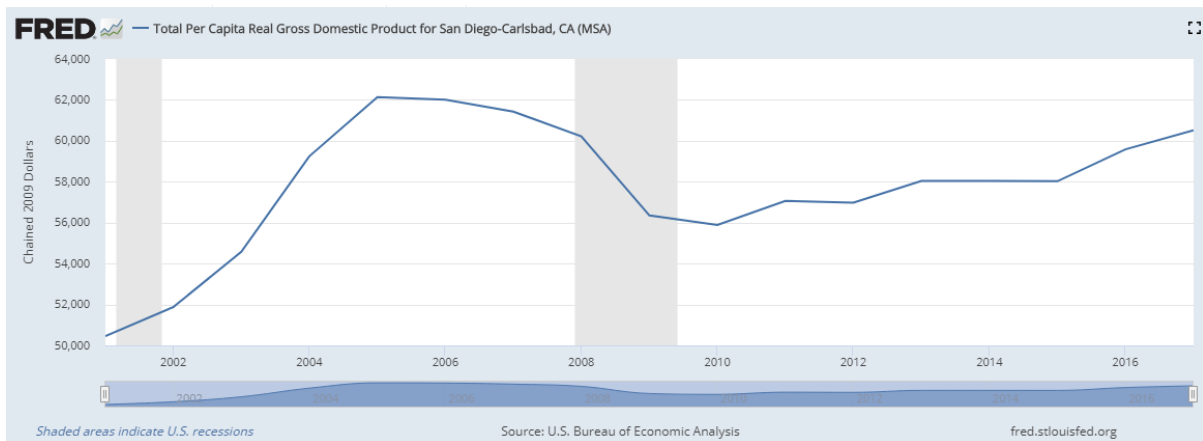
¹⁶ <http://www.census.gov/construction/bps/msamonthly.html> as of March 2019

San Diego County Building Permits (Total Housing Units)



General Economy¹⁷

After the severe recession in the early 1990s, San Diego has had several years of relatively strong economic growth, as shown in the following graph of Total Gross Domestic Product (GRP) for the San Diego-Carlsbad, CA (MSA):



¹⁷ www.fred.stlouisfed.org latest update September 18, 2018

While previously dominated by defense and military, San Diego industries have transformed into a more diversified mix of high-technology commercial endeavors. Some were by-products of the existing defense-related industries, capitalizing on the highly educated and skilled labor force. Emerging sectors include electronics, telecommunications, computers, software and biotechnology.

It is virtually impossible to break down San Diego's GRP into specific industries because of overlap (e.g. some defense production is also manufacturing, etc.). However, most experts agree the biggest contributor is manufacturing (particularly high-tech), with military second, and tourism third. Agriculture and construction are also major contributors.

Some specific industries are discussed as follows:

Defense Industries

After several years of decline, San Diego's defense contracting rose again after September 11 and tended to continue as a result of the ongoing Middle East conflicts. The revitalization of San Diego's defense work has been mainly in technological and surveillance systems.

High-Tech

World-class scientific and research institutions, along with the region's roots in the military, were instrumental in developing San Diego's technology industries. Additionally, San Diego is one of the nation's leading centers for biotechnology.

Tourism

Tourism is a multi-billion dollar industry and is generally regarded as San Diego's third-largest economic sector. San Diego hosts more than 35.8 million visitors each year, and is a top U.S. travel destination. According to the county of San Diego and the San Diego Regional Chamber of Commerce, visitor spending is accounts for more than \$11.5 billion annually and the visitor industry employs directly and indirectly 194,000 San Diegans. The industry generates more than \$940 million annually in state and local taxes.¹⁸

International Trade

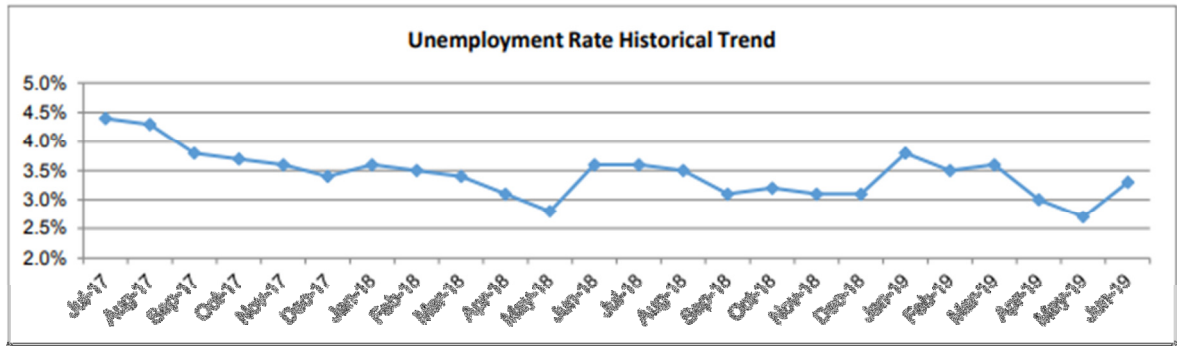
The international border between San Diego and Mexico is one of the busiest in the world. International trade has contributed to San Diego's economic recovery and

¹⁸ www.sandiego.org/industry-research.aspx

dynamic performance in recent years, as trade and interactions with Mexico have provided tremendous economic advantages and opportunities.

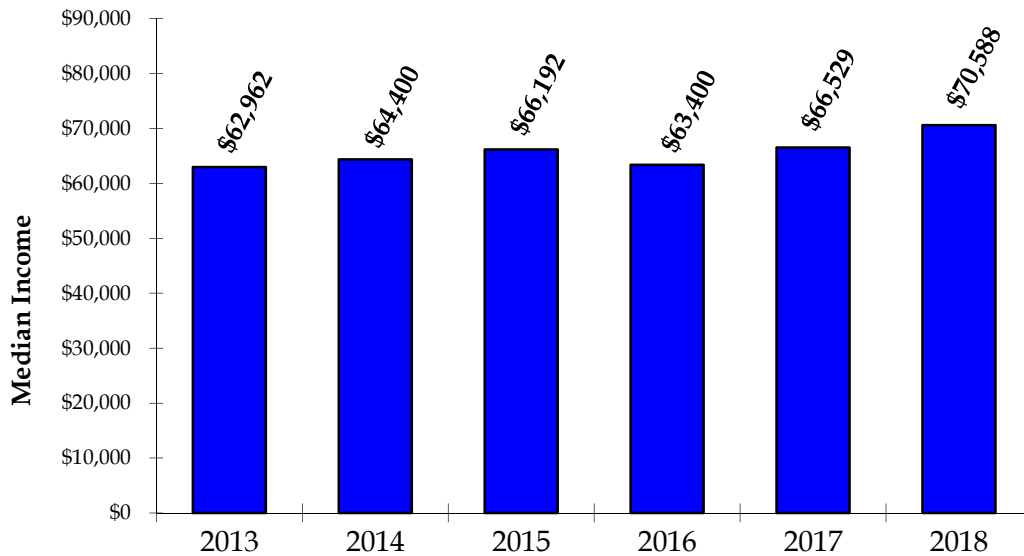
Unemployment

San Diego’s unemployment – the number of adults’ unemployed and actively pursuing employment¹⁹ is shown as follows:



As indicated in the above graph, San Diego County unemployment rate has declined since July 2017. Recent median household income figures have been increasing over the last couple years, as shown as follows:

San Diego County Median Household Income

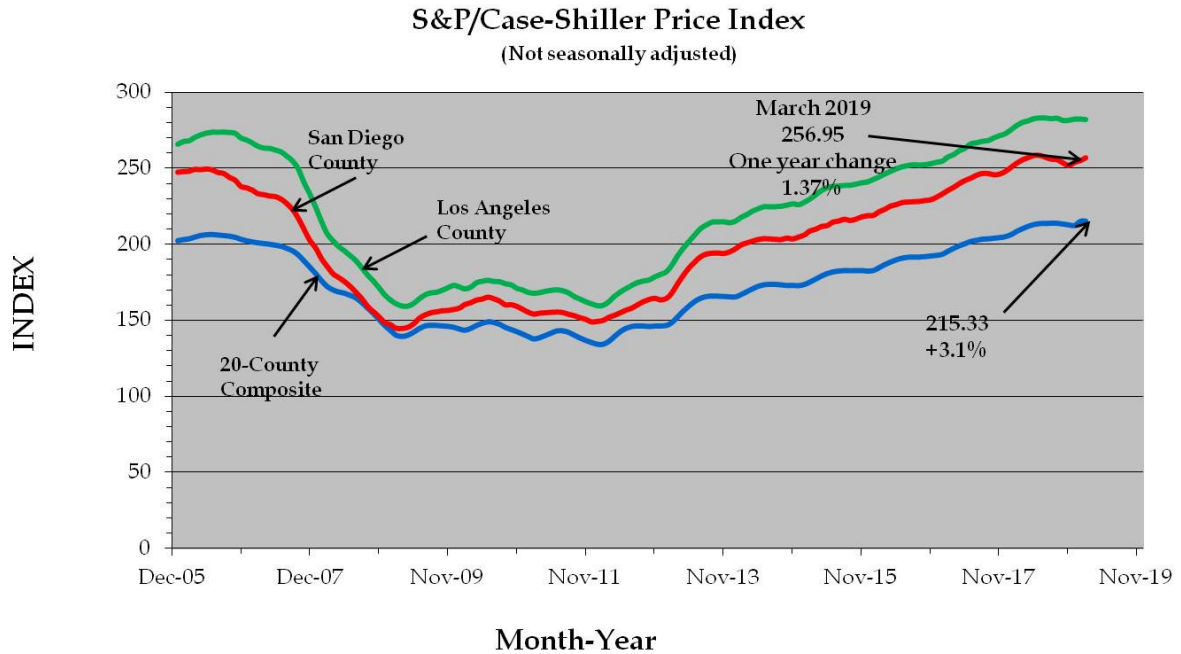


¹⁹ [http://www.labormarketinfo.edd.ca.gov/file/lfmonth/sand\\$pds.pdf](http://www.labormarketinfo.edd.ca.gov/file/lfmonth/sand$pds.pdf)

Note: Civilian labor force does not include those younger than 16, or college students and adults not actively seeking employment. Members of the armed services and persons in institutions such as prisons, mental hospitals, or nursing homes are also not included.

Historical Housing Trends

Driven by a growing population, increasingly restrictive land development requirements, and decreasing inventory of developable land, housing prices have tended to increase over the long term in this area. Refer to the S&P/Case-Shiller Index²⁰ in the following graph:



The index represents a three-month rolling average of paired home sales, starting at 100 in January 2000.

Source: Standard & Poor's

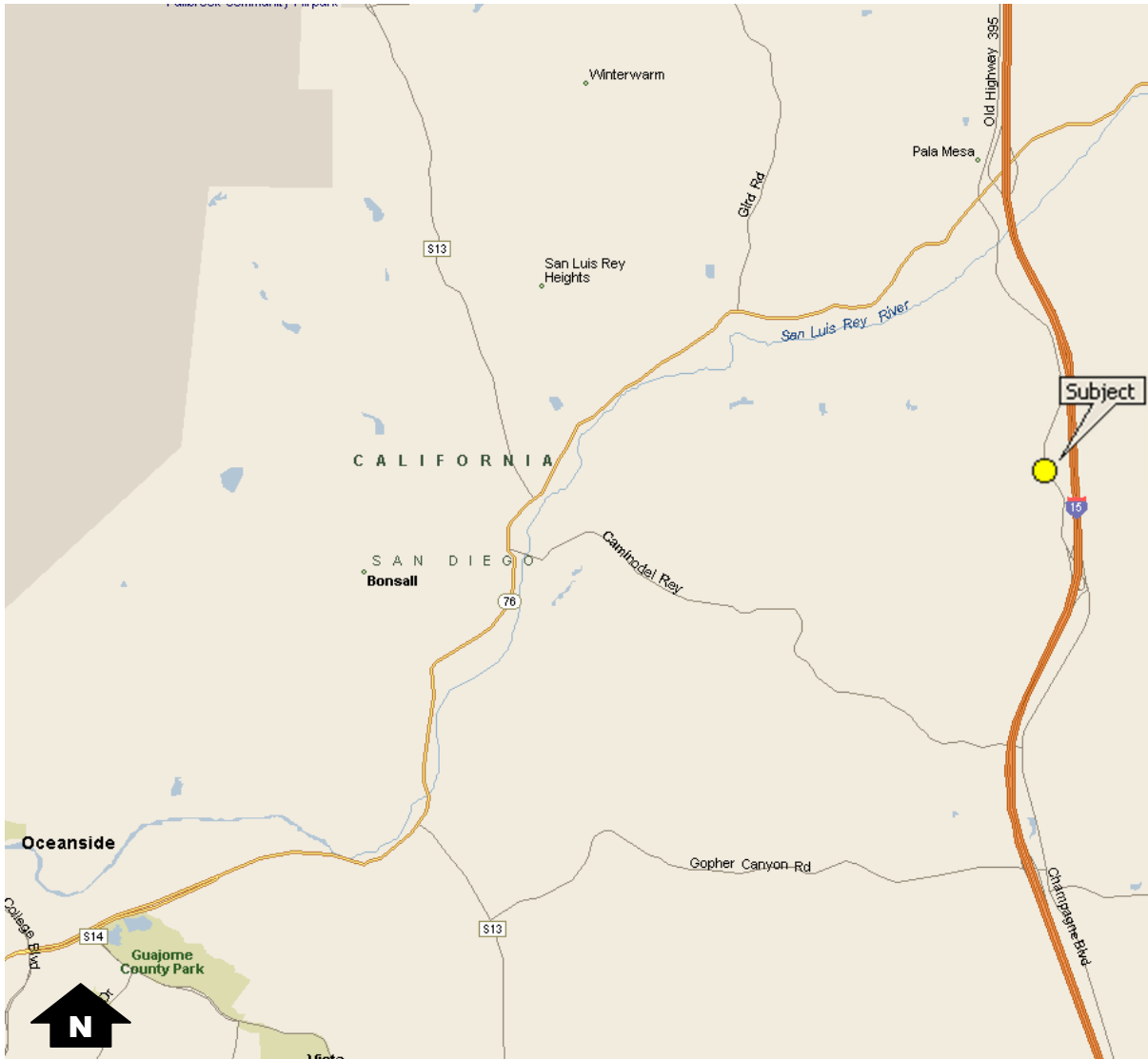
As shown, the median price of a home in San Diego County stayed fairly level between about 2009 and 2014. Since then it appears to have been increasing at varying rates, with intermittent periods of stabilization.

Conclusion/Projections

In the past, San Diego real estate values have been supported by a strong economy able to attract major industries, organizations, and highly-skilled residents. The stabilizing effect of the military presence, the many and varied tourist attractions, a considerable industrial structure and excellent weather have established San Diego as a relatively stable economic environment. These forces have historically kept the region strong and are expected to maintain the area in the long-term future. The economy appears to be strong with values increasing in some areas.

²⁰ <http://us.spindices.com/indices/real-estate/sp-case-shiller-home-price-index>

MARKET AREA



Market Area is defined as:

The geographic or locational delineation of the market for a specific category of real estate, i.e., the area in which alternative, similar properties effectively compete with the subject property in the minds of probable, potential purchasers and users.²¹

Location

The subject is in Bonsall, an unincorporated community in northern San Diego County. This is a primarily rural/residential region approximately 45 miles north of

²¹ Dictionary, 174-175.

downtown San Diego and 15 miles inland from the Pacific Ocean. This area is bounded by the city of Vista to the south, the Marine Corps Base Camp Joseph P. Pendleton to the west, the community of Fallbrook to the north, and Interstate 15 to the east.

Access

The subject area has access to State Highway 76, which leads south to the city of Oceanside and north to unincorporated areas of the county. To the east of Bonsall is Interstate 15, which leads south to the city of Escondido and other San Diego communities. Bonsall is primarily rural, but there is a sufficient network of secondary roads, and access to neighboring cities is available via the highways.

Topography

This area has a wide variety of topographical conditions, ranging from level river bottom areas to steeper terrains and mountains. Many areas of Bonsall are heavily wooded, some with avocado and citrus groves.

Development

Residential units in Bonsall range from dilapidated shacks to newer custom estates. Within the subject's immediate neighborhood tend to be large, custom homes on large lots. Home quality is generally above-average to good.

Services

The subject area has access to public utilities, including electricity and telephone. Water is generally from private wells, gas is available through private propane tanks, and sewage treatment is handled by public sewer in some areas, and private septic systems in others.

Market Change

Real estate values and rents in this area were basically stable until about 2012 when they began increasing. Based on paired sales and discussions with brokers, land values were increasing at about 0.5% per month over the period analyzed. Lease rates appear to have been basically stable over this same period analyzed.

Conclusion

The community of Bonsall is a quiet, primarily rural community but with access to the employment centers of the San Diego metropolitan area. The real estate market in this area is intimately tied to the overall economy of San Diego County. As San

Diego thrives or weakens, so likely will property values in this area. The long-term outlook for the region and market area is positive, prices were increasing over the period studied.

SITE ANALYSIS

Identification of the Property

The subject is a vacant agricultural property on Old Highway 395/Via Urner Road, Bonsall, CA 92003. APN 127-071-05

Legal Description

The subject property is legally described as follows:

Document No. 63-28701 in Northwest Quarter of Northwest Quarter of Section 24, Township 10, Range 3 West, county of San Diego, state of California.

Current Ownership

According to tax records, the subject is currently owned by Rainbow Municipal Water District.

Property History

No known sales or listings of the subject have occurred in the past 36 months.

Access/Street

The subject is on the southwest corner of Old Highway 395 and Via Urner Road; however, there does not appear to be vehicular access from either street. Old Highway 395 is a two-way, three-lane, asphalt-paved street. It has no curbs, gutters, and sidewalks. Via Urner Road is a closed dirt road.

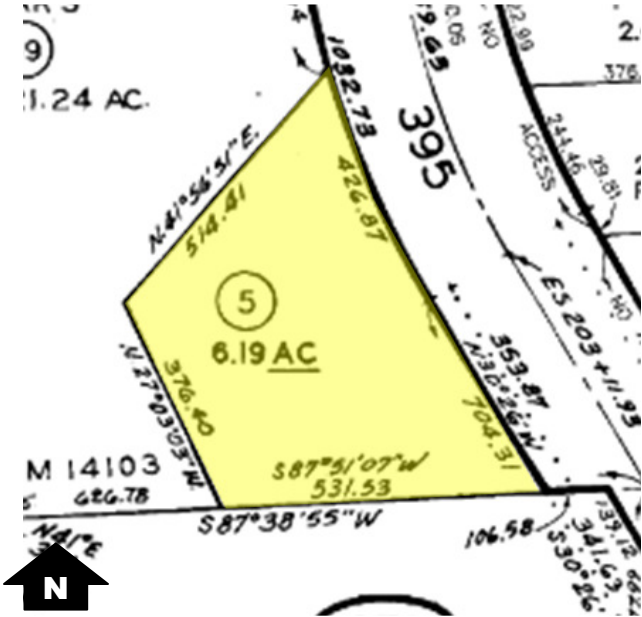
Appraisers accessed the property from the east via Aqueduct Road. Though there were functional gravel roads to the property there was signage indicating this was private property. This analysis assumes that the subject has functional and legal access.

Surrounding Land Uses

North:	Agricultural/residential (across street)
South:	Agricultural
East:	Agricultural (across street)
West:	Agricultural/residential

Area and Shape

The subject parcel has a total estimated area of 6.19 acres (269,636 SF) and is irregular in shape, as shown in the following plat map:



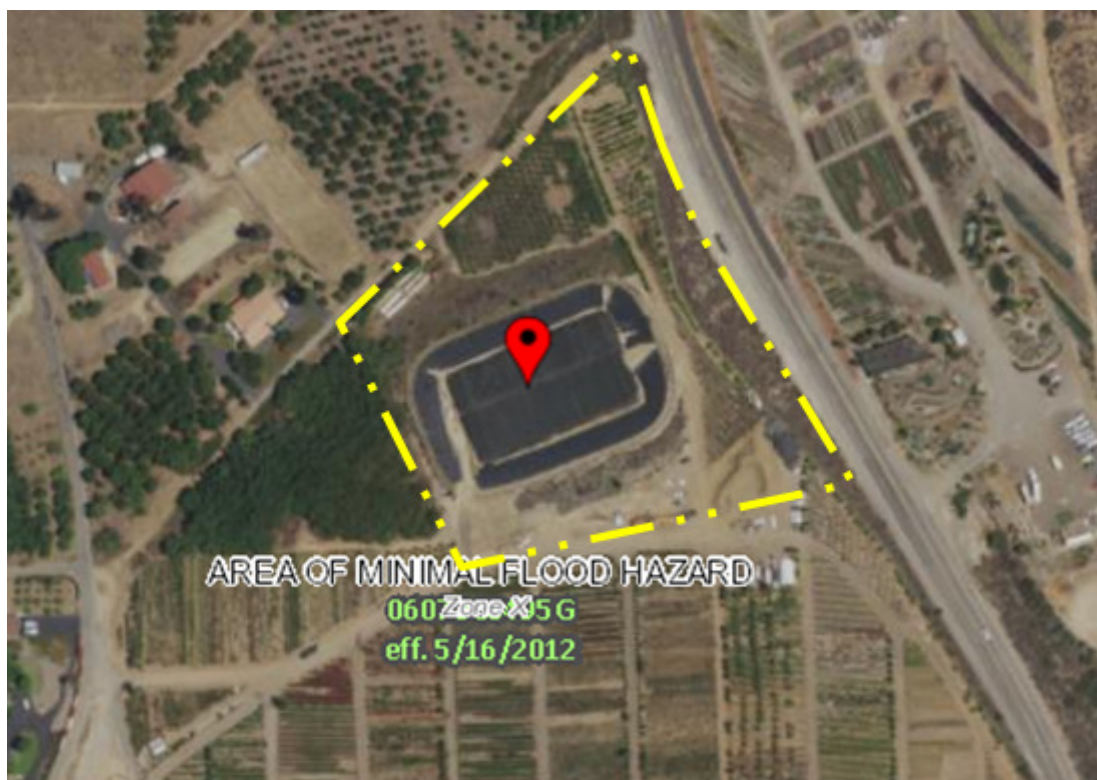
Topography

The natural topography of this area is rolling, but upon completion of the grading the site will be basically level pad; however, there is a steep downward slope along the eastern boundary of the property toward Old Highway 395.

Flood Zone

The subject is in Federal Emergency Management Agency (FEMA) community panel number 06073C-0495G (5/16/12). It is in Zone X, an area determined to be outside of the 100- and 500-year floodplains.²² Refer to the following flood map:

²² <https://msc.fema.gov>



Drainage

Drainage appears adequate.

Utilities and Service

Utilities including electric, municipal water, and telephone are available to the subject. Waste disposal is via private septic systems and gas is provided by private propane tanks. Utility costs are comparable to the rest of San Diego County.

Tax and Assessment Analysis

The current owner is exempt from property taxes as it is a municipality. Despite this, actual taxes being paid by the owner at the date of value are irrelevant to new buyers since the vast majority of California properties, including the subject, are taxed based on the 1978 Proposition 13 (known as the Jarvis-Gann Initiative). This proposition, which amended the California Constitution, imposes a maximum *ad valorem* tax on real property of 1% of its full cash value (determined by the 1975-76 county assessors' valuation or resale) plus additional assessments determined through individual community's bond indebtedness. Increase in real property assessed value may be made yearly, not to exceed 2% of the full cash value, to reflect inflation. This taxation system has historically been favorable to property owners, as values have tended to increase at higher rates than 2% annually.

Properties are reassessed when a building is newly constructed or upon change of ownership. In the event of a sale, the price is generally used as full cash value. As such, a sale of the subject would prompt reassessment. Knowing this, a new buyer would consider the new tax burden rather than the existing one. No changes to this tax system are anticipated in the near future.

Easements and Encroachments

Access to the subject property appears to be over the neighboring property(s). This analysis assumes that the subject has physical and legal access. There were no other apparent adverse easements or encroachments noted at inspection. However, no title report was provided. This analysis is made under the assumption that no significant adverse title issues exist.

Earthquake Hazard

As the subject is in Southern California, there is some obvious risk of earthquake damage; however, the subject property is not inside a known Alquist-Priolo Earthquake Fault Zone.

Hazardous Wastes/Soil and Subsoil Conditions

The appraisers are not qualified to detect hazardous wastes, toxic materials or soil/sub-soil conditions. Such determination would require an investigation by qualified experts in those fields. This analysis is made assuming no such problems exist.

Zoning

The subject is zoned A70: Limited Agricultural, by the county of San Diego. The A70 zone "intended to create and preserve areas intended primarily for agricultural crop production. Additionally, a limited number of small farm animals may be kept and agricultural products raised on the premises may be processed."²³ Permitted uses in this zone include residential, civic, and agricultural.

Relevant development criteria for the subject's zone are listed as follows:

Min. Lot Area:	2.0 acres
Min. Lot Dimensions	
Street Frontage:	100 feet
Width (Interior):	100 feet
Width (Corner):	100 feet

²³ County of San Diego Zoning Ordinance version dated April 2017.

Depth:	100 feet
Setbacks	
Front:	60 feet
Interior Side:	25 feet
Exterior Side:	35 feet
Rear:	25 feet
Max. Height:	35 feet or 2 stories

However, despite this zone, the subject's General Plan - Land Use Designation is Public/Semi-Public Facilities. According to Marlene at the county of San Diego Planning Department, if a non-governmental buyer purchased the site, the Public/Semi-Public Facilities would automatically convert to RL-80. The RL-80 allows for one residential unit. She indicated that the General Plan overrides the zoning designation.

Based on the above, the subject's current agricultural use appears to be generally legally conforming. However, appraisers are not experts in the interpretation of complex zoning ordinances and the determination of compliance is beyond the scope of work of real estate appraisal.

Other Restrictions

There are no other known deed restrictions, private or public which further limit the subject property's use. Research required to determine whether such restrictions exist is beyond the scope of this appraisal assignment. Deed restrictions are a legal matter and typically a title examination by an attorney or title company is needed to discover them. Appraisers recommend a title examination to determine if any such restrictions exist.

Site Conclusion

The subject site is of adequate size and has adequate topography for agricultural and residential uses. It has good access to roads, utilities, and other resources that are desirable for these uses. Overall, it is considered a desirable site for agricultural uses and/or residential development.

SUBJECT PHOTOGRAPHS



Looking southeasterly along Old Highway 395;
Subject to right



Looking southwesterly at Via Urner Road;
subject to left



Access road to subject looking westerly toward
Aquaduct Road



Access into reservoir



Former reservoir



Former reservoir

SUBJECT PHOTOGRAPHS



View along edge of reservoir



View looking northerly



View looking southerly



View looking westerly

HIGHEST AND BEST USE

The concept of market value inherently reflects that the seller is motivated to obtain as high a price as possible (and the buyer is motivated to pay as little as possible). As a result of the seller's motivation, the ultimate buyer will be the one willing to pay the most, or in other words, the highest bidder. It follows that the highest bidder is that buyer who recognizes the most profitable use of the property. This must be the case since someone recognizing a more profitable use could pay more, thereby becoming the new highest bidder. As a result of this dynamic, an accurate measure of market value must consider the property's highest and best use, defined as

The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity.²⁴

Legal Permissibility

As discussed in the Site Analysis section, the subject's general plan specifies that, upon sale to a non-governmental party, the subject would automatically convert to RL-80. The RL-80 allows for one residential unit.

Physical Possibility

Upon completion of the grading, the subject site will have adequate topography for development, with adequate vehicular and utility access. No physical attributes of the site preclude development of the legally permissible uses.

Financial Feasibility and Maximum Productivity

To be financially feasible, the total value of the completed development must be equal to or greater than the combined value of the site and cost of improvements. The current real estate market appears to be strong and based on the presence of new construction in this area; the highest and best use of the site appears to be for immediate development of one single-family home. Based on the comparables and on the general trend in this area, the highest and best use of the site is for residential development.

²⁴*Dictionary*, 135.

SALES COMPARISON APPROACH: AS THOUGH GRADING WORK IS COMPLETE

In this section the subject is analyzed assuming the grading works has been completed.

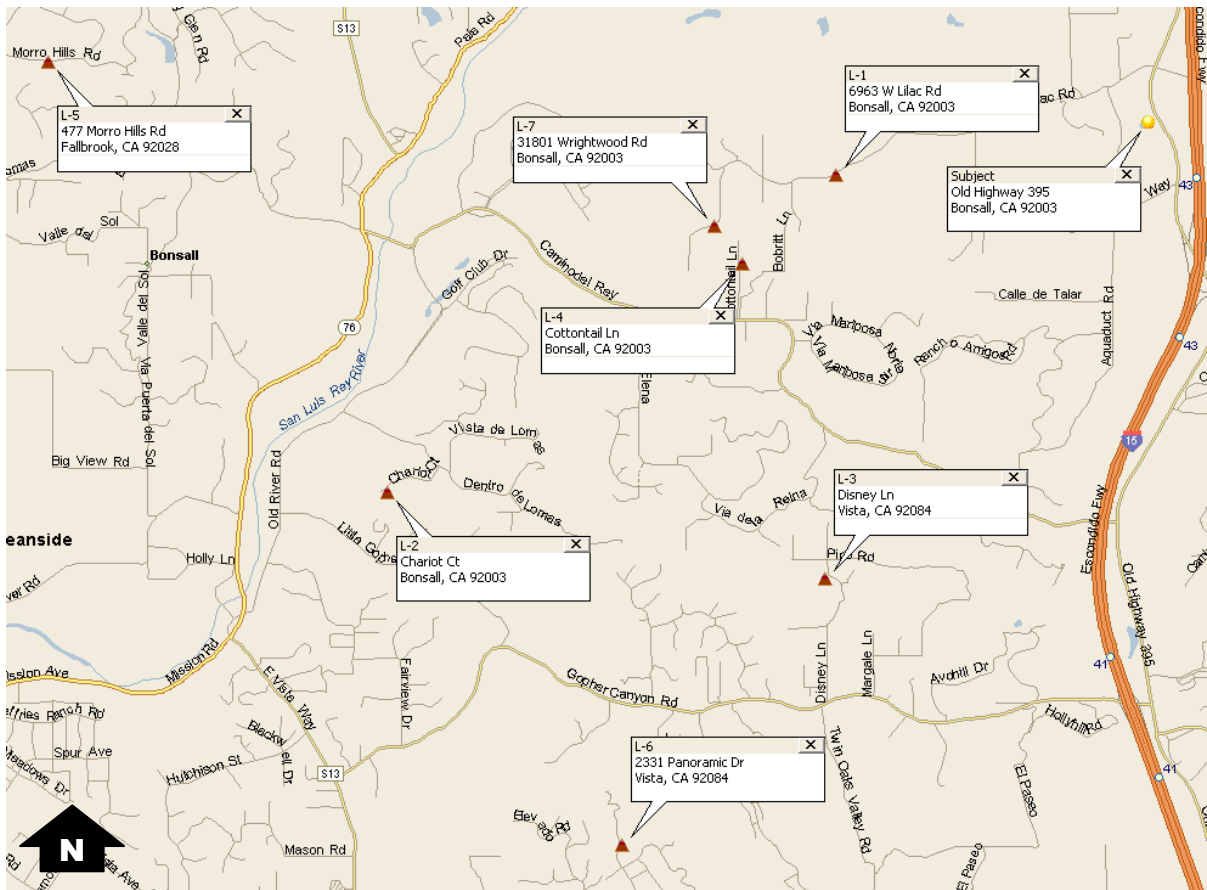
The sales comparison approach is based on the assumption that an informed purchaser will pay no more for a property than the cost of acquiring an existing property with equal utility. When this approach is applied, market value is estimated by comparing the sale prices of recent transactions involving properties similar to the subject. Any dissimilarities are resolved with appropriate adjustments.

Steps in the sales comparison approach include assembling and verifying the sales, comparing them to the subject, and adjusting for differences based on other market-derived data. The subject site is analyzed on a price-per-square-foot basis, which best reflects the evaluation method of buyers and sellers in this area. Rather than making a specific adjustment for project size within the grid, which is difficult because its impact tends to be non-linear,²⁵ this analysis considers the comparables graphically which illuminates the impact from the law of decreasing returns (the tendency for properties with more lots to sell for less per lot and properties with fewer lots to sell for more per lot). As such, the impact due to differences in size is considered in the reconciliation.

Due the scarcity of similar, recent sales in the subject's immediate market the search was expanded to other comparable areas. As such, some of the comparables are relatively far away and some have higher than typical gross adjustment amounts. Despite this, the comparables used are considered the best available.

The comparables are shown on the following location map:

²⁵ This means the impact from size differences vary in scale over the range of sizes. For example, a difference of 1 maximum lot in size will typically be far more significant to a 6 maximum lot site than say a 100 maximum lot site. Thus, applying one adjustment figure or percentage over a range of sizes will result in flawed results. Looking at it graphically allows the relationship to be easily and quickly understood.



Refer to the adjustment grid on the next page.

SALE COMPARABLE ADJUSTMENT GRID

	Subject	L-1	L-2	L-3	L-4
Address	Old Highway 395/Via Urner Rd Bonsall, CA 92003	6963 W Lilac Rd Bonsall, CA 92003	Chariot Ct Bonsall, CA 92003	Disney Ln Vista, CA	Cottontail Ln Bonsall, CA 92003
APN	127-071-05	127-350-05	126-180-52	127-420-75	127-250-36
Distance to Subject	--	1.6 MI SW	4.4 MI SW	2.9 MI SW	2.3 MI SW
Doc. No.	--	19-326025	19-107494	18-482974	18-451794
Sale Date (COE)	--	8/6/19	3/26/19	11/20/18	10/29/18
Sale Date (Off Market)	--	7/11/19	1/28/19	10/17/18	10/8/18
Location	Average	Average	Average	Inferior	Inferior
Lot Size (Acres)	6.19	4.85	4.13	2.03	1.68
Lot Size (SF)	269,636	211,266	179,903	88,427	73,181
Zoning	A70	A70	A70	RR	A70
Land Use Designation	RL-80	SR-4	SR-4	SR-4	SR-2
Max. No. Lots	1	1	1	1	1
Site Work	Assumed finished site	Raw land	Raw land	Raw land	Raw land
Site Improvements	Assume Finished Site	None	None	None	Fruit/nut trees
Entitlements	None	None	None	None	None
Topography	Generally level	Generally level	Gently sloping	Gently sloping	Gently sloping
View	Excellent	Good	Excellent	Good	Good
Utilities	Avail to site	Well & electric to site	Water to site	Avail to site	Elect. To site/septic approved
Access	Paved road	Dirt road	Paved road	Paved road	Paved road
Price	--	\$350,000	\$259,000	\$220,000	\$205,000
Price/SF	--	\$1.66	\$1.44	\$2.49	\$2.80
Price/Max Lot	--	\$350,000	\$259,000	\$220,000	\$205,000
Costs Immed. After Purchase					
		\$1.66	\$1.44	\$2.49	\$2.80
Property Rights					
		\$1.66	\$1.44	\$2.49	\$2.80
Financing					
		\$1.66	\$1.44	\$2.49	\$2.80
Conditions of Sale					
		\$1.66	\$1.44	\$2.49	\$2.80
Market Conditions					
		0.1%	2.9%	4.6%	4.7%
		\$1.66	\$1.48	\$2.60	\$2.93
Physical Differences					
Location					
Zoning/Land Use					
Site Work		10.0%	10.0%	10.0%	10.0%
Site Improvements					-2.0%
Topography					
View		5.0%		5.0%	5.0%
Utilities/Access		-5.0%	-5.0%		-7.0%
Total		10.0%	5.0%	15.0%	6.0%
Price/max Lot		\$1.82	\$1.55	\$2.99	\$3.11
Gross Adjustment		20.1%	17.9%	19.6%	28.7%

SALE COMPARABLE ADJUSTMENT GRID (CONTINUED)

	Subject	L-5	L-6	L-7
Address	Old Highway 395/Via Urner Rd Bonsall, CA 92003	477 Morro Hills Rd Fallbrook, CA 92028	2331 Panoramic Dr Vista, CA 92084	31801 Wrightwood Rd Bonsall, CA 92003
APN	127-071-05	121-230-12	172-114-11	127-180-65
Distance to Subject	--	5.6 MINW	4.7 MI SW	2.3 MI SW
Doc. No.	--	18-423912	18-394439	17-543979
Sale Date (COE)	--	10/12/18	9/20/18	11/2/17
Sale Date (Off Market)	--	8/13/18	7/20/18	11/4/17
Location	Average	Average	Average	Average
Lot Size (Acres)	6.19	3.47	6.90	6.64
Lot Size (SF)	269,636	151,153	300,564	289,238
Zoning	A70	A70	A70	A70
Land Use Designation	RL-80	SR-2	SR-4	SR-2
Max. No. Lots	1	1	1	3
Site Work	Assumed finished site	Finished site	Raw land	Raw land
Site Improvements	Assume Finished Site	Fully fenced	None	None
Entitlements	None	None	None	None
Topography	Generally level	Gently sloping	Rolling	Rolling
View	Excellent	Excellent	Excellent	Excellent
Utilities	Avail to site	Water to site	Water to site	Water to site
Access	Paved road	Paved road	Paved road	Paved road
Price	--	\$425,000	\$239,000	\$325,000
Price/SF	--	\$2.81	\$0.80	\$1.12
Price/Max Lot	--	\$425,000	\$239,000	\$108,333
Costs Immed. After Purchase				
	Adj. Price	\$2.81	\$0.80	\$1.12
Property Rights				
	Adj. Price	\$2.81	\$0.80	\$1.12
Financing				
	Adj. Price	\$2.81	\$0.80	\$1.12
Conditions of Sale				
	Adj. Price	\$2.81	\$0.80	\$1.12
Market Conditions				
	Adj. Price	5.7%	6.1%	10.4%
	Adj. Price	\$2.97	\$0.84	\$1.24
Physical Differences				
	Location		-5.0%	
	Zoning/Land Use			-10.0%
	Site Work		10.0%	10.0%
	Site Improvements	-10.0%		
	Topography		20.0%	20.0%
	View			
	Utilities/Access	-5.0%	-5.0%	-5.0%
	Total	-15.0%	20.0%	15.0%
Price/max Lot		\$2.52	\$1.01	\$1.43
	Gross Adjustment	20.7%	46.1%	55.4%

SALE COMPARABLES



L-1

Address: 6963 W Lilac Road
Bonsall, CA 92003

Buyer: Robert J & Johanna V Crew

Seller: Pauline E Joyce 2008 Trust

Sale Date: 8/6/19

Sale Price: \$350,000

Financing: 1st TD of \$310,000 to a private lender

Exposure Time: 1.0 year

Source: MLS (180038819); public records; agent, Pam Moss, 714-296-9300

Prior Sale: None in previous 36 months

Comments: This is the sale of a 4.85 acre site. According to the agent, this property sold at market. She indicated that this it had a well and electric to the site, and it had good area views from the top of the lot.



L-2

Address: Chariot Court
Bonsall, CA 92003

Buyer: Douglas R & Takako McBurney

Seller: John & Victoria Godwin

Sale Price: \$259,000

Sale Date: 3/26/19

Financing: 1st TD of \$180,000 to US Bank National Association

Exposure Time: 7.3 months

Source: MLS (180040250); public record

Prior Sale: None in prior 36 months

Comments: This is the sale of a 4.13 acre site. This information was obtained from reliable sources and verified with public records. However, despite various attempts it could not be confirmed by a principal involved (e.g. buyer, seller, broker, etc.).

SALE COMPARABLES

**L-3**

Address: Disney Lane
Vista, CA 92084

Buyer: Joshua O & April C Alger

Seller: Bennett Family Trust

Sale Price: \$220,000

Sale Date: 11/20/18

Financing: 1st TD of \$165,000 from the seller

Exposure Time: 7.6 months

Source: MLS (180011276); tax records; agent, David Klose, 760-802-2686

Prior Sale: None in previous 36 months

Comments: This is the sale of an 2.03 acre vacant residential site. According to the agent, this property sold at market. He indicated that although the seller carried the mortgage, this did not affect the sale price. Septic has been approved for the site.

**L-4**

Address: Cottontail Lane
Bonsall, CA 92003

Buyer: Alexander R & Janet M Miller

Seller: Pardip S & Kuldip K Johal

Sale Price: \$205,000

Sale Date: 10/29/18

Financing: All cash

Exposure Time: 4.7 months

Source: MLS (180027635); tax records; agent, Bart Ryan, 760-787-1900

Prior Sale: Sold for \$109,000 on 3/18/14

Comments: This is the sale of a 1.68 acre vacant residential site. According to the agent, this property sold at market. He indicated that some trees remained from an old grove, which added some value. The site had utilities in and the septic system had been approved.

SALE COMPARABLES

**L-5**

Address: 477 Morro Hills Road
Fallbrook, CA 92028

Buyer: Robert J & Renee T Nelson

Seller: Michael & Peggy Vetter

Sale Price: \$425,000

Sale Date: 10/12/18

Financing: All cash

Exposure Time: 5.4 months

Source: MLS (180011630); tax records

Prior Sale: None in previous 36 months

Comments: This is the sale of a 3.47 acre vacant residential site. This information was obtained from reliable sources and verified with public records. However, despite various attempts it could not be confirmed by a principal involved (e.g. buyer, seller, broker, etc.).

**L-6**

Address: 2331 Panoramic Drive
Vista, CA 92084

Buyer: Ehab Alawneth & Fatima Bani-Kenana

Seller: Donald & Anne Baron Trust

Sale Price: \$239,000

Sale Date: 9/20/18

Financing: All cash

Exposure Time: 11.6 months

Source: MLS (170042857); tax records

Prior Sale: None in previous 36 months

Comments: This is the sale of a 6.90 acre vacant residential site. This information was obtained from reliable sources and verified with public records. However, despite various attempts it could not be confirmed by a principal involved (e.g. buyer, seller, broker, etc.).

SALE COMPARABLES



L-7

Address: 31801 Wrightwood Road
Bonsall, CA 92003

Buyer: Phan-Lam

Seller: Douglas C & Terrance Jones

Sale Price: \$325,000

Sale Date: 11/22/17

Financing: All cash

Exposure Time: 4.9 months

Source: MLS (170033264); tax records

Prior Sale: None in previous 36 months

Comments: This is the sale of a 6.64 acre vacant residential site. This information was obtained from reliable sources and verified with public records. However, despite various attempts it could not be confirmed by a principal involved (e.g. buyer, seller, broker, etc.).

Discussion of Adjustments

All of the comparables were sold either with all cash or with typical cash-equivalent financing. None appear to have sold under any duress. The comparables are similar to the subject in all respects, except the following:

Market Conditions

Adjustments for market conditions are made to reflect the monthly changes in value as described in the Market Area section (and listed in table below). Adjustments are made from each comparable's date of sale (i.e. the "meeting of the minds" of the buyer and seller) to the date of value, as follows:

Market Change: 0.50%/mo					
	Subject	L-1	L-2	L-3	L-4
Price/SF	--	\$1.66	\$1.44	\$2.49	\$2.80
Sale Date	7/18/19	7/11/19	1/28/19	10/17/18	10/8/18
Difference (months)	--	0.2	5.7	9.1	9.4
Market Change/Mo	--	0.5%	0.5%	0.5%	0.5%
Adjustment (%)	--	0.1%	2.9%	4.6%	4.7%
	Subject	L-5	L-6	L-7	
Price/SF	--	\$2.81	\$0.80	\$1.12	
Sale Date	7/18/19	8/13/18	7/20/18	11/4/17	
Difference (months)	--	11.3	12.1	20.7	
Market Change/Mo	--	0.5%	0.5%	0.5%	
Adjustment (%)	--	5.7%	6.1%	10.4%	

Location

Comparable L-6 is in a gated community and is adjusted downward.

Site Work

This section of the analysis assumes that the grading work has been done and the subject is a finished site. All of the comparables, except L-5, are raw land and are adjusted upward.

Site Improvements

Comparable L-2 is improved with some fruit and nut trees. According to the agent, these trees added some value; as such, it is adjusted downward. Comparable L-5 is fully fenced and is adjusted downward.

Topography

Comparables L-6 and L-7 have an inferior rolling topography and are adjusted upward.

View

The subject has an excellent area view. Comparables L-1, L-3 and L-4 have inferior views and are adjusted upward accordingly.

Utilities/Access

The subject has utilities nearby, but not to the site. All of the comparables except L-3 have some utilities to the site; each is adjusted downward accordingly. Comparable L-1 has a well and electricity to the site and is adjusted downward 10% for utilities; however, it has access via a dirt road and is adjusted upward 5%; as such, the overall adjustment is -5% (-10% + 5%).

Discussion of Law of Decreasing Returns and Reconciliation

The closed sales indicate the following adjusted prices/maximum allowable lots:

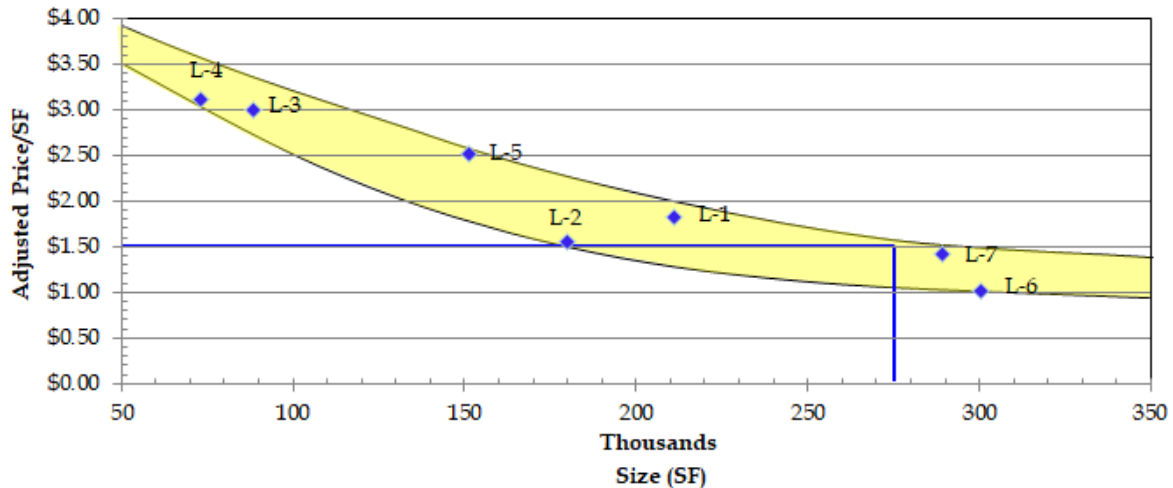
Minimum	\$1.01
Maximum	\$3.11
Average	\$2.06
Median	\$1.82

This range is partly due to the law of decreasing returns, defined as follows:

The premise that additional expenditures beyond a certain point (the point of decreasing returns) will not yield a return commensurate with the additional investment.²⁶

This tendency is illustrated best by plotting these sales based on lot size, as follows:

²⁶ *Dictionary*, 161.



The price/SF tends to decline as size increases, which is typical and expected. As shown above, an estimate for the subject's size is obtained by plotting the subject's size within the trend band. Significant weight is placed on comparables L-1 and L-7. Comparable L-1 is the most recent and L-7 is the most similar in terms of size. Based on this data, the subject is plotted toward the top of the range, and a reasonable value is about \$1.50/SF.

Based on the above, the estimated market value of the fee simple interest in the subject site, "as though grading work is complete," by the sales comparison approach, as of July 18, 2019, is

$$269,636 \text{ SF} \times \$1.50/\text{SF} = \$404,454, \text{ rounded to}$$

\$404,000
(Four Hundred Four Thousand Dollars)

“AS IS” VALUATION

This portion of the analysis begins with the “as though grading work is complete” section, and then adjusts for the cost to complete the grading.

Typical buyers of the subject site would use it for residential development. Significant grading work would be required to level out the area formally used as a reservoir. Appraisers contacted general contractor, Eric Kalabat, about the approximate cost of such a project. It was stipulated that the work should be done such that the outer walls of the reservoir would be pushed into the center until it was a level pad. Further, the work would be defined as a net neutral in terms of dirt meaning that no dirt should be removed or added.

According to Mr. Kalabat, this project would require about 80,000 cubic yards of dirt being moved. According to Mr. Kalabat it would require a large earth mover and a compactor (each three foot of depth would need to be compacted). Other costs include a soils engineer and a surveyor. In his opinion, based the amount of earth to move, the time associated with such an endeavor and the equipment required the cost of this job would be between about \$250,000 and \$300,000. A low-range figure of \$250,000 is used in this analysis as typical buyers have the option of doing less earth moving, if desired (e.g. push in some portions of reservoir walls and leave others).

Conclusion

The subject’s “as is” value is computed as follows:

“As Though Grading Work is Complete”	\$404,000
Cost of Grading Work	-\$250,000
“As Is” Value	\$154,000

Based on the above, the estimated market value of the fee simple interest in the subject property, “as is,” as of July 18, 2019, is

\$154,000
(One Hundred Fifty Four Thousand Dollars)

EXPOSURE TIME

The Appraisal Standards Board provides the following definition of exposure time.

Exposure Time: The estimated length of time the property interest being appraised would have been offered on the market prior to the hypothetical consummation of a sale at market value on the effective date of the appraisal.

The best source of information about exposure time is from the actual sales used, summarized as follows:

Sale	Exposure Time
L-1	1.0 year
L-2	7.3 months
L-3	7.6 months
L-4	4.7 months
L-5	5.4 months
L-6	11.6 months
L-7	4.9 months

Based on the above, as well as typical exposure time for these types of properties, a reasonable time to find a buyer for the subject would be five to nine months. Adding another one to two months for escrow, the total estimated exposure time for the subject is six to eleven months, assuming all the grading work has been done.

ESTIMATED MARKET RENT

Client requested an estimated market rent for the subject property. The market rent is estimated by capitalizing the estimated value of the subject property “as though grading work is complete.” The “as though grading work is complete” estimate is used as a typical tenant using the property for agricultural uses would not need the grading work to be done for that use (as evidence by the current tenant tenant’s use of the former reservoir for plants).

The value of the subject “as though grading work is complete” is estimated at \$404,000. Land cap rates for agricultural properties could not be found, as such, cap rates for commercial properties are used and are summarized as follows:

Address	City	County	Zip	Lot Size (Acres)	Bldg. Size (SF)	Year Built	Type	Sale Date	Cap Rate
29911 Antelope Rd	Menifee	Riverside	92584	0.85	3,314	2018	Fast Food	5/28/19	4.1%
27645 Ynez Rd	Temecula	Riverside	92591	1.1	5,280	1998	Restaurant	6/4/18	6.2%
8200 Parkway Dr	La Mesa	San Diego	91942	0.95	4,526	2017	Fast Food	3/7/18	3.8%
7140-7160 Miramar Rd	San Diego	San Diego	92121	2.08	19,204	1976	Retail Center	12/18/17	6.7%
4181 Oceanside Blvd	Oceanside	San Diego	92056	1.19	14,319	2011	Retail	12/14/17	4.4%
7012 Broadway	Lemon Grove	San Diego	91945	0.57	2,360	1990	Fast Food	7/24/17	4.7%
44520 Bedford Ct	Temecula	San Diego	92592	0.94	904	1989	Gas Station	4/22/16	5.9%
							Minimum		3.8%
							Maximum		6.7%
							Mean		5.1%
							Median		4.7%

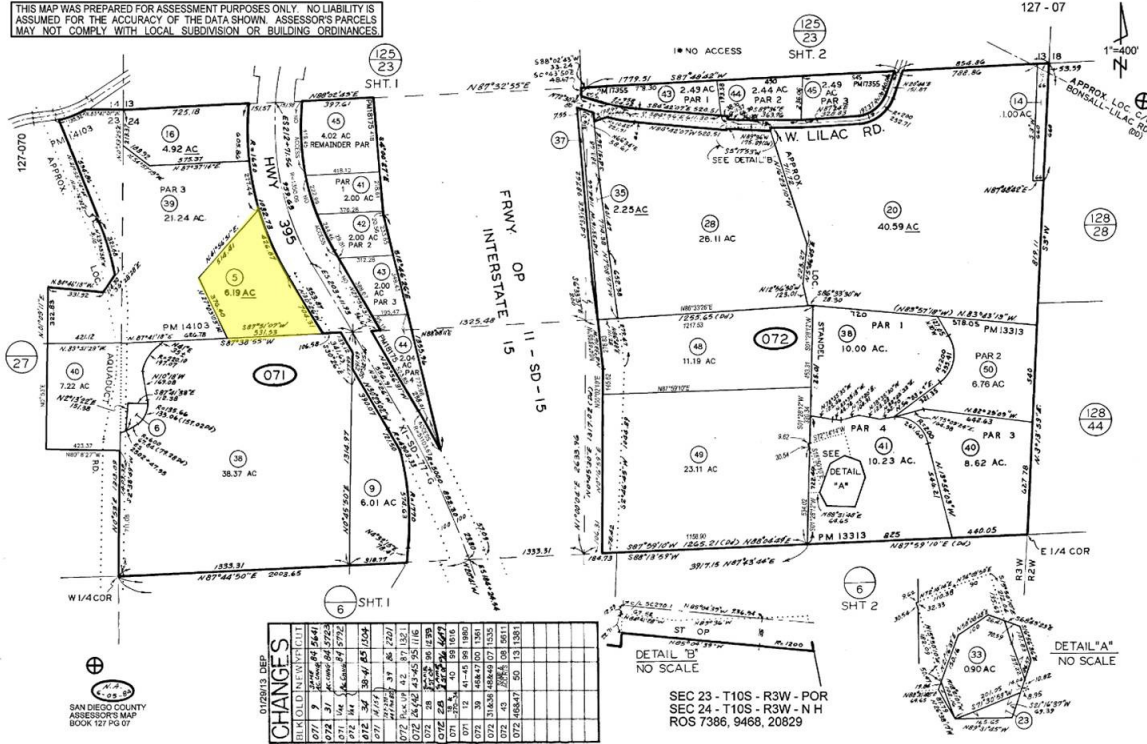
Based on the above, a cap rate of 5.0% is used for the subject’s site. This is applied to the subject’s value to arrive at the estimated Net Operating Income (NOI), as follows:

$$\$404,000 \times 5.0\% = \$20,200$$

Using this figure, the subject’s market rent per month rent is estimated at \$1,683. This is a NNN lease meaning the tenant would pay all operating expenses (taxes, insurance, utilities, etc.).

PLAT MAP

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.



CHANGES	
NEW	OLD
071	071
072	072
073	073
074	074
075	075
076	076
077	077
078	078
079	079
080	080
081	081
082	082
083	083
084	084
085	085
086	086
087	087
088	088
089	089
090	090
091	091
092	092
093	093
094	094
095	095
096	096
097	097
098	098
099	099
100	100

DETAIL "B"
NO SCALE

SEC 23 - T10S - R3W - POR
SEC 24 - T10S - R3W - N H
ROS 7386, 9468, 20829

DETAIL "A"
NO SCALE

QUALIFICATIONS OF SCOTT B. ARENS, MAI, SRA

Professional Qualifications

- MAI Designation, Appraisal Institute
- SRA Designation, Appraisal Institute
- State of California Certified General Real Estate Appraiser, Number AG003035
- State of California Licensed Real Estate Broker, Number 01159521

Education

Bachelor of Science Degree, Architectural Design, Arizona State University, 1988

Classes

- Fundamentals of Separating Real P., Personal P. and Intangibles, Appraisal Institute, 2013
- Introduction to Valuing Commercial Green Buildings, Appraisal Institute, 2012
- Small Hotel/Motel Valuation, Appraisal Institute, 2012
- Appraising Convenience Stores, Appraisal Institute, 2012
- USPAP, Part C, Appraisal Institute, 2012, 2010, 2008, 2006, 1998
- 2011 San Diego Economic Forecast, Appraisal Institute, 2011
- Introduction to Valuation for Financial Reporting, Appraisal Institute, 2009
- Business Practices and Ethics, Appraisal Institute, 2008
- San Diego Economic Forecast, Appraisal Institute, 2008
- Reappraising, Readdressing, Reassigning, Appraisal Institute, 2005
- Case Studies in Limited Partnership, Appraisal Institute, 2005
- Income Valuation of Small, Mixed-Use Properties, Appraisal Institute, 2004
- Effective Appraisal Writing, Appraisal Institute, 2004
- Advanced Sales Comparison and Cost Approach, Appraisal Institute, 2000
- Federal Land Exchange and Acquisitions, Appraisal Institute, 2000
- Highest and Best Use, Appraisal Institute, 1997
- Advanced Applications, Appraisal Institute, 1995
- Narrative Report Writing and Analysis, Appraisal Institute, 1993
- Capitalization Theory and Techniques, Parts A and B, Appraisal Institute, 1991
- Standards of Professional Practice - Parts A and B, Appraisal Institute, 1991
- Applied Residential Property Valuation, Society of Real Estate Appraisers, 1990
- Basic Valuation Procedures, American Institute of Real Estate Appraisers, 1988
- Principles of Real Estate Appraisal, American Institute of Real Estate Appraisers, 1988

Experience

- March 1996 to Current - Owner of Arens Group, Inc., Real Estate Appraisal & Consultation
- July 1990 to March 1996 - Real Estate Appraiser with Harold A. Godwin & Assoc., Inc.
- July 1989 to July 1990 - Real Estate Appraiser with Piskulick-Simeon Appraisal Service
- May 1988 to July 1989 - Real Estate Appraiser with The JRS Company

Appraisals Have Been Made on the Following Types of Property

Single Family, Multiple Family, Raw Acreage, Industrial, Retail, Office, Motel, Subdivision, Leased Interest, and Special Purpose Appraisals, *e.g.*, Missed Easement, Blocked View, Soils Problems, Cracked Slabs, Eminent Domain, etc.

Miscellaneous Information

- Qualified as Expert Witness in Real Estate Appraisal in State of California Superior Court

Updated March 2019

GLOSSARY

Unless otherwise noted, all definitions are from the Appraisal Institute Dictionary of Real Estate Appraisal, 6th Edition.

Absolute Net Lease

A lease in which the tenant pays all expenses including structural maintenance and building reserves, and management; often a long-term lease to a credit tenant.

Absorption

1. Broadly, the process whereby vacant space in a property, a group of properties, or a market becomes occupied, either by leasing or by sales to owner-users.
2. In subdivision analysis, the process whereby lots or units in a subdivision are sold off.
3. In market analysis, short-term capture.

Access rights

1. The right of ingress to and egress from a property that abuts an existing street or highway; an easement in the street that adjoins abutting property; a private right, as distinguished from public right.
2. The right of a riparian owner to pass to and from the waters on which the premises border.

Americans with Disabilities Act (ADA)

A civil rights act passed by Congress guaranteeing individuals with disabilities equal opportunity in public accommodations, employment, transportation, government services, and telecommunications. Contained in the Act are a number of minimum access design characteristics affecting new and existing buildings including ramps and larger restroom accommodations. Statutory deadlines became effective on various dates between 1990 and 1997.

Appraisal

1. The act or process of developing an opinion of value; an opinion of value. An appraisal must be numerically expressed as a specific amount, as a range of numbers, or as a relationship (e.g., not more than, more than, not less than, less than) to a specified amount. (SVP)
2. (noun) the act or process of developing an opinion of value; an opinion of value. (adjective) of or pertaining to appraising and related functions such as appraisal practice or appraisal services. Comment: An appraisal must be numerically expressed as a specific amount, as a range of numbers, or as a relationship (e.g., not more than, not less than) to a previous value opinion or numerical benchmark (e.g., assessed value, collateral value). (USPAP, 2016-2017 ed.).

“As Is” Market Value

The estimate of the market value of real property in its current physical condition, use, and zoning as of the appraisal date.

Assemblage

1. The combining of two or more parcels, usually but not necessarily contiguous, into one ownership or use; the process that may create plottage value.
2. The combining of separate properties into units, sets, or groups, i.e., integration or combination under unified ownership.

Bundle Of Rights Theory

The concept that compares property ownership to a bundle of sticks with each stick representing a distinct and separate right of the property owner, e.g., the right to use real estate, to sell it, to lease it, to give it away, or to choose to exercise all or none of these rights.

Clear height

The dominant or typical vertical measurement from the floor of the structure to the bottom of the lowest overhead beam. Also called *clear headway*, *clear ceiling height*, or *clearance*.

Cost Approach

A set of procedures through which a value indication is derived for the fee simple estate by estimating the current cost to construct a reproduction of (or replacement for) the existing structure, including an entrepreneurial incentive or profit; deducting depreciation from the total cost; and adding the estimated land value. Adjustments may then be made to the indicated fee simple estate in the subject property to reflect the value of the property interest being appraised.

Cost to cure

The cost to restore an item of deferred maintenance to new or reasonably new condition.

Deferred Maintenance

Items of wear and tear on a property that should be fixed now to protect the value or income-producing ability of the property, such as a broken window, a dead tree, a leak in the roof, or a faulty roof that must be completely replaced.

Depreciation

1. In appraisal, a loss in property value from any cause; the difference between the cost of the improvements on the effective date of the appraisal and the market value of the improvements on the same date.
2. In accounting, an allocation of the original cost of an asset, amortizing the cost over the asset's life; calculated using a variety of standard techniques.

Discounted Cash Flow (DCF) analysis

The procedure in which a discount rate is applied to a set of projected income streams and a reversion. The analyst specifies the quantity, variability, timing, and duration of the income streams as well as the quantity and timing of the reversion and discounts each to its present value at a specified yield rate.

Dominant Estate

A property that is served or benefitted by an easement. The opposite of the servient estate, which granted the easement. Also known as the *dominant tenement* and the *servient tenement*, respectively.

Easement

The right to use another's land for a stated purpose.

Easement Appurtenant

An easement that is attached to, benefits, and passes with the transfer of the dominant estate; runs with the land for the benefit of the dominant estate and continues to burden the servient estate, although such as estate may be transferred to new owners.

Easement by Prescription

The right to use another's land, which is established by exercising this right openly, hostilely and continuously over a statutory period of time.

Effective Date

1. The date at which the appraisal or review opinion applies. (SVP)
2. In a lease document, the date upon which the lease goes into effect.

Encroachment

1. Trespassing on the domain of another.
2. Partial or gradual displacement of an existing use by another use, e.g., locating commercial or industrial improvements in a residential district.

Entitlement

In the context of ownership, use, or development of real estate, governmental approval for annexation, zoning, utility extensions, number of lots, total floor area, construction permits, and occupancy or use permits.

Entrepreneurial Incentive

The amount an entrepreneur expects to receive for his or her contribution to a project. Entrepreneurial incentive may be distinguished from entrepreneurial profit (often called *developer's profit*) in that it is the expectation of future profit as opposed to the profit actually earned on a development or improvement. The amount of entrepreneurial incentive required for a project represents the economic reward sufficient to motivate an entrepreneur to accept the risk of the project and to invest the time and money necessary in seeing the project through to completion.

Entrepreneurial Profit

1. A market-derived figure that represents the amount an entrepreneur receives for his or her contribution to a project and risk; the difference between the total cost of a property (cost of development) and its market value (property value after completion), which represents the entrepreneur's compensation for the risk and expertise associated with development. An

- entrepreneur is motivated by the prospect of future value enhancement (i.e., the entrepreneurial incentive). An entrepreneur who successfully creates value through new development, expansion, renovation, or an innovative change of use is rewarded by entrepreneurial profit. Entrepreneurs may also fail and suffer losses.
2. In economics, the actual return on successful management practices, often identified with coordination, the fourth factor of production following land, labor, and capital; also called *entrepreneurial return* or *entrepreneurial reward*.

Excess Land

Land that is not needed to serve or support the existing use. The highest and best use of the excess land may or may not be the same as the highest and best use of the improved parcel. Excess land has the potential to be sold separately and is valued separately.

Expense Stop

A clause in a lease that limits the landlord's expense obligation, which results in the lessee paying operating expenses above a stated level or amount.

Exposure Time

1. The time a property remains on the market.
2. The estimated length of time the property interest being appraised would have been offered on the market prior to the hypothetical consummation of a sale at market value on the effective date of the appraisal; a retrospective opinion based on an analysis of past events assuming a competitive and open market.

Exposure time is always presumed to occur prior to the effective date of the appraisal. The overall concept of reasonable exposure encompasses not only adequate, sufficient and reasonable time but also adequate, sufficient and reasonable effort. Exposure time is different for various types of real estate and value ranges and under various market conditions. (Appraisal Standards Board of The Appraisal Foundation, Statement on Appraisal Standards No. 6, "Reasonable Exposure Time in Real Property and Personal Property Market Value Opinions")

Market value estimates imply that an adequate marketing effort and reasonable time for exposure occurred prior to the effective date of the appraisal. In the case of disposition value, the time frame allowed for marketing the property rights is somewhat limited, but the marketing effort is orderly and adequate. With liquidation value, the time frame for marketing the property rights is so severely limited that an adequate marketing program cannot be implemented. (The Report of the Appraisal Institute Special Task Force on Value Definitions qualifies exposure time in terms of the three above-mentioned values.)

Extraordinary Assumption

An assumption, directly related to a specific assignment, as of the effective date of the assignment results, which, if found to be false, could alter the appraisers' opinions or conclusions. Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis.

Fair Market Value (FMV)

The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.²⁷

Fee Simple Estate

Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.

FEMA Map

A flood zone map created by the Federal Emergency Management Agency (FEMA). Sometimes called a *FIRM*, or *flood insurance rate map*.

Flex Space

Industrial space designed to allow flexible conversion of warehouse or manufacturing space to a higher percentage of office space. Alternatively known as a service center or tech space.

Floor Area Ratio (FAR)

The relationship between the above-ground floor area of a building, as described by the building code, and the area of the plot on which it stands; in planning and zoning, often expressed as a decimal, e.g., a ratio of 2.0 indicates that the permissible floor area of a building is twice the total land area.

Going Concern Premise

One of the premises under which the total assets of a business can be value; the assumption that a company is expected to continue operating well into the future (usually indefinitely).

Grant Deed

A deed containing, or having implied by law, some but not all of the usual covenants of title; esp., a deed in which the grantor warrants that he or she (1) has not previously conveyed the estate being granted, (2) has not encumbered the property except as noted in the deed, and (3) will convey to the grantee any title to the property acquired after the date of the deed.

Gross Building Area (GBA)

1. The total floor area of a building, excluding unenclosed areas, measured from the exterior of the walls of the above-grade area. This includes mezzanines and basements if and when typically included in the market area of the type of property involved.
2. Gross leasable area plus all common areas.
3. For residential space, the total area of all floor levels measured from the exterior of the walls and including the super-structure and substructure basement; typically does not include garage space.

²⁷*United States v. Cartwright*, 411 U. S. 546, 93 S. Ct. 1713, 1716-17, 36 L. Ed. 2d 528, 73-1 U.S. Tax Cas. (CCH) ¶ 12,926 (1973) (quoting from U.S. Treasury regulations relating to Federal estate taxes, at 26 C.F.R. sec. 20.2031-1(b)).

Gross Lease

A lease in which the landlord receives stipulated rent and is obligated to pay all of the property's operating and fixed expenses.

Gross Living Area (GLA)

Total area of finished, above-grade residential space; calculated by measuring the outside perimeter of the structure and includes only finished, habitable, above-grade living space.

Ground Lease

A lease that grants the right to use and occupy land. Improvements made by the ground lessee typically revert to the ground lessor at the end of the lease term.

Highest and Best Use

1. The reasonably probable and legal use of property that results in the highest value. The four criteria that the highest and best must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity.
2. The use of an asset that maximizes its potential and that is possible, legally permissible, and financially feasible. The highest and best use may be for continuation of an asset's existing use or for some alternative use. This is determined by the use that a market participant would have in mind for the asset when formulating the price that it would be willing to bid.
3. The highest and most profitable use for which the property is adaptable and needed or likely to be needed in the reasonable near future.

Hypothetical Condition

1. A condition that is presumed to be true when it is known to be false.
2. A condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis.
Note: Hypothetical conditions are contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis.

Income Capitalization Approach

Specific appraisal techniques applied to develop a value indication for a property based on its earning capability and calculated by the capitalization of property income.

Land-To-Building Ratio

The proportion of the land area to gross building area; one of the factors determining comparability of properties.

Leased Fee Interest

The ownership interest held by the lessor (landlord) which includes the right to receive the contract rent specified in the lease plus the reversionary rights when the lease expire.

Leasehold Interest

The right held by the lessee to use and occupy real estate for a stated term and under the conditions specified in the lease.

Legal Description

A description of land that identifies the real estate according to a system established or approved by law, and exact description that enables the real estate to be located and identified.

Legal Nonconforming Use

A use that was lawfully established and maintained, but no longer conforms to the use regulations of its current zoning; also known as a grandfathered use.

Lessee

One who has the right to occupancy and use of the property of another for a period of time according to a lease agreement.

Lessor

One who conveys the rights of occupancy and use to others under a lease agreement.

Market Area

The geographic region from which a majority of demand comes and in which the majority of competition is located. Depending on the market, a market area may be further subdivided into components such as primary, secondary, and tertiary market areas, or the competitive market area may be distinguished from the general market area.

Market Rent

The most probable rent that a property should bring in a competitive and open market reflecting all conditions and restrictions of the specified lease agreement including the rental adjustment and revaluation, permitted uses, use restrictions, and expense obligations, term, concessions, renewal and purchase options, and tenant improvements (TIs).

Market Value

A type of value that is the major focus of most real estate property appraisal assignments. Both economic and legal definitions of market value have been developed and refined, such as the following:

1. Consummation of a sale occurs as of a specified date.
2. An open and competitive market exists for the property interest appraised.
3. The buyer and seller are each acting prudently and knowledgeably.
4. The price is not affected by undue stimulus.
5. The buyer and seller are typically motivated.
6. Both parties are acting in what they consider their best interest.
7. Marketing efforts were adequate and a reasonable time was allowed for exposure in the open market.

8. Payment was made in cash in U.S. dollars or in terms of financial arrangements comparable thereto.
9. The price represents the normal consideration for the property sold, unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

Market Value (FIRREA definition)²⁸

The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated.
2. Both parties are well informed or well advised, and acting in what they consider their own best interests.
3. A reasonable time is allowed for exposure in the open market.
4. Payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto.
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

Master Lease

1. A lease in which the fee owner leases a part of the entire property to a single entity (the master lessee) in return for a stipulated rent. The master lessee then leases the property to multiple tenants.
2. The first lease in a sandwich lease.

Marketing Time

An opinion of the amount of time it might take to sell a real or personal property interest at the concluded market value level during the period immediately after the effective date of an appraisal. Marketing time differs from exposure time, which is always presumed to precede the effective date of an appraisal. (Advisory Opinion 7 of the Appraisal Standards Board of The Appraisal Foundation and Statement on Appraisal Standards No. 6, "Reasonable Exposure Time in Real Property and Personal Property Market Value Opinions" address the determination of reasonable exposure and marketing time.)

Modified Gross Lease

A lease in which the landlord receives stipulated rent and is obligated to pay some, but not all, of the property's operating and fixed expenses. In some markets, a modified gross lease may be called double (NN) lease, net-net lease, partial net lease, or semi-gross lease.

Multiplier

A figure that is multiplied by income to produce an estimate of value; called a gross income multiplier when gross income is used, a gross rent multiplier when gross rent is used, and a net income multiplier when net income is used; may be monthly or annual.

²⁸ <http://www.fdic.gov/regulations/laws/rules/2000-4300.html#fdic2000part323.2>

Net Lease

A lease in which the landlord passes on all expenses to the tenant.

Net-Net-Net Lease

An alternative term for a type of net lease. In some markets, a net-net-net (or NNN) lease is defined as a lease in which the tenant assumes all expenses (fixed and variable) of operating a property except that the landlord is responsible for structural maintenance, building reserves, and management. Also called NNN lease, triple net lease, or fully net lease.

Parking Ratio

A ratio of parking area or parking spaces to an economic or physical unit of comparison. Minimum required parking ratios for various land uses are often stated in zoning ordinances.

Pass-through

A tenant's portion of operating expenses that may be composed of common area maintenance (CAM), real property taxes, property insurance, and any other expenses determined in the lease agreement to be paid by the tenant. Also known as Reimbursable Expenses.

Percentage Rent

Rental income received in accordance with the terms of a percentage lease; typically derived from retail store and restaurant tenants and based on a certain percentage of their gross sales.

Perpetuity

1. Traditionally, an infinite level income stream.
2. In contemporary usage, a finite level income stream with its reversion equal to the present value.

Planned unit development (PUD)

A type of building development designed as a grouping of complementary land uses, such as housing, schools, recreation, retail, office, and industrial parks, contained within a single master development; usually includes common area and common area maintenance obligations in the form of owners association dues.

Prospective Market Value "As Completed" and "As Stabilized"

A prospective market value may be appropriate for the valuation of a property interest related to a credit decision for a proposed development or renovation project. According to USPAP, an appraisal with a prospective market value reflects an effective date that is subsequent to the date of the appraisal report. Prospective value opinions are intended to reflect the current expectations and perceptions of market participants, based on available date. Two prospective value opinions may be required to reflect the time frame during which development, construction, and occupancy will occur. The prospective market value-as completed-reflects the property's market value as of the time that development is expected to be completed. The prospective market value-as stabilized-reflects the property's market value as of the time the property is projected to achieve stabilized occupancy. For an income-producing property, stabilized occupancy is the occupancy level that a property is

expected to achieve after the property is exposed to the market for lease over a reasonable period of time and at comparable terms and conditions to other similar properties.

Prospective Opinion of Value

A value opinion effective as of a specified future date. The term does not define a type of value; instead, it identifies a value opinion as being effective at some specific future date. An opinion of value as of a prospective date is frequently sought in connection with projects that are proposed, under construction, or under conversion to a new use, or those that have not yet achieved sellout or a stabilized level of long-term occupancy.

Quitclaim Deed

A form of conveyance in which any interest the grantor possesses in the property described in the deed is conveyed to the grantee without warranty of title.

Raw Land

Land that is undeveloped; land in its natural state before grading, draining, subdivision, or the installation of utilities; land with minimal or no appurtenant constructed improvements.

Reimbursable Expenses

Real estate operating expenses that are subject to recovery from tenants; may include common area maintenance (CAM) charges, real estate property taxes, and property and casualty insurance.

Remaining Economic Life

The estimated period over which existing improvements are expected to contribute economically to a property; an estimate of the number of years remaining in the economic life of a structure or structural components as of the effective date of the appraisal; used in the economic age-life method of estimating depreciation.

Rentable Area

For office or retail buildings, the tenant's pro rata portion of the entire office floor, excluding elements of the building that penetrate through the floor to the areas below. The rentable area of a floor is computed by measuring to the inside finished surface of the dominant portion of the permanent building walls, excluding any major vertical penetrations of the floor. Alternatively, the amount of space on which the rent is based; calculated according to local practice.

Rent Concession

An inducement for a tenant to lease space, sometimes, but not always, observed in overbuilt markets, which can include above-standard TIs, free rent, moving cost reimbursements or credit, and buyout of the tenant's existing lease.

Replacement Cost

The estimated cost to construct, at current prices as of a specific date, a substitute for a building or other improvements, using modern materials and current standards, design, and layout.

Replacement Cost For Insurance Purposes

The estimated cost, at current prices as of the effective date of valuation, of a substitute for the building being valued, using modern materials and current standards, design and layout for insurance coverage purposes guaranteeing that damaged property is replaced with new property (i.e., depreciation is not deducted).

Reproduction Cost

The estimated cost to construct, at current prices as of the effective date of the appraisal, an exact duplicate or replica of the building being appraised, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, superadequacies, and obsolescence of the subject building.

Retrospective value opinion

A value opinion effective as of a specified historical date. The term *retrospective* does not define a type of value. Instead, it identifies a value opinion as being effective at some specific prior date. Value as of a historical date is frequently sought in connection with property tax appeals, damage models, lease renegotiation, efficiency judgments, estate tax, and condemnation. Inclusion of the type of value with this term is appropriate, e.g., "retrospective market value opinion."

Reversion

A lump-sum benefit that an investor receives or expects to receive upon the termination or sale of an investment; also called *reversionary benefit*.

Sales Comparison Approach

The process of deriving a value indication for the subject property by comparing sales of similar properties to the property being appraised, identifying appropriate units of comparison, and making adjustments to the sale prices (or unit prices, as appropriate) of the comparable properties based on relevant, market-derived elements of comparison. The sales comparison approach may be used to value improved properties, vacant land, or land being considered as though vacant when an adequate supply of comparable sales is available.

Sandwich lease

A lease in which an intermediate, or sandwich, leaseholder is the lessee of one party and the lessor of another. The owner of the sandwich lease is neither the fee owner nor the user of the property; he or she may be a leaseholder in a chain of leases, excluding the ultimate sublessee.

Servient Estate/Tenement

A property burdened by an easement; also known as the *servient tenement*. The *servient estate* is the opposite of the *dominant estate* (also known as the *dominant tenement*), which benefits from an easement.

Stabilized Occupancy

1. The occupancy of a property that would be expected at a particular point in time, considering its relative competitive strength and supply and demand conditions at the time, and

- presuming it is priced at market rent and has had reasonable market exposure. A property is at stabilized occupancy when it is capturing its appropriate share of market demand.
2. An expression of the average or typical occupancy that would be expected for a property over a specified projection period or over its economic life.

Surplus Land

Land that is not currently needed to support the existing use but cannot be separated from the property and sold off for another use. Surplus land does not have an independent highest and best use and may or may not contribute value to the improved parcel.

Usable Area

1. For office buildings, the actual occupiable area of a floor or an office space; computed by measuring from the finished surface of the office side of corridor and other permanent walls, to the center of partitions that separate the office from adjoining usable areas, and to the inside finished surface of the dominant portion of the permanent outer building walls. Sometimes called *net building area* or *net floor area*.
2. The area that is actually used by the tenants measured from the inside of the exterior walls to the inside of walls separating the space from hallways and common areas.

Utility Easement

The rights granted to use a portion of a property for utility lines, pipes, poles, guy wires, or other improvements.

Value In Use

The value of a property assuming a specific use, which may or may not be the property's highest and best use on the effective date of the appraisal. Value in use may or may not be equal to market value but is different conceptually.

Zoning

Public regulation of the use of private land through application of police power; accomplished by establishing districts or areas with uniform requirements relating to lot coverage, age, Public regulation of the use of private land through application of police power; accomplished by establishing districts or areas with uniform requirements relating to lot cover.

ATTACHMENT B – Tenant’s Proposed Site Plan

This Attachment should clearly describe and depict Tenant’s Equipment and operations as proposed, through diagrams, pictures, and text, and should state that it is a “proposed” draft, subject to Landlord’s written approval. Additionally, this Attachment should include the make and model information and specifications, including fuel storage capacity, for any proposed back-up power generators. Include any schedule requirements. This Attachment should be prepared by the Tenant.

LANDLORD: _____

TENANT: _____

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

CONSIDER APPROVAL OF AN AGREEMENT FOR OUT OF AGENCY SERVICE TO TRANSFER WATER AND WASTEWATER SERVICE FUNCTIONS FOR APN 123-230-46-00 FROM RAINBOW MUNICIPAL WATER DISTRICT TO FALLBROOK PUBLIC UTILITIES DISTRICT

BACKGROUND

The Agreement for Out-of-Agency Service (Agreement) concerns a parcel totaling 8.21 acres of land located within the Rainbow Municipal Water District (RMWD) Service Area. The parcel is located Southwest of the intersection of Mission Road and Mission Creek Road and is adjacent to the Boundary with Fallbrook Public Utilities District (FPUD). In order to serve water from RMWD to the parcel, the waterline would need to be extended across Mission Road which would be prohibitively expensive. FPUD operates an existing waterline in Mission Creek Road adjacent to the parcel's Northern property line. The property owner has requested to be served by FPUD. An Agreement for Out-of-Agency Service to arrange for FPUD to serve this parcel instead of RMWD is authorized pursuant to Government Code section 56133. Staff from both agencies have coordinated to finalize an Agreement for Out of Agency Service.

DESCRIPTION

The Agreement for Out-of-Agency Service to be approved by RMWD, FPUD, and the property owner allows for FPUD to supply water and/or Wastewater services to the property. The Agreement outlines the responsibilities of each agency as well as the responsibilities of the property owner. The property owners would be responsible for costs associated with the extension of FPUD's facilities as well as connection fees, other fees, and service charges. FPUD will provide water service for the benefit of the property and will be responsible for obtaining all necessary easements and dedications. RMWD will not have any responsibility for the assessment or payment of any fees, will not have any right or obligation to provide water services to the Property, and will not charge the property owners any service related fees or charges. In addition, the agreement states that RMWD will reasonably cooperate with any future detachment of the property from the RMWD service area and annexation into the FPUD service area. It is anticipated that San Diego LAFCO will formally annex the parcel into the FPUD service area at a future iteration of their Municipal Service Review process.

The Agreement will be taken first to the FPUD Board of Directors on May 24, 2021 for approval. The decisions made by the FPUD Board of Directors will be reported during the discussion of this item at the RMWD Board of Directors meeting.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area Five: Customer Service. This agreement is proposed as a way to benefit a property owner in the RMWD service area by allowing them to receive service from FPUD. FPUD's existing

facilities are closer and more convenient for connection for this particular property owner. Thus, this arrangement will result in less expense and delay for the property owner in connecting to a water service.

ENVIRONMENTAL

In accordance with CEQA guidelines Section 15378, the action before the Board does not constitute a “project” as defined by CEQA and further environmental review is not required at this time.

BOARD OPTIONS/FISCAL IMPACTS

Allowing the customer to connect to the FPUD facilities will not result in any costs to the District. As stated in the Agreement, the property owner will be paying connection fees and service fees to FPUD for providing service instead of paying RMWD. However, FPUD will also be bearing the cost and performing any future operations and maintenance associated with serving this parcel.

- 1) Option 1:
 - Approve the Agreement for Out-of-Agency Service to transfer Water and Wastewater service functions for APN 123-230-46-00 from Rainbow Municipal Water District to Fallbrook Public Utilities District.
 - Authorize the General Manager to execute the Agreement for Out-of-Agency Service on behalf of the District.
 - Make a finding that the action before the Board does not constitute a “project” as defined by CEQA.
- 2) Option 2:
 - Provide other direction to staff.

STAFF RECOMMENDATION

Staff Recommends Option 1.



Chad Williams
Engineering and CIP Program
Manager

05/25/2021

RECORDING REQUESTED BY:

Fallbrook Public Utilities District

WHEN RECORDED RETURN TO:

Fallbrook Public Utilities District
660 E. Mission Rd
Fallbrook, California 92028

Above Space for Recorders Use

APN:123-230-46-00

*Exempt from Filing Fees
Government Code § 27383*

AGREEMENT FOR OUT OF AGENCY SERVICE

This AGREEMENT FOR OUT-OF-AGENCY SERVICE (“Agreement”), dated _____, by and between Rainbow Municipal Water District (“RMWD”), a California municipal water district, and Fallbrook Public Utilities District (“FPUD”), a California public utility district for the provision of water services by FPUD to certain real property totaling 8.21 acres of land (the “Property”), located in the County of San Diego (“County”) within the adopted Fallbrook Community Plan Area and the RMWD services area, described as APN 123-230-46-00 at the intersection of South Mission Road and Mission Creek Road.

THE PARTIES HERETO AGREE AS FOLLOWS

1. FPUD will supply water and/or wastewater services to the Property under this Agreement. Said water will be provided from FPUD’s allocation of water from the San Diego County Water Authority or from FPUD’s own sources at FPUD’s sole discretion. This Agreement is authorized pursuant to Government Code section 56133.
2. If required to serve the Property, a water main shall be extended from the existing terminus of water main(s) to and across street frontage, if applicable, of the Property at Redge D. and Marci T. Bendheim, as property owners (“Owners”), sole cost and expense in accordance with FPUD’s standard specifications.
3. FPUD shall provide water service for the benefit of the Property and through meters installed and owned by FPUD at the standard rate for outside service to the Property area.
4. Upon the issuance of building permit(s), FPUD shall charge Redge D. and Marci T. Bendheim, as property owners, all current connection fees or other fees as may be charged to similar property owners within FPUD boundaries until FPUD and Owners have entered into an annexation agreement, provisions of which shall then control such fee assessments. RMWD shall bear no responsibility for the assessment and/or payment of said fees.
5. FPUD shall be responsible for obtaining all necessary easements and dedications.
6. RMWD shall have no right or obligation to provide water services to the Property, and shall not charge Owners any service related fees or charges.
7. RMWD shall not oppose or challenge FPUD’s ability or responsibility to provide water

services to the Property and shall reasonably cooperate with any future detachment of the Property from the RMWD service area and annexation into the FPUD service area.

8. This Agreement shall automatically terminate upon annexation of the Property to FPUD.
9. This Agreement may be assigned to any successors in interest without the consent of the other party.
10. This Agreement shall be and is a covenant running with the land, and all rights and obligations hereunder shall inure to the subsequent owners of the Property.

[Signatures on following page]

IN WITNESS WHEREOF, the parties have hereto caused this Agreement for Out-Of-Agency Service to be executed as of the date identified above.

Owner:

Redge Bendheim

Date

Rainbow Municipal Water District:

Tom Kennedy, General Manager

Date

Fallbrook Public Utility District:

Jack Bebee, General Manager

Date

(Signatures must be notarized. Notary form attached.)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of San Diego)

)

On _____, before me, _____, Notary Public personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed this instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____
Signature of Notary Public

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

DISCUSSION AND POSSIBLE ACTION TO APPROVE THE INSTALLATION OF A HELI-HYDRANT FIRE PROTECTION SYSTEM AT PALA MESA TANK SITE

BACKGROUND

While being beautiful and unique, living in the wildland-urban interface brings with it a genuine risk of wildfire, which under certain circumstances could deliver a severe economic blow to the District and its ratepayers. Wildfire is the primary natural hazard in our region, both in terms of potential severity and likelihood. Wildfires, unfortunately, are a natural part of California's landscape, in particular San Diego County. Drought conditions, warmer spring and summer temperatures, and reduced snowpack have created a more prolonged and more intense fire season this year.

Cal-Fire estimates that this year's fire season has increased by 75 days across the state. There have been thirty-two fires in the state during the current fire season, with five in San Diego County. Fire occurrence has steadily increased in Southern California, directly proportional to the human population growth as human activities cause most ignitions. Most fires start during the summer when coastal sage and chaparral vegetation have dried to a highly flammable state. However, fires that begin during the fall burn many more acres because flames are intensified and spread by hot, dry Santa Winds. Rainbow Municipal Water District service area is prone to wildfires and has experienced several large fires in the past to include the Rice fire, Gavilan Fire, and most recently, the Lilac Fire.

Before 2012 fire fighting helicopters would extract water from the reservoirs, which did not have covers on them. In 2012 floating covers were installed on three of the four reservoirs, and because of diminished water demands, Beck Reservoir was drained, taken out of service, and left uncovered. Fire fighting helicopters did not have access to these resources anymore and were forced to rely on seasonal ponds with our service area. Seasonal ponds are unreliable sources of water and can often clog suction lines with debris. There is also the issue of finding a pond that does not have power lines in the way and is deep enough to accommodate a bucket or snorkel.

DESCRIPTION

Since 1947, helicopters have been used to combat wildfires in California by supporting firefighters on the ground. In 1957, the Los Angeles County Fire Department began testing water drops from a suspended canvas bag. During the early 1960s, the California Division of Forestry (now known as CAL FIRE) began water bucket trials. In the 1980s, the snorkel was introduced to firefighting helicopters. Historically, helicopters have used lakes and ponds to dip and get water. This comes with inherent problems described above. Later, portable tanks were developed and have been used for decades. The drawback to this method is that this requires that the helicopter land be filled, and it also requires a ground crew. This takes valuable personnel and precious time away from the actual firefight.

The Heli-Hydrant was created by Whaling Fire Line Equipment to be the first pilot-controlled, remotely activated snorkel site in existence. By integrating Heli-Hydrant technology into the water distribution system, helicopter pilots will have efficient, permanent access to the water they always need. Locating Heli-Hydrants in strategic wildland-urban interface areas increases the likelihood of successfully suppressing fire with the initial attack crews. Heli-Hydrant's rate of water uptake makes it a valuable tool in a major attack.

Moving 200 to 2,500 gallons of water from the ground into a helicopter in a matter of seconds is no small feat. A vital feature of the patented Heli-Hydrant allows a helicopter pilot to remotely activate and fill a 12' diameter by 5' deep open water tank in 120 seconds. This tank is a permanent structure and part of the water system. To activate water uptake, the helicopter pilot signals the Heli Hydrant upon its approach. Once activated, the Heli-Hydrant tank begins to fill. The fill time varies depending upon the gallons per minute (GPM) and pounds per square inch (PSI) delivery from the primary water source. A float valve is part of the Heli-Hydrant and is secured to keep the tank topped off. Every Heli-Hydrant features remotely activated, helicopter pilot-controlled, radio-signaled drain valves. The Heli Hydrant uses redundant power sources to mitigate against a grid failure. Loss of electrical power to the Heli-Hydrant has minimal effect on operations. Options for alternative energy include rechargeable solar batteries, a solar power recharging system, as well as a manual switch.

Over the last six months, staff from RMWD, Cal-Fire, and North County Fire have worked diligently to find an ideal site for a Heli-Hydrant. The perfect site needs to conform to pilot preferences that include no power lines, elevated or on top of a hill, and a site that supplies a 360-degree view. Additionally, there must be adequate water pressure and volume so that the Heli-Hydrant can be refilled in a timely manner. Lastly, the site needs to be found on RMWD property, reducing the fiscal impact of buying the property. Several areas were evaluated to include inside Beck Reservoir and on top of the hill near Beck Reservoir. The district yard, Rainbow Hills Reservoir site, and Pala Mesa site. Pala Mesa was selected as it met all criteria. Cal-Fire flew the site to verify, and an on-site meeting was held with participating agencies to verify the site would meet all the requirements.

There is currently only one Heli-Hydrant in use which is in Yorba Linda. If approved, this will be the first Heli-Hydrant in the County and will supply unprecedented protection against wildfires to North San Diego County.

Note that staff has been working on this for several months and had planned to commence this project after the start of the FY22 fiscal year. However, due to exceptionally dry conditions, and predictions of a more active wildfire season than usual, staff is seeking Board approval to get started on this project as soon as possible so that we can commence procurement of the equipment. By starting now we should be able to have the project ready for use by the end of summer, when peak fire season gets started.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Areas:

One-Customers Service- - As the operator of the water system that provides fire suppression support for our customers through a network of pipelines and fire hydrants, the District plays an important role in the protection of life and property in our service area. With the ever-expanding range of fire season in our region, providing enhanced access to water for firefighting helicopters to protect the homes and properties of our customers is a crucial element of customer service.

Two-Asset Management- The Heli-Hydrant will transform the way fires are fought in North San Diego County by supplying a way to put water on fire sooner. Thus, reducing the negative impacts on life and property.

Four-Fiscal Responsibility-The Heli-Hydrant will supply firefighters with an added asset that can be used to protect critical infrastructures like pump stations, lift stations, and water tanks. Thus reducing costs to replace this critical infrastructure if it is lost to fire. The water used will also be metered, reducing the district's unmetered and unbilled water loss.

ENVIRONMENTAL

By the California Environmental Quality Act (CEQA) guidelines Section 15378, the action before the Board does not constitute a "project" as defined by CEQA. Further environmental review is not needed at this time.

BOARD OPTIONS/FISCAL IMPACTS

The cost for the Heli-Hydrant is \$149,728.00. District staff will grade the area and install associated piping. Locating the Heli-Hydrant on Pala Mesa reduces property acquisition costs to zero. North County Fire has budgeted funds for site preparation. Cal-Fire has agreed to clear the entire site of vegetation and maintain the site.

The Heli-hydrant will become a District asset and may affect the District ISO rating in a positive direction. Once approved by the Board, Heli-Hydrant will be added to the 5-year Capital Plan Proposed Budget for \$149,728 in FY 2021-22 and has an assigned project number of 600081.

The Board has several options:

1. Add the Heli-Hydrant project to the District's Capital Improvement Plan, appropriate \$149,728 from the Capital Reserve Fund, and authorize the General Manager to execute the contracts necessary to procure and install the equipment.
2. Provide feedback to staff so that this agenda item can be returned to a subsequent Board meeting
3. Determine that we should not proceed with the Heli-hydrant project.

STAFF RECOMMENDATION

Staff recommends approval of Option 1.



Robert Gutierrez, Operations
Manager

5/25/2021

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

DISCUSSION AND POSSIBLE ACTION REGARDING SPECIAL DISTRICT BALLOT FORM FROM SAN DIEGO LOCAL AGENCY COMMISSION (LAFCO) ALTERNATE SPECIAL DISTRICT MEMBER ON LAFCO COMMISSION

BACKGROUND

In February 2021, RMWD received notice serving as a call for nomination involving a vacant and unexpired term as alternate special district member on the San Diego Local Agency Formation Commission (LAFCO). In response to this notice, at their March 23, 2021 regular meeting, the RMWD Board of Directors voted to approve the nomination of Hayden Hamilton to serve as an alternate special district member.

DESCRIPTION

On May 10, 2021, San Diego LAFCO announced they had received a total of six nominees which were received/accepted by San Diego LAFCO and have since transitioned to conducting a mail election with ballots. They also announced a candidate forum for Thursday, May 20th hosted by the CSDA San Diego Chapter.

RMWD received the attached packet from LAFCO which was issued to 57 independent special districts in San Diego County inviting each district to cast a ballot. **Each district is to cast only one vote for each nominee** on the ballot and vote certification form to avoid being disregarded.

State Law specifies a district's vote is to be cast by its presiding officer, or an alternate member designated by the board and a valid signature is required on the ballot. A ballot received without signature will be voided. A minimum of **29** ballots must be received to certify that a legal election was conducted. A candidate for a special districts advisory committee member must receive at least a majority of the votes cast to be elected. The ballots will be kept on file in the LAFCO offices and will be made available upon request.

Ballots may be submitted by mail, courier, hand delivered, FAX, or via email. The deadline for receipts of the ballots by LAFCO is **Friday, July 2, 2021**.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

Strategic Focus Area Four: Fiscal Responsibility – LAFCO's actions can have significant fiscal impacts on the District, so the makeup of the Commission is important

ENVIRONMENTAL

In accordance with CEQA guidelines Section 15378, the action before the Board does not constitute a “project” as defined by CEQA and further environmental review is not required at this time.

BOARD OPTIONS/FISCAL IMPACTS

There are no known fiscal impacts of the election, though as noted above LAFCO’s actions can have significant impacts.

The Board has several options:

1. Vote for one of the listed nominees or a write-in of RMWD’s choice for an Alternate Member.
2. Do not participate in the LAFCO election.

STAFF RECOMMENDATION

Staff supports direction.



Tom Kennedy, General Manager

May 25, 2021



San Diego County
Local Agency Formation Commission
 Regional Service Planning | Subdivision of the State of California

BALLOT FORM

May 5, 2021

TO: Independent Special Districts in San Diego County

FROM: Tamaron Lockett, Commission Clerk

SUBJECT: **Ballot Form | Election to Alternate Special District Member on LAFCO Commission**

On February 22, 2021, the San Diego Local Agency Formation Commission (LAFCO) solicited nominations pursuant to Government Code Section 56332(c)(1) to fill a vacant and unexpired term as an alternate special district member on the LAFCO Commission. A total of six nominations were received following a 60-day filing period. The term expires on May 1, 2023.

San Diego LAFCO is now issuing ballots to all 57 independent special districts in San Diego County and inviting each district to cast a ballot. Write-in candidates are permitted, and spaces have been provided for that purpose. **Only cast one vote for each nominee on the ballot and vote certification form; a ballot that is cast for more than indicated number of positions the vote will be disregarded.** The ballot and vote certification form along with nominee resumes provided by the candidates are attached.

State Law specifies a district’s vote is to be cast by its presiding officer, or an alternate member designated by the board and a valid signature is required on the ballot. **A ballot received without a signature will be voided.** A minimum of 29 ballots must be received to certify that a legal election was conducted. A candidate for a special districts advisory committee member must receive at least a majority of the votes cast to be elected. The ballots will be kept on file in this office and will be made available upon request.

Ballots may be submitted by mail, courier, hand delivered, FAX or via email to tamaron.lockett@sdcountry.ca.gov. The deadline for receipts of the ballots by LAFCO is **Friday, July 2, 2021**, any ballots received after the deadline will be voided. All election materials are available on the website: www.sdlafco.org. Should you have any questions, please contact me at (858) 614-7755.

Tamaron Lockett
 Commission Clerk

- Attachments:
 1) Ballot and Vote Certification form
 2) Nominee Resumes

Administration
 Keene Simonds, Executive Officer
 County Operations Center
 9335 Hazard Way, Suite 200
 San Diego, California 92123
 T 858.614.7755 F 858.614.7766
www.sdlafco.org

Vice Chair Jim Desmond
 County of San Diego
Nora Vargas
 County of San Diego
Joel Anderson, Alt.
 County of San Diego

Mary Casillas Salas
 City of Chula Vista
Bill Wells
 City of El Cajon
Paul McNamara, Alt.
 City of Escondido

Chris Cate
 City of San Diego
Marni von Wilpert, Alt.
 City of San Diego

Jo MacKenzie
 Vista Irrigation
Barry Willis
 Alpine Fire Protection
Vacant, Alt.
 Special District

Chair Andy Vanderlaan
 General Public
Harry Mathis, Alt.
 General Public

ATTACHMENT A

NOMINATION OF THE SPECIAL DISTRICT REPRESENTATIVE
FOR THE SAN DIEGO LOCAL AGENCY FORMATION COMMISSION
ALTERNATE MEMBER

The TCHD* is pleased to nominate Rocky T. Chavez as a
(Name of Independent Special District) (Name of Candidate)

Candidate for the San Diego Local Agency Formation Commission as an alternate special district member with a term expiring in 2023.

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that:

- The nominee is a member of a legislative body of an independent special district whom resides in San Diego County.

Rocky T. Chavez
(Presiding Officer Signature)

Rocky T. Chavez
(Print name)

Board Chair
(Print Title)

3-25-21
(Date)

PLEASE ATTACH RESUME FOR NOMINEE

- Limit two-pages
- Must be submitted with Nomination Form

* Tri-City Healthcare District

RECEIVED

APR 22 2021

SAN DIEGO LAFCO

ROCKY J. CHAVEZ

I was born in California and graduated from California State University, Chico with a degree in English in 1973. I enlisted in the Marine Corps in July 1973 and commissioned in 1974. I served 28 years in the Marine Corps and served in all four Marine Divisions. I retired in Camp Pendleton in 2001 as a Colonel.

I was the Commanding General's Representative to the Oceanside Unified School District (OUSD) Board from 1999-2001. I was also the Commanding General's Representative to Oceanside, Vista and Fallbrook from 1999-2001. My last billet at Camp Pendleton was Assistant Chief of Staff for Logistics.

In 2001 I was hired by OUSD to be the director of School of Business and Technology; I held that position until 2007.

I was elected to the Oceanside City Council in 2002 and served on the Council until 2009. While on the City Council, I was the city representative for North County Transit District.

In 2009 I was appointed the Undersecretary of the California Department of Veterans Affairs (CDVA) by Governor Schwarzenegger. I served until May 2011.

In 2012, I was elected to the California State Assembly for the 76th Assembly District and was honored to serve 3 terms. As the Assemblymember I sat on the Education Committee, Higher Education Committee, Budget Committee, Energy Committee, Health Care Committee and Veterans Committee.

In 2018 I was elected to the Tri City Medical Center Board of Directors and I am currently the Chair of the Board.

Over the decades, I have been involved in community, state and national groups. I was the El Camino High School Wrestling Coach from 1999-2001, Rotarian from 1998-2010, Knights of Columbus from 2004-current, Governor's Military Council from 2013-2021 (Chair from 2017-2021), and Board Member of the Association Defense Communities from 2018-2021.

My wife Mary and I live in Oceanside. We have three children who all are college graduates. We also have four grandchildren.

ATTACHMENT A

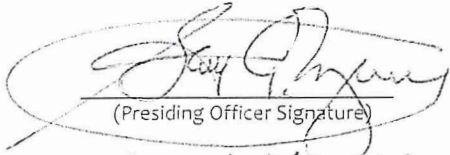
NOMINATION OF THE SPECIAL DISTRICT REPRESENTATIVE
FOR THE SAN DIEGO LOCAL AGENCY FORMATION COMMISSION
ALTERNATE MEMBER

The Mission Reservoir Conservation Dis is pleased to nominate HEATHER CONKLIN as a
(Name of Independent Special District) (Name of Candidate)

Candidate for the San Diego Local Agency Formation Commission as an alternate special district member with a term expiring in 2023.

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that:

- The nominee is a member of a legislative body of an independent special district whom resides in San Diego County.


(Presiding Officer Signature)

SCOTT A. MURRAY
(Print name)

PRESIDENT BOARD OF DIRECTORS
(Print Title)

4/23/2021
(Date)

PLEASE ATTACH RESUME FOR NOMINEE

- Limit two-pages
- Must be submitted with Nomination Form

RECEIVED
APR 23 2021
SAN DIEGO LAFCO

Heather Conklin

Candidate for the Special District Representative (Alternate) for the San Diego Local Agency Formation Commission (SDLAFCO)

Living in San Diego County for almost 12 years, I have developed a deep appreciation for what makes San Diego County special, including its geographic diversity, rich natural resources, critical habitats, and a strong regional economy.

My passion for public service is driven by my desire to promote informed policymaking that balances the diverse needs of stakeholders and the public, and reflects the principles of good governance. I bring a broad background in public policy, communications, and research to my role in public service.

Since being appointed as a Director for Mission Resource Conservation District in 2019, I've worked diligently to deepen collaborations within the district, expand public outreach, and support adaptation to meet changing organizational and district needs due to the COVID-19 pandemic.

Having served as a District Director with the California State Assembly, I worked collaboratively with local, state, and federal leaders on legislation and projects focused on transportation and addressing climate change in the region and statewide. In addition to legislative experience, I bring experience in research across various policy topics, including agriculture, water conservation, and sustainable development, which gives me a deeper understanding of key local issues. This framework allows me to analyze complex, multi-faceted issues and develop creative solutions that meet specific goals and fit within the "bigger picture."

Public service also requires strong community connections, which I have developed through community volunteerism, including working to address homelessness, and supporting native habitats and sustainable landscaping practices. I also promote and support effective science communication, specializing in science communication for policy and public engagement in science. My community connections, combined with my statewide perspective, provide a strong local focus.

I hold a Master of Public Administration (M.P.A.) from the University of Southern California, School of Policy, Planning, and Development; a Master of Arts (M.A.) in Political Science from the University of California at Riverside; and a Bachelor of Arts (B.A.) in Communication from the University of California at Davis. Currently, I am completing my Ph. D. at Claremont Graduate University, specializing in research methods.

In serving as the Special District Representative (Alternate) for the San Diego Local Agency Formation Commission (SDLAFCO), I will provide forward-thinking leadership to further the Commission's goals of benefiting residents, landowners, and the public in San Diego County.

I respectfully ask for your vote.

ATTACHMENT A

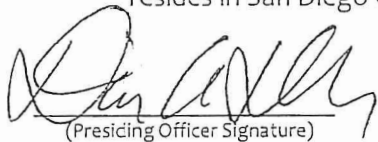
NOMINATION OF THE SPECIAL DISTRICT REPRESENTATIVE
FOR THE SAN DIEGO LOCAL AGENCY FORMATION COMMISSION
ALTERNATE MEMBER

The Rincon del Diablo Municipal Water Dist. is pleased to nominate David A. Drake as a
(Name of Independent Special District) (Name of Candidate)

Candidate for the San Diego Local Agency Formation Commission as an alternate special district member with a term expiring in 2023.

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that:

- The nominee is a member of a legislative body of an independent special district whom resides in San Diego County.


(Presiding Officer Signature)

David A. Drake
(Print name)

President
(Print Title)

March 23, 2021
(Date)

PLEASE ATTACH RESUME FOR NOMINEE

- Limit two-pages
- Must be submitted with Nomination Form

RECEIVED
MAR 24 2021
SAN DIEGO LAFCO

March 24, 2021

Dear Special District Members,

LAFCO provides a critical function for the management of public services in San Diego County. The Special Districts in the County have a unique and compelling mission to provide those services for the benefit of our citizens. The boundary and service issues we face require close attention to detail and a broad scope view of the mission.

My experience with the Rincon del Diablo Municipal Water District, since 2006, has been an excellent environment for understanding the complexities and achievements of public service. I am currently the President of the Board of Directors and have served as Vice President and Treasurer. My public service includes chairing the Escondido Planning Commission and serving as an Executive Committee member of the Association of California Water Agencies Joint Powers Insurance Authority. Previously, I represented the City of Escondido on the Board of Directors of the San Diego County Water Authority for nine years. I didn't just learn about public service, I lived it for 30 years.

LAFCO is a key part in the dynamic management of our service domain. Our environment is under continuous change and we must understand these changes and respond to them with effective solutions. My commitment to you is honesty, integrity, and hard work to assure that all of our constituents are treated with equity and fairness.

I seek your support for the Alternate Special Districts Member on the Local Agency Formation Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "David A. Drake". The signature is fluid and cursive, with a large initial "D" and "A".

David A. Drake
President, Board of Directors
Rincon del Diablo Municipal Water District
daviddrake@rinconwater.org

David A. Drake
Qualifications for Alternate Special Districts Member of
the Local Agency Formation Commission (LAFCO)



Current Responsibilities

Mr. Drake has served the Rincon del Diablo MWD (Rincon Water) ratepayers since 2006 as the Director for Division 2. He currently serves and previously served from 2014-2016 as the President of the Board for Rincon Water, and is also a member of Sewer Committee and the Engineering and Long-Range Planning Committee, in addition to previously serving on the Audit Committee.

Director Drake has represented Rincon Water to the ACWA/JPIA since 2006, and currently serves on the JPIA Executive Committee and the Workers Compensation Committee. As an Executive Committee member, he has championed more detailed analysis and reconciliation of large health care invoices, thereby avoiding unnecessary expenses. In addition, he has submitted improvements for the Liability Program's application process and has promoted the development of an "early warning system" for districts at risk. Director Drake is also a founding member of the California Water Insurance Fund.

Past Service

- As a member of the Rincon Water Ad Hoc Committee, assisted in the negotiations for adjusting health care coverage, and reducing overall District costs, for current and retired Rincon employees
- Past Chair of the City of Escondido Planning Commission
- Served on the City of Escondido's Franchise Commission and General Plan Committee
- Represented the City of Escondido to the San Diego County Water Authority for nine years, wherein he served on the SDCWA Engineering and Administrative/Finance Committees
- Served as the San Diego FBI InfraGard President during 2004-2006

Employment

Currently, Chief Innovation Officer of Hadronex, Inc., in Escondido focusing on water system risk and cost reduction. In February 2021, Hadronex will be celebrating sixteen years of service to the water and wastewater industries. During this time Hadronex purchased over \$300,000 in commercial insurance.

- Pointsource Technologies, Inc. - Vice President of Engineering 2001-2005
- SAIC - Internet Services Architect 1997-2001
- Mitchell International - Vice President and Chief Information Officer 1993-1997
- Digital Equipment Corporation - San Diego Software Unit Manager 1985-1993
- Oak Industries - Manager of Engineering 1979-1985
- Caltech/NASA Jet Propulsion Laboratory – Member of the Technical Staff 1974-1979

Education and Recognition

- BS in Engineering, Caltech 1974, MSEE University of Southern California 2017
- Holds fourteen U.S. and five foreign patents
- Named by Water and Waste Digest as 2020 Industry Icon
- Member of the AWWA, AAAS, and Life Member of the IEEE
- Extra Class Radio Amateur AC6OA
- Graduate of the FBI and Justice Department Citizens Academy
- Mr. Drake has lived in Escondido since 1979 and has been married to Virginia for 37 years

Statement

LAFCO provides a critical function for the management of public services in San Diego County. The Special Districts in the County have a unique and compelling mission to provide those services for the benefit of our citizens. The boundary and service issues we face require close attention to detail and a broad scope view of the mission. My commitment to you is to serve with honesty, integrity, and hard work to assure that all constituents are treated with equity and fairness.

ATTACHMENT A

NOMINATION OF THE SPECIAL DISTRICT REPRESENTATIVE
FOR THE SAN DIEGO LOCAL AGENCY FORMATION COMMISSION
ALTERNATE MEMBER

The North County Fire Protection District is pleased to nominate Jeff Ekgan as a
(Name of Independent Special District) (Name of Candidate)

Candidate for the San Diego Local Agency Formation Commission as an alternate special district member with a term expiring in 2023.

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that:

- The nominee is a member of a legislative body of an independent special district whom resides in San Diego County.

John van Doorn

(Presiding Officer Signature)

John van Doorn

(Print name)

President, Board of Directors

(Print Title)

March 23, 2021

(Date)

PLEASE ATTACH RESUME FOR NOMINEE

- Limit two-pages
- Must be submitted with Nomination Form

RECEIVED
APR 26 2021
SAN DIEGO LAFCO

Jeff Egkan

PROFESSIONAL SUMMARY

Skilled team player with proven ability to communicate and work with varied groups within the community. Long-standing experience on political campaigns, including bond measures.

SKILLS

- Operations management
- Sales and marketing
- Business marketing
- Client relationship building
- Budgeting and cost control

EXPERIENCE

OWNER-OPERATOR, INTOTHEWOODS LLC, JUNE 2020 - CURRENT, BIG BEAR CITY, CA
Developed wedding/event venue concept.

- Met with prospective clients to present company offerings, discuss products, and manage calendar of events.

Owner-Operator, Egkan Family Farm, Jul 2013 - Current, Fallbrook, CA

Purchased existing, struggling avocado grove and made it a viable, producing grove.

Shop Steward, Western Conference of Teamsters, Aug 1998 - Dec 2013, San Diego, CA
Represented 100 union members in labor/management relations.

Negotiated two supplemental contracts on behalf of members.

Driver, United Parcel Service, Mar 1980 - Dec 2013, San Diego, CA

Worked for company in various capacities in multiple locations including: Los Angeles, Ontario and San Diego.

EDUCATION

Associate of Science, Political Science
Cerritos College - Norwalk, CA

May 1980

Pre-Law, **California State University Fullerton** - Fullerton, CA

Jeff Egkan

CIVIC ENGAGEMENT

Director, North County Fire Protection District, November 2020-Present

Labor Outreach Coordinator, KateForAssembly2020, February 2020-November 2020
Obtained and facilitated state-wide Labor Union endorsements and campaign contributions.

Vice-President, Voters Against Wasteful School Bonds, a state registered ballot committee, 2017-2018

Formulated ballot campaign strategy and served as media/social media Director.

Media/Social Media Director, CATE (Citizens for Accountability and Taxation in Education), 2016-2017

Formulated political strategy and messaging for ballot campaign.

Director of Tijuana Mission Outreach, St. Peter and St. Paul Catholic Church, Jan 1991 - Dec 1994, Rancho Cucamonga, CA

Planned and managed bi-annual trips to schools and clinics in Tijuana, Mexico B.C. Solicited and collected recurring monthly donations, raising \$50k/year and helping fund educational and medical facilities in Tijuana.

ATTACHMENT A

NOMINATION OF THE SPECIAL DISTRICT REPRESENTATIVE
FOR THE SAN DIEGO LOCAL AGENCY FORMATION COMMISSION
ALTERNATE MEMBER

The Rainbow Municipal Water District is pleased to nominate Hayden Hamilton as a
(Name of Independent Special District) (Name of Candidate)

Candidate for the San Diego Local Agency Formation Commission as an alternate special district member with a term expiring in 2023.

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that:

- The nominee is a member of a legislative body of an independent special district whom resides in San Diego County.


(Presiding Officer Signature)

Hayden Hamilton
(Print name)

Board President
(Print Title)

April 13, 2021
(Date)

PLEASE ATTACH RESUME FOR NOMINEE

- Limit two-pages
- Must be submitted with Nomination Form

RECEIVED

APR 13 2021

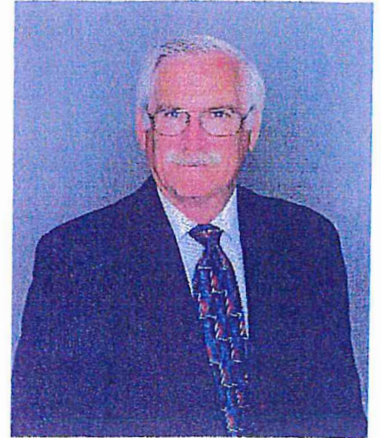
SAN DIEGO LAFCO

C. Hayden Hamilton

Email: hhamilton@rainbowmwd.com

Education

Bachelor of Science, Aerospace Engineering from The University of Texas at Austin
Masters of Science, Engineering Sciences from The University of Texas at Austin
Postgraduate Studies in Engineering and Business Administration



Professional Experience

20 years in Engineering software development and marketing
5 years in Document Management software development and marketing
10 years Consultant in Product Management and Product Marketing

Public Service

Elected to the Rainbow Municipal Water District (RMWD) Board of Directors 2016
Re-elected to the RMWD Board of Directors 2020

President of the RMWD Board of Directors – currently

I serve on an RMWD ad hoc committee working through the process with LAFCO to allow RMWD to contract with the Eastern Municipal Water District to be our wholesale water supplier. In LAFCO terms, to detach from the San Diego Water Authority and join Eastern. This move will save the district's ratepayers more than \$6 million per year and is critical to the district's existing agro-business. In this capacity, I have attended numerous LAFCO meeting in the last year and a half, and had the opportunity to address the LAFCO Board on one occasion.

Relevant Organizations Membership

California Special District Association (CSDA), 2017-Current

Association of California Water Agencies (ACWA), 2017-Current

Have been an active member in both these agencies including taking a series of CSDA leadership courses, participating in ACWA legislative days, and working with the General Manager to assure RMWD earned the CSDA District of Distinction Award.

Other

My wife and I have lived in north San Diego County for the past 37 years
(15 in Carlsbad, 22 in Bonsall)

San Diego LAFCO

Call for Nominations Alternate Special District Member Election on LAFCO

February 22, 2021

ATTACHMENT A

**NOMINATION OF THE SPECIAL DISTRICT REPRESENTATIVE
FOR THE SAN DIEGO LOCAL AGENCY FORMATION COMMISSION
ALTERNATE MEMBER**

The Valley Center Fire Protection District is pleased to nominate Regina Roberts as a
(Name of Independent Special District) (Name of Candidate)

Candidate for the San Diego Local Agency Formation Commission as an alternate special district member with a term expiring in 2023.

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that:

- The nominee is a member of a legislative body of an independent special district whom resides in San Diego County.

Phillip L. Bell
(Presiding Officer Signature)

Phillip L. Bell
(Print Name)

President, Board of Directors of VCFPD
(Print Title)

03/10/2021
(Date)

PLEASE ATTACH RESUME FOR NOMINEE -

- Limit two-pages
- Must be submitted with Nomination Form

RECEIVED

MAR 16 2021

SAN DIEGO LAFCO

Regina W. Roberts

Currently serving as a Member of the Board of Directors of the Valley Center Fire Prot. District. I feel I would be an asset to LAFCO bringing my analytical, innovative and team building abilities. Engineering, Design, Mechanical, Electrical, Manufacturing, Patents, Composites, Materials and Processes, Management, Contracts, Schedules, Cost Accounting, Science and Mathematics instruction are some of my areas of expertise.

Summary of Qualifications:

-Successfully manager. Responsible for many complex and technically challenging projects while meeting or exceeding commitments for quality, schedule, and cost.

-Experienced leader. Leads groups of 6 to 40 people.

-Sales generator. Creates enthusiasm in internal and external customers to support and fund projects.

-Published author, lead engineer, and leader in the application of manufacturing process computer control.

-Enjoys mastery of the design, installation, troubleshooting and certification of automation and processing equipment.

Employment History, Relevant Skills, and Experience:

2001 to 2020 (Retired) Owner/Chief Engineer - Roberts and Roberts Eng Services, LLC
Contract work on new machine design, chemical processes, machine maintenance, general design and computer control contracting. Manufacturing and Machine Assembly. Operator training.

2016 - Present

Senior Engineering Specialist - Product Design, Dynapac Design Group, Carlsbad, CA 92010.
Subcontractor (Roberts & Roberts (R & R) Engineering) for engineering design and manufacture of mechanical, optical, and electrical assemblies for new products, designed the control system for a multi-locker dispensing system and several other small design and manufacturing projects.

2013 - Present

Senior Engineering Specialist - Machine Design, Project Manager, Sandbags, LLC, Las Vegas NV. Subcontractor (R & R Engineering) and direct employee for product mechanical, electrical, and control design, and manufacturing of mobile sandbag factories, responsible for all electrical design and all mechanical in support of the electrical design. Traveled to the field to provide on-site support and training. Implemented a control system that was accessible on the internet while the machine was located in the field. Designed, retrofitted and built three different types of machines. Provided Technician support to manufacture the units. Currently providing on-call field support.

2005 - 2012

Manager of Engineering, Let's Go Robotics Inc. Carlsbad, CA 92008

Managed and trained several young engineers to work on multiple projects to support the development and manufacturing of robotic systems for the Biotech industry. Personally responsible for all manufacturing, design, integration, and software for all products. Prepared all system design and quotations for automation projects and often completed the final start up tasks when multiple disciplines were required.

2003 - 2005

Director of Operations RoboDesign International Inc. Carlsbad, CA 92008

Started as a Senior Engineering Project Manager working on new products, promoted to Operations Director and assumed responsible for all aspects of the operations and customer service departments.

1998 - 2015

Roberts & Roberts Engineering, Valley Center, CA 92082

Self-employed maintaining and providing design support for the Sulfuric Acid Reprocessor customers who were abandoned by the closure of IPEC-Athens. Extensive contract software and engineering support on projects for various other customers.

1993-1998

Engineering Manager: IPEC/Clean-Athens Corp. Oceanside, CA

Applied unique and different materials in the area of purification of Sulfuric Acid for semiconductor fabrication applications. Solved manufacturing, design, and scheduling problems for quartzware

Regina W. Roberts

distillation equipment used in sulfuric acid and other reprocessing. Designed quartzware for two new products and implemented into vendor production on schedule and at improved cost. Provided engineering lead for two new \$500,000 product start-ups. Managed interdisciplinary group of 20 Engineers and 3 Lab Technicians.
1979-1993

Mfg. Engineering Specialist Sr. Hughes Missile System Company, formerly General Dynamics Convair Division.

Summary of Experience

- Led the start-up of several classified programs in low observable and composites manufacturing for Department of Defense. Led design efforts for several new machine designs for commercial industry, in Reprocessing, Material Handling and Biotech automation. Typical tasks included coordination of design, planning, tooling, training, first article inspection, process validation, and computer control where applicable.
- Hand-picked to lead various on-site start-up teams due to wide-ranging knowledge of machines and processes. These start-ups were all over the world and required the overcoming of language barriers, differing work ethics, and measuring systems. All projects were completed on budget and on schedule.
- Managed a myriad of technical issues and sub-contractors to create a new composite manufacturing facility.
- Developed and implemented a plan for the integration of the composites facility into a single cohesive business unit in order to improve competitiveness and process control through automation, improved methods, and training, including construction of the facility, selection of equipment and certifying processes in a classified environment.
- Heavily involved in new program proposals including brain-storming, proposal activities, and/or prototype manufacturing of new products for 15 new programs.
- Initiated and managed research, development, and production contracts with budgets from \$25,000 to \$1,500,000 per year. These projects required the selection of all staff members, budgeting, scheduling, conflict resolution, problem solving, customer interface and technical oversight in order to ensure successful completion.
- Prepared proposals and cost estimates to procure new contracted research and development projects.
- Prepared numerous cost analyses for the justification of projects and equipment.
- Highly knowledgeable in the control of chemical and manufacturing processes, and programming of Computers and Programmable Logic Controllers.
- Highly skilled in the use of EXCEL, MS-WORD, SolidWorks, ACAD, MS-PROJECT, etc. to maximize personal and organizational efficiency.

Education:

- B. A. Chemistry, Minor in Economics University of California, San Diego, Revelle College
- Numerous Design and analysis classes attended at San Diego State University.
- Several Management and Accounting Classes at National University

Inventions:

- Co-Inventor on Patent 8038940 for "Automated machine for transferring solution from a source microwell plate to a destination microwell plate" issued October 18, 2011
- Co-Inventor on unissued patent for "Material Handling Machine" Docket Number 382329-000008 dated September 4, 2014
- Co-inventor on five other submitted patents, one for composites, two for processing of Sulfuric Acid and two for the digestion of extremely toxic materials and wastes with Sulfuric Acid. All patents applications were suspended when each of the businesses were sold.

Security Clearances:

Currently Inactive Top Secret Special Access Clearance at Hughes Missile Systems and General Dynamics Convair Division.

2021 SPECIAL DISTRICTS ELECTION
BALLOT and VOTE CERTIFICATION
FOR ALTERNATE LAFCO SPECIAL DISTRICT MEMBER

VOTE FOR ONLY ONE

Rocky J. Chavez []
(Tri-City Healthcare District)

Heather Conklin []
(Mission Resource Conservation District)

David A. Drake []
(Rincon del Diablo Municipal Water District)

Jeff Egkan []
(North County Fire Protection District)

C. Hayden Hamilton []
(Rainbow Municipal Water District)

Regina W. Roberts []
(Valley Center Fire Protection District)

Write-Ins

_____ []

_____ []

As presiding officer or his/her delegated alternate as provided by the governing board, I hereby certify that I cast the votes of the _____

(Name of Independent Special District)

at the 2021 Special Districts Selection Committee Election.

(Signature)

(Print Name)

(Date)

(Print Title)

Please note: The order in which the candidates' names are listed was determined by random selection.

The Ballot and Vote Certification form can be submitted electronically to: tamaron.luckett@sdcounty.ca.gov

MEETINGS/SEMINARS/CONFERENCES/WORKSHOPS

VARIABLE					
DATE	2021	MEETING	LOCATION	ATTENDEES	POST
June	10	SDCWA Special Board Meeting	SDCWA	GM	N/A
June	*	CSDA – San Diego Chapter	The Butcher Shop – 6:00 p.m. 5255 Kearny Villa Road San Diego, CA 92123	Mack	N/A
June	*	LAFCO Special Meeting	County Admin Center, Room 302 – 9:30am	(As Advised by GM)	N/A
June	*	Santa Margarita River Watershed Watermaster Steering Committee	Rancho California Water District	Hamilton	N/A

* To Be Announced

MEETINGS/SEMINARS/CONFERENCES/WORKSHOPS

RECURRING					
DATE	2021	MEETING	LOCATION	ATTENDEES	POST
June	*	San Luis Rey Watershed Council	Pala Administration Building 1:00 p.m.	Appointed Director	N/A
June	2	Engineering & Operations Committee Meeting	RMWD Board Room 3:00 p.m.	Appointed Director, General Manager	5/27
June	3	Communications & Customer Service Committee Mtg.	RMWD Board Room 3:30 p.m.	Appointed Director, General Manager	5/27
June	7	LAFCO	County Admin. Center Room 302 9:00 am	As Advised by GM	N/A
June	8	Budget & Finance Committee Mtg.	RMWD Board Room 1:00 p.m.	Appointed Director, General Manager	5/27
June	15	Council of Water Utilities	The Butcher Shop – 8:00 a.m. 5255 Kearny Villa Road San Diego, CA 92123	All Directors, General Manager	N/A
June	15	SDCWA GM's Meeting	SDCWA, San Diego 9:00 a.m.	General Manager	N/A
June	18	NC Managers	Golden Egg 7:45 a.m.	General Manager	N/A
June	22	RMWD General Board	RMWD Board Room (Start Time to Be Determined)	All Directors	6/15
June	23	North County Work Group (NCWG)	Rincon Del Diablo, Escondido 7:30 a.m.	General Manager	N/A
June	24	SDCWA Full Board Meeting	SDCWA Board Room, 3-5 p.m.	General Manager	N/A

MEETINGS/SEMINARS/CONFERENCES/WORKSHOPS

- **CHANGES – ADDITIONS - DELETIONS:**

~NOTE~ Some or all the meetings listed may be held via teleconference, video conference, or cancelled due to the current COVID-19 situation. Please contact the District with any inquiries.

BOARD OF DIRECTORS

May 7, 2021

SUBJECT

Operations Report for April 2021

DESCRIPTION

Activities for Operations & Maintenance Division

CONSTRUCTION & MAINTENANCE DEPARTMENT:

	Repairs	Installations	Leaks
Mainline	4	2 (2000' + 120')	4
Service	2		2
Hydrants	1	4	1
Valves		4	
Meters		2	
Blow-Offs			
Air Vacs			
Annual Totals	20	50 (2120')	12

- Assisted with Water Service Upgrade Project (WSUP).
- Finished Dentro de Lomas PRS, 100% complete minus fencing and paint.
- Started laying 2000' of 8" C900 at Rainbow Heights/Cal Fire (80% complete).
- Started laying 120' of 12" CMLC at Pala Mesa Creek (90% complete).
- Tested Clow LP619 Break Away Hydrant check valve.

WATER OPERATIONS AND VALVE MAINTENANCE DEPARTMENT:

Water Operations:

- Morro Reservoir disinfected and Bac-T samples collected to bring online.
- Completed quarterly district tank inspections.
- Performed (0) fire flow tests. **Total for year (1)**
- Collected all tank/reservoirs nitrification samples.

- Performed routine maintenance/rebuilding on (13) pressure stations CLA VAL's.
- Portable pump skid installed at Rainbow Hills PS, for inflation/cleaning of Rainbow Hills Res.

Valve Maintenance:

Monthly Totals	Valves (Distribution)	Appurtenance Valves	Annual Totals
Exercised	51	66	408
Inoperable	6	2	29
Repaired	0	0	0
Replaced	0	0	3
Installed	0	0	0

Valve Maintenance completed and/or oversaw the following:

- 153 utility locates completed- **Annual Total (599).**
- Assisted with (10) shutdowns- **Annual Total (30).**
- Raised (0) fire hydrants (installed breakaway spools).
- Replaced (4) air/vacs (2) wharf heads (0) Fire hydrants (0) gate valve.
- Painted 71 appurtenances- **Annual Total (261).**

METERS DEPARTMENT:

Current Projects:

- Water Service Upgrade Project
- Concord is in route **51,52** and will continue in **7, 21 and 29.**
- **4,422** (51%) meters have been replaced by Concord.

Backflows:

- **792** tested last month and **2,444** backflow inspections completed this year.

Customer Service Requests:

- **732** total resolved requests/check bills for the month of February. **3,824** Year to date total Service requests/ check bills.

WASTEWATER:

Monthly, Semi Annual and Annual Reports: California Integrated Water Quality System (CIWQS): Confirmation # 2597947 Reported "No Spill Report" for Month: April 2021.

CIWQS – Update 2021 5 Year SSO Sewer Management Plan (SSMP) into State Water Board portal.

Customer Service:

April 27,2021- Address: 3914 Flower wood Lane cust cannot flush. Responded to service call inspected private sewer lateral. Found customer 3" service lateral collapsed advised to contact plumber who repairs sewer systems.

Lift Stations:

E.A.M# 1859830 / April 14,2021 – Stallion flow meter not responding zeroing pump data. Made confined space entry and cleaned out doppler sensor unit and leveled flow meter bracket. Utility Science performed recalibration.

EAM # 185541 / April 23,2021 – EAM W/o # 'Standby generator failure. Global power technicians found the following issues: Engine tune up, radiator coolant flush and removing and replacing generator emissions muffler.

Collection System:

EAM W/O # 190484 / 4-27-2021 – FPUD assisted Rainbow MWD 12" sewer line surcharged at Hwy 76 and River Village 8" sewer line. 12" vcp sewer line overcomes 8" vcp causing sewage to back up. Flushed out and

PROJECTS:

North River Road Phase II punch list: Rainbow MWD hold flows upstream and work alongside Southwest pipeline.

April 1,2021, April 2,2021 and April 5,2021

Mutual Aid: Month of April 2021

April 2021 – Fallbrook Public Utility responded to Rainbow surcharged sewer line.
April 2021 – Utility Science - Flowmeter

Robert Gutierrez 5/7/2021
Operations Manager

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

Engineering Report for April 2021

DESCRIPTION

CAPITAL PROJECTS:

Dentro De Lomas Road Repair (Kirk Paving): The preconstruction meeting was held on 5/7/21 with District staff, County Staff and the contractor. The contractor is in procuring the County ROW permit which should be issued in late May with construction start shortly thereafter. The project will be completed in 1 week.

Hutton and Turner Pump Stations (Hoch Consulting): The Consultant is working on the preliminary design for both sites. A survey was completed of the Hutton site and a legal description and plat map are being developed in preparation for the easement acquisition. Additionally, an appraisal of the Hutton site will be completed in May 2021. A geotechnical investigation was completed at the Turner site on 5/13/21 to determine the presence of rock. After receiving the geotechnical report, work will proceed with the easement acquisition including survey, legal description and appraisal.

Quiet Title: District staff is working with Legal Counsel on this project. The attorneys have served all known decedents of the original property owners. The District issued an order for service by publication and there were, no responses. The District provided a default judgment to the court. KDM Meridian is performed the Record of Survey. The record of survey was submitted to the county but placed on hold because of COVID-19 related delays in Court processing. After District Counsel completes the Quiet Title action and resolves the boundary issues, the record of survey will be finalized. Due to the COVID-19 restrictions, the Quiet Title action continues to be delayed. A legal description document to be included in the record of survey was prepared and sent to counsel. The next step is requesting a Court Judgement.

Morro Reservoir Disinfection System Upgrade (Stevie-D-Services): The consultant's report is complete. District staff are completing site modifications to incorporate modified Ammonia and Chlorine injection equipment and the consultant is working on the SCADA programming to use the modified Ammonia and Chlorine injection. This work is expected to be completed in mid-June 2021 and tested after completion of the Morro Reservoir Mixing System (CPC Systems) at the same time.

Morro Reservoir Mixing System (CPC Systems): All of the mixers (9 each) are installed in the reservoir. Additional electrical upgrades and the first electrical panel will be installed the week of May 17, 2021. The remaining 2 electrical panels are scheduled to be installed and the system operational by mid-June 2021.

North River Road Sewer Pipe Lining (Southwest Corporation): All punch list work is complete. The Notice of Completion is going to the Board at the June 2021 meeting. The warranty will be extended to two years from the NOC.

North River Road Sewer Manhole Rehabilitation (Sancon): This project includes the removal and replacement of concrete manhole rings, cast-iron manhole frames and covers, and concrete collars for sewer manholes, ranging in depth from 7-feet to 24-feet below ground surface (bgs) on the 15-inch diameter VCP sanitary sewer pipeline along North River Road between Mission Road (upstream) and Stallion Drive (downstream).

The Board of Directors approved the contract award to Sancon Technologies at the April 27, 2021. Staff issued the notice of award; the contractor has 10 days to submit the contract documentation. Additionally, the CEQA Notice of Exemption was filed with the County of San Diego.

Pipeline Upgrade Project (PUP) No. 1 (Omnis Consulting): This project has been divided into multiple bid packages. The Bid documents for the Gird Road Water Pipeline Improvements, Eagles Perch Water Pipeline Improvements, and Via Vera Water Pipeline Improvements have been completed and are ready for bid. These projects have been placed on the CIP schedule to be bid out accordingly.

Pipeline Upgrade Project (PUP) No. 2 (Harris & Assoc.): Consultant is working on the 90% design and CEQA documentation for the remaining pipe segments.

Pressure Reducing Station Projects: The installation of the pressure reducing station at Almendra Court was completed in April 2021. There were a few punch list items that District staff is working on such as irrigation and landscaping; however, the pressure reducing station has been installed and is in operation. The next two pressure reducing stations are planned for installation at the Pala Mesa Resort. Work is anticipated to commence in May 2021.

Programmatic Environmental Impact Report (Helix Env.): District staff has been working closely with Helix Environmental in the preparation of the Draft Programmatic Environmental Impact Report. Helix Environmental has completed reviewing all the potable and sewer pipe locations and the type of environmental analysis that will be required for future construction projects. Presentations to the E&O Committee and the Board of Directors were given in April 2021 showing the work that has been accomplished. The next step will be to finalize the CIP list of projects to be analyzed and work towards a notice of preparation and public presentation.

Rainbow Heights Pump Station Replacement (Orion Construction Corp): The contractor has started construction and is expected to begin testing in late June 2021.

Rainbow Heights Road Pipe Installation - Cal-Campfire: District staff is working on an in-house installation of an 8-inch PVC water line towards the end of Rainbow Heights Road to extend the District's existing transmission main close to Cal-Campfire. Installation of about 2,000 linear feet of piping was installed and four fire hydrants. Work was completed in house with additional punch list items to be completed in May 2021.

Rainbow Valley Blvd. Cathodic Protection (Corrpro,Co., Inc): The project is for design services for cathodic protection of the transmission main starting at Rainbow Heights Pump Station to Rainbow Hills Pump Station along 8th Street, Rainbow Valley Road, and Frontage Road. Staff received and reviewed the 90% design in April 2021 and will be working on putting together a bid package in May 2021 for this project.

Rice Canyon Tank Transmission Line (Dexter Wilson Eng.): The Consultant is completing the final design. Final design is expected in May 2021.

Thoroughbred and Schoolhouse Lift Stations (Kennedy Jenks Assoc.): Consultant is moving forward with design of the following: 1. Thoroughbred Lift Station, 2. Force Main from Thoroughbred Lift Station to Old River Road, 3. Olive Hill Road Gravity Main Improvements (appurtenant to Lift Station), and 4. Upsize of existing Sewer Line along Highway 76. The 90% project design was completed in April 2021 and released for District's staff review. The project design is scheduled to be completed by the end of this fiscal year.

Urban Water Management Plan (Brown & Caldwell): The District is required to update its 2015 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) to meet California Water Code every 5 years. The District hired Brown and Caldwell to help prepare both plans. A draft copy of both reports was circulated in April 2021 for internal staff review. It is anticipated that draft final reports will be completed in early May 2021 and that a presentation on both plans will be given to the E&O Committee in May 2021 and

then a presentation and public hearing at the May 2021 Board Meeting to consider adoption of both plans.

MAJOR DEVELOPER PROJECTS:

Bonsall Oaks (formally Polo Club): 165 SFR / 59.9 EDUs – A second amendment to and assignment and assumption of joint agreement to improve major subdivision Tract No. 4736-1 was made and entered on December 3, 2019 between the Developer, County of San Diego and RMWD. District Staff is completing several plan reviews for the Developer

Fairview-Lilac Del Cielo (Bonsall LLC): 73 Units / 77.8 Sewer EDUs – The developer paid 50% of the sewer connection fees and the agreement is effective for five years from the date of execution (12/31/24). The contractor is on site constructing water and sewer infrastructure. The Developer purchased two-3/4” water meters for two model homes.

Golf Green Estates (Development Solutions): 94 SFR / 120.3 Sewer EDUs – Across from Bonsall Elementary School on Old River Road. Onsite punch list was prepared by staff. Contractor to complete items on the punch list. All water meters have been purchased - 97. Staff is working with the Developer on final inspections and project closeout.

Horse Creek Ridge (D.R. Horton): 627 SFR/MF, 430 Water Meters (Reduced by 124 Water Meters) / 723.9 Sewer EDUs – On Highway 76 and Horse Ranch Creek Road. Currently inspecting meter installs, meter releases and sewer connections. All water meters have been purchased - 430. Staff is working with the Developer on final inspections and project closeout.

Horse Creek Ridge Unit 6R5 Promontory (Richmond American Homes): 116 Units, 124 Water Meters (includes irrigation plus 3 SF meters purchased by DRH) / 169.5 Sewer EDUs - On Highway 76 and Horse Ranch Creek Road. D.R. Horton, master developer of HCR sold Unit 6-R5, 124 lots, Promontory Subdivision to Richmond American Homes. Currently the sewer EDUs are covered under an agreement with D.R. Horton. Staff inspecting meter installs, meter releases and sewer connections. All water meters have been purchased - 116.

Malabar Ranch (Davidson Communities): 31 SFR / 29 EDUs - On Via Monserate / La Canada. There are 17 out of 31 homes built. Developer needs to complete the waterline relocation and punch list items.

Citro (Tri Pointe) (formally Meadowood by Pardee Homes): Approximately 850 Units / 501 SFR - On Pala Road/Horse Ranch Creek Road. The developer is grading the project now. The Board has entered an Out of Agency Service Agreement with the Developer. The LAFCO Commission voted unanimously to approve the annexation of the Development on May 3, 2021. District Staff has completed plan reviews for improvements in Horse Ranch Creek Road, Planning Area 1, Planning Area 3, Planning Area 4, Planning Area 5A, Planning Area 5B, and the Final Map. Plan Reviews continue for Planning Area 5C. The contractor is onsite constructing water and sewer infrastructure. Two (2) total meters purchased to date by the Developer.

Ocean Breeze Ranch: The District completed the review of the revised water and sewer system analysis reports, conditions of approval, and improvement plans in December 2020. District Staff also reviewed an exhibit showing a Utility Conflict and provided comments in January 2021.

Pala Mesa Highlands (Beazer Homes): 124 SFR / 160.2 Sewer EDUs – On Old Highway 395. The PRS needs to be installed. Currently inspecting meter installs, meter releases and sewer connections. All the water meters have been purchased for this Development a total of 129.

MINOR DEVELOPER PROJECTS:

Cal-A-Vie (Spa Havens) Water Main Extension on Spa Havens Way: District staff has completed three plan checks and received the necessary easement documents. Plans are ready for final approval.

Carefield Senior Living: District staff has completed one plan check. Waiting on Developer response.

VNUIT Sewer Main Extension on Highway 76: Developer has completed construction.

Monserate Winery: District staff approved final plans. Developer has begun construction.

Walker Farm Road: District staff is completing plan checks.

Wiestling 198' Water Main Extension on West Lilac Road: The Notice of Completion was executed on April 23, 2021 and forwarded to the County for recording. Staff is working on closing out the project.

OTHER:

ITEMS	NO#	ITEMS	NO#
Water Availability Letters	0	Water Meters Purchased	2
Sewer Availability Letters	0	Sewer EDUs Purchased	0
Water Commitment Letters	0	Jobs Closed:	
Sewer Commitment Letters	0		



Chad Williams 5/25/21
Engineering & CIP Program Manager

**AS-NEEDED CONTRACT EXPENDITURES REPORT
MAY 2021**

CONTRACT INFO	FUND SOURCE	ASSIGN. NO.	STATUS	DATED	DESCRIPTION	AUTHORIZED AMOUNT	NOT TO EXCEED AMOUNT	INVOICED TO DATE	CURRENT BALANCE
Title: As-Needed Land Surveying Services	NON-CIP	2019-01	Closed	5/14/2019	Topography - Dentro De Lomas Road repair.		\$ 5,115.40	\$ 5,115.40	
Firm: Johnson-Frank & Assoc.	NON-CIP	2019-02	Closed	8/6/2019	Easement review - McDowell / Mead.		\$ 4,100.00	\$ 1,404.25	
Expires: 8/29/2021 (C#18-16)	NON-CIP	2020-03	Closed	9/19/2020	Survey & Reset Monument on Los Alisos Lane.		\$ 6,079.00	\$ 4,297.76	
	NON-CIP	2021-04	Open	5/3/2021	Prepare Plat Map - Thoroughbred Lift Station		\$ 11,592.00		
						\$ 50,000.00	\$ 26,886.40	\$ 10,817.41	\$ 39,182.59
Title: As-Needed Land Surveying Services	NON-CIP	2018-01	Closed	9/11/2018	Stake easement on Morro Hills due to 20" watermain failure.		\$ 7,280.00	\$ 7,278.75	
Firm: KDM Meridian, Inc.	CIP	2019-02	Closed	1/9/2019	RMWD "Base Map" to perform in-house design of proposed water facilities on Via Ararat.		\$ 5,800.00	\$ 5,800.00	
Expires: 8/29/2021 (C#18-14)	CIP	2019-03	Cancelled	---	Assignment Cancelled - 4 PTR Plottable Easements.		\$ -	\$ -	
	CIP	2019-04	Closed	4/24/2019	Stake easement on Gird Road for construction project.		\$ 5,400.00	\$ 5,400.00	
	CIP	2019-05	Closed	6/18/2019	Legal and Plat for Campbell - Via Ararat.		\$ 1,195.00	\$ 1,195.00	
	NON-CIP	2019-06	Closed	10/24/2019	Stake easement on Via Oeste Drive and Laketree Drive.		\$ 10,900.00	\$ 7,725.00	
	CIP	2019-07	Closed	11/8/2019	Easements for new PS on W. Lilac/Via Ararat.		\$ 4,100.00	\$ 1,100.00	
	NON-CIP	2020-08	Closed	4/6/2020	Linda Vista Drive - Mainline Break.		\$ 5,563.00	\$ 5,562.50	
	CIP	2020-09	Closed	4/6/2020	Gird Road - Winery easement anlysis and exhibit.		\$ 7,680.00	\$ 6,900.00	
	CIP	2020-10	Closed	9/1/2020	Additional Gird Road - Winery easement analysis and new exhibit.		\$ 5,320.00	\$ 5,320.00	
	CIP	2020-11	Closed	11/6/2020	Easement for Hialeah PRS - Via De La Reina.		\$ 3,990.00	\$ 2,545.00	
	NON-CIP	2020-12	Closed	12/3/2020	Stake easement - Winterhaven Court		\$ 4,490.00	\$ 3,527.50	
	NON-CIP	2020-13	Closed	12/16/2020	Legal and Plat for Gird Road - Winery		\$ 5,460.00	\$ 5,460.00	
	CIP	2021-14	Closed	1/29/2021	Survey & staking of easements - Rancho Amigos		\$ 8,345.00	\$ 8,345.00	
					Change Order 01 for \$50K	\$ 100,000.00	\$ 75,523.00	\$ 66,158.75	\$ 33,841.25
Title: As-Needed Land Surveying Services	NON-CIP	2019-00A	Closed	5/15/2019	Title Reports, Legals & Plats - Los Sicomoros.		\$ 7,705.00	\$ 7,705.00	
Firm: Right-of-Way Eng.	NON-CIP	2019-00B	Closed	6/18/2019	Adams Property Easement - Ranger Road.		\$ 1,885.00	\$ 1,885.00	
Expires: 8/29/2021 (C#18-15)	CIP	2019-00C	Closed	6/30/2019	Pardee Easement - North River.		\$ 2,875.00	\$ 2,875.00	
	NON-CIP	2019-01	Closed	6/19/2019	Easement Survey - Grove View Road.		\$ 4,220.00	\$ 3,285.00	
	CIP	2019-02	Closed	10/3/2019	Easement Survey - Pala Mesa/Tecalote/Fire Rd/Pala Lake.		\$ 15,640.00	\$ 15,451.30	
	CIP	2019-03	Closed	11/6/2019	Easement Survey - Moosa Creek Pump Station. Restake and reconfigure easement authorized additional \$525.		\$ 5,675.20	\$ 5,675.20	
	CIP	2020-04	Closed	2/19/2020	Lemonwood Easement Location.		\$ 5,370.00	\$ 4,390.00	
	CIP	2020-05	Closed	6/9/2020	Easement Survey - Hutton Pump Station.		\$ 5,687.50	\$ 4,577.50	
	CIP	2020-06	Closed	7/30/2020	Easement Survey - Rainbow Heights Rd - Calfire Camp Site .		\$ 5,756.00	\$ 4,177.60	
	CIP	2020-07	Closed	8/26/2020	Easement Survey - RHR - Calfire Camp Site Additional Services.		\$ 2,276.00	\$ -	
	CIP	2020-08	Closed	10/19/2020	Easement Survey - OHE Rancho Del Caballo.		\$ 1,620.00	\$ 1,445.00	
	CIP	2020-09	Closed	11/3/2020	Easement Survey - Rainbow Heights Rd. Westside - Calfire Camp Site.		\$ 11,521.00	\$ 8,449.20	
	CIP	2021-10	Open	1/11/2021	Topographic Survey - Rainbow Heights Road		\$ 8,820.00	\$ 8,525.00	
	CIP	2021-11	Open	1/19/2021	Easement Survey - Skycrest Drive		\$ 7,710.00	\$ 4,162.60	
	CIP	2021-12	Open	2/4/2021	Easement Survey, Legal Desc./Plat Map - Camino Del Cielo		\$ 5,490.00	\$ 1,585.00	
	CIP	2021-13	Closed	2/23/2021	Easement Survey/County ROW Marking, Topo Map - Camino Del Cielo		\$ 2,320.00	\$ 2,320.00	
	CIP	2021-14	Open	2/23/2021	Easement Survey - Skycrest Drive		\$ 4,720.00	\$ 795.00	
					Change Order 01 for \$50K	\$ 100,000.00	\$ 99,290.70	\$ 77,303.40	\$ 22,696.60

**AS-NEEDED CONTRACT EXPENDITURES REPORT
MAY 2021**

CONTRACT INFO	FUND SOURCE	ASSIGN. NO.	STATUS	DATED	DESCRIPTION	AUTHORIZED AMOUNT	NOT TO EXCEED AMOUNT	INVOICED TO DATE	CURRENT BALANCE
Title: As-Needed Civil Engineering Services	Both	2019-01	Closed	12/18/2019	PRS and other Schematic Design/Drafting Services.		\$ 10,000.00	\$ 7,527.50	
Firm: Dudek	CIP	2020-02	Closed	8/5/2020	Design of Hutton Pump Station Site - Assignment Cancelled.		\$ 1,787.50	\$ 1,787.50	
Expires: 6/25/2022 (C# 19-16)									
						\$ 150,000.00	\$ 11,787.50	\$ 9,315.00	\$ 140,685.00
Title: As-Needed Civil Engineering Services	NON-CIP	2019-01	Closed	7/16/2019	PS&E Pavement Repair - Dentre De Lomas.		\$ 8,890.00	\$ 8,890.00	
Firm: Omnis Consulting, Inc.	CIP	2019-02	Closed	8/1/2019	Olive Hill Estates Transmission Water Main.		\$ 73,700.00	\$ 73,700.00	
Expires: 7/01/2022 (C#19-17)	CIP	2019-03	Closed	10/14/2019	Vista Valley Retaining Wall Design.		\$ 23,495.00	\$ 23,040.67	
	CIP	2019-04	Closed	12/3/2019	Sarah Ann to Gird Road Force Main Replacement.		\$ 22,790.00	\$ 22,790.00	
	CIP	2020-05	Closed	3/24/2020	Gird Road Water Main Upsize.		\$ 21,120.00	\$ 21,120.00	
	CIP	2020-06	Open	8/5/2020	Caltrans Encroachment Permit Renewal.		\$ 6,410.00	\$ 3,090.00	
	NON-CIP	2020-07	Open	10/14/2020	Standard Drawing - CAD Updates.		\$ 4,400.00	\$ -	
	NON-CIP	2020-08	Closed	10/29/2020	PEIR Pipe Alignment Analysis.		\$ 19,920.00	\$ 19,920.00	
	CIP	2021-09	Open	4/19/2021	Sarah Ann Waterline Replacement.		\$ 6,800.00		
	CIP	2021-10	Open	4/19/2021	Rainbow Water Quality Improvement Relocation Design.		\$ 13,900.00		
					Change Order 01 for \$150K	\$ 300,000.00	\$ 201,425.00	\$ 172,550.67	\$ 127,449.33
Title: As-Needed Civil Engineering Services	CIP	2019-01	Open	12/18/2019	Live Oak Park Road Bridge Crossing.		\$ 42,020.00	\$ 27,145.00	
Firm: HydroScience Eng., Inc.									
Expires: 6/25/2022 (C#19-18)									
						\$ 150,000.00	\$ 42,020.00	\$ 27,145.00	\$ 122,855.00
Title: As-Needed Real Estate Appraisal Services	CIP	2019-01	Closed	9/19/2019	North River Rd Easement Appraisal.		\$ 3,500.00	\$ 3,500.00	
Firm: Anderson & Brabant, Inc.	CIP	2020-02	Closed	2/19/2020	PRS Fire Road Appraisal.		\$ 7,500.00	\$ 7,500.00	
Expires: 6/25/2022 (C# 19-19)	CIP	2021-03	Open	4/28/2021	Hutton Pump Station Site Appraisal.		\$ 4,000.00		
						\$ 20,000.00	\$ 15,000.00	\$ 11,000.00	\$ 9,000.00
Title: As-Needed Real Estate Appraisal Services	NON-CIP	2019-01	Closed	7/15/2019	Bonsall Reservoir Appraisal (to include rent value).		\$ 3,050.00	\$ 3,050.00	
Firm: ARENS Group, Inc.	CIP	2020-02	Closed	1/7/2020	Moosa Creek Pump Station Easement Appraisal.		\$ 5,350.00	\$ 6,542.50	
Expires: 6/11/22 (C# 19-20)	CIP	2020-03	Closed	1/7/2020	Hutton Pump Station Easement Appraisal.		\$ 3,400.00	\$ 3,400.00	
						\$ 20,000.00	\$ 11,800.00	\$ 12,992.50	\$ 7,007.50
Title: As-Needed Geotechnical Services	CIP	2020-01	Closed	6/25/2020	Rainbow Heights Pump Station geotechnical exploration.		\$ 8,630.00	\$ 8,484.20	
Firm: Leighton Consulting, Inc.	CIP	2021-02	Open	4/15/2021	Turner Pump Station geotechnical exploration.		\$ 14,300.00	\$ -	
Expires: 11/13/2022 (C# 19-39)							\$ -	\$ -	
						\$ 100,000.00	\$ 22,930.00	\$ 8,484.20	\$ 91,515.80
Title: As-Needed Geotechnical Services	NON-CIP	2020-01	Closed	3/26/2020	Dentre De Lomas geotech observation and material testing. Project #2		\$ 6,518.00	\$ 1,369.00	
Firm: Ninyo & Moore G.E.S.		2020-02	Closed	8/6/2020	Vista Valley Villas PRS geotech observation and material testing.		\$ 10,235.00	\$ 7,136.00	
Expires: 11/1/2022 (C# 19-40)		2021-03	Open	5/6/2021	Dentre De Lomas geotech observation and material testing. Project #1		\$ 6,097.00		
						\$ 100,000.00	\$ 22,850.00	\$ 8,505.00	\$ 91,495.00

**AS-NEEDED CONTRACT EXPENDITURES REPORT
MAY 2021**

CONTRACT INFO	FUND SOURCE	ASSIGN. NO.	STATUS	DATED	DESCRIPTION	AUTHORIZED AMOUNT	NOT TO EXCEED AMOUNT	INVOICED TO DATE	CURRENT BALANCE
Title: As-Needed Geotechnical Services	CIP	2020-01	Closed	7/7/2020	Olive Hills Estates Trans. Main geotech observation/field test.		\$ 36,619.00	\$ 17,563.00	
Firm: ATLAS (SCST, LLC)									
Expires: 11/20/2022 (C# 19-41)									
						\$ 100,000.00	\$ 36,619.00	\$ 17,563.00	\$ 82,437.00
Title: As-Needed Construction Management & Insp. Services	CIP	2020-01	Closed	3/13/2020	CM Support Services for the WSUP Project.		\$ 100,000.00	\$ 99,972.50	
Firm: Harris & Associates	CIP	2020-02	Closed	4/7/2020	Constructability design review of PUP-1.		\$ 6,270.00	\$ 5,280.00	
Expires: 1/28/2023 (C# 20-01)	NON-CIP	2020-03	Open	4/21/2020	Sewer North River Road - Emergency Repair.		\$ 11,000.00	\$ 4,389.33	
	CIP	2020-04	Open	9/21/2020	District Wide Inspection Services.		\$ 20,000.00	\$ 5,115.00	
						\$ 150,000.00	\$ 137,270.00	\$ 114,756.83	\$ 35,243.17
Title: As-Needed Construction Management & Insp. Services							\$ -	\$ -	
Firm: Reilly Construction Mnmt.							\$ -	\$ -	
Expires: 1/28/23 (C# 20-02)							\$ -	\$ -	
						\$ 150,000.00	\$ -	\$ -	\$ 150,000.00
Title: As-Needed Environmental Services	CIP	2020-01	Closed	5/13/2020	Pipeline Upgrade Project - Disney Lane - Cultural/ Biological Evals.		\$ 9,148.00	\$ 5,804.56	
Firm: Helix Environmental	CIP	2020-02	Closed	5/13/2020	Pipeline Upgrade Project - Via Vera - Cultural/Biological Evals.		\$ 9,155.00	\$ 4,446.37	
Expires: 2/25/2023 (C# 20-03)	CIP	2020-03	Closed	5/14/2020	Pipeline Upgrade Project - Hutton Pump Station - Cultural/Biological Evals.		\$ 13,209.00	\$ 6,793.54	
	CIP	2020-04	Closed	5/14/2020	Pipeline Upgrade Project - Turner Pump Station - Cultural/Biological Evals		\$ 13,029.00	\$ 7,683.26	
	CIP	2020-05	Closed	7/16/2020	North River Road Sewer Points Repair - Biological Survey.		\$ 3,900.00	\$ 3,136.05	
	CIP	2020-06	Open	9/10/2020	Gopher Canyon Water Pipeline Impv. Project - CEQA ISMND.		\$ 34,695.00	\$ 31,363.46	
	CIP	2021-07	Open	3/25/2021	Rainbow Heights Pipe Installation Project-Bird Survey		\$ 5,000.00	\$ 808.80	
						\$ 100,000.00	\$ 88,136.00	\$ 60,036.04	\$ 39,963.96
Title: As-Needed Environmental Services	CIP	20-01	Closed	11/6/2020	Bio-Survey for Rainbow Heights Road Transmission Main.		\$ 3,240.00	\$ 3,234.75	
Firm: Rincon Consultants							\$ -	\$ -	
Expires: 2/25/2023 (C# 20-04)							\$ -	\$ -	
						\$ 100,000.00	\$ 3,240.00	\$ 3,234.75	\$ 96,765.25
Title: As-Needed Environmental Services							\$ -	\$ -	
Firm: Michael Baker International							\$ -	\$ -	
Expires: 3/24/2023 (C# 20-05)							\$ -	\$ -	
						\$ 100,000.00	\$ -	\$ -	\$ 100,000.00
						Total Authorized	Total Encumbrance	Total Expended	
						\$ 1,790,000	\$ 794,778	\$ 599,863	



**SEWER EQUIVALENT DWELLING UNITS (EDUs) STATUS REPORT
APRIL 2021**

STATUS SUMMARY	EDUs
Total Treatment Capacity Purchased from Oceanside	8,333.33
Less 5% Contractual Allowance	416.67
EDUs Set Aside by Board for Emergencies	60.00
EDUs Connected	5,166.72 *
EDUs Unconnected/Committed	208.52
Total EDUs Available for Purchase:	2,481.43

DEVELOPMENTS WITH UNCONNECTED/COMMITTED EDUs	EDUs	CAPACITY FEES PAID
Bonsall Oaks (Polo Club) - 165 Lots	59.85	\$ 1,038,336
Fairview (Lilac Del Cielo) - 77.8**	38.90	\$ 549,499
Passarelle (HRC Commercial) - 96.57	96.57	\$ -
Others (5 or less)	13.20	\$ 216,101
TOTAL UNCONNECTED:	208.52	\$ 1,803,936

*There is a delay between connections and new account activations.

**Paid initial 50% of Sewer Capacity Fee.

BOARD OF DIRECTORS

MAY 25, 2021

SUBJECT

HUMAN RESOURCES REPORT FOR APRIL/MAY 2021

DESCRIPTION

Personnel changes, human resources activities, and safety report for April/May 2021

RECRUITMENT:

- **Project Manager:** The Project Manager application has closed, and the hiring manager will be meeting with HR to select the candidates that will be invited to virtual interviews.
- **Utility Workers- Construction:** Two offers have been made, and upon a successful background and pre-screening clearance, our new employees are scheduled to begin on May 24th.

WORKFORCE DEVELOPMENT:

- HR organized a mandatory Anti-Harassment virtual training for all our staff on Thursday, April 29 hosted by Alisa Shorago, who has conducted our in-person live training over the last 4-5 years.

COIN AWARDS:

Coin Recognition	Employee	Department	Coin Nomination
Teamwork	Ryan Stockton	Engineering	When the assistance was needed with the two large storage Ryan made himself available and coordinated his schedule to provide this assistance. Ryan's willingness to help outside his scope of responsibilities is not only much appreciated, but also a clear demonstration of teamwork
Innovation	Claudia Ramirez	HR	Claudia played an integral role in ensuring the OSHA-10 Safety training was a success. She launched the Kahoot app which helped keep the training engaging and enjoyable for all the trainees. Her energy and enthusiasm made for a great course and her use of the Kahoot program ensured trainees not only retained information but enjoyed the session.
Professionalism	Corynn Stalker	Customer Service	5 Star Review on Google Business From: Gary Kruger
Professionalism-Honorable Mention	Amanda Holtz		" We had a great experience with the people we spoke with regarding an issue. Amanda, in the engineering department answered all our questions and helped us get all the information we were looking for. Then Corynn in Customer Service helped us with a water leak problem. Thanks for being so friendly and helping us to get the answers we needed to solve our issues."

Professionalism-Honorable Mention	Justin Demary	Construction	"One of your guys by the name of Justin came out and in just a few of minutes after I called and had the problem resolved. He had a great attitude and was very helpful and positive about his work. I appreciate your staff members like this. If you could pass that on to his Supervisor, I would appreciate it. Thanks, Bill"
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SAFETY:

Incidents

There were no lost time or modified duty due to a work-related incident.

Safety Training

Vector Solutions online training: 35 completions for the April training period 2021

Future planning to increase safety awareness throughout the district to include:

- SPCC Review
- HAZCOM Program Review

Claims in Progress/Completed

- Shinn- Auto damage due to manhole cover.

Tailgate/ Office Safety Trainings

Injury/Incident Response Training



Karleen Harp, COSM
Human Resources Manager

5/25/2021

BOARD OF DIRECTORS

May 25, 2021

SUBJECT

FINANCE REPORT FOR MAY 2021

DESCRIPTION

Summary:

FY 2020/2021 Water Sales:

Budgeted 13,500 AF

Actual March FYTD 20/21 12,268 AF

Actual March FYTD 19/20 10,803 AF

Actual March FYTD 18/19 11,167 AF

March FYTD 2020/2021 Budget vs Actual:

For FY 2020/21 (FY21), the board followed the recommendation of staff and committee to budget future sales lower and more in line with the most recent years' trends at 13,500 AF for FY21, with operating expenses being budgeted within this lower operating revenue level as well. We are anticipating sales for FY 21 to be 15,000 AF if current sales trend in the same pattern as the last 2 months of FY20.

Treasury Report:

Interest Revenue for March 2021 was \$29,208 compared to \$5,010 for the prior month. Loss from assets sales were \$8,075 for March 2021. Investment valuation was down \$60,135 from the prior month and down \$99,574 over the prior year, due to the transfer of funds from the portfolio into general checking for the payment of capital project costs.

Water Purchases & Water Sales:

The Five-Year Water Purchases Demand Chart (Attachment D) reports purchases; this data is available in real time. The Water Sales Summary Report (Attachment E) represents water that was billed to customers, so the data is time delayed in comparison to the Five-Year Water Purchases Demand Chart. Water Loss from meter inaccuracy and breaks is also not included in the Five-Year Demand Chart since this data is from purchases. These two reports will not correlate unless they are both presented for the same date; we provide the purchases report in real time to provide the board with the most current demand information available.

Attachments:

- A. Budget vs Actuals (MAR FYTD21)
- B. Fund Balance & Developer Projections (FY21)
- C. Treasury Report (MAR FY21)
- D. Five-Year Water Purchases Demand Chart (through 04/29/2021)
- E. Water Sales Summary (MAR FY21)
- F. Check Register (MAR FY21)
- G. Directors' Expense Report (MAR FY21)
- H. Credit Card Breakdown (MAR FY21)
- I. RMWD Properties



Tracy Largent, CPA
Finance Manager

May 25, 2021

Statement of Revenues & Expenses Budget vs. Actual

Operating Funds (Water, Wastewater, & General Funds)

March 31, 2021



Positive = Over Budget

Negative = Under Budget

	FY 20/21 YTD Revenues/Expenditures	FY 20/21 YTD Operating Budget	YTD Variance \$	YTD Variance %	FY 20/21 Annual Operating Budget	Notes
Operating :						
41110-Water Sales-SF, MF, CM, IS	7,082,459	5,653,773	1,428,686	25%	7,538,364	
41112-Sewer Charges-Established Acct	2,225,987	2,395,991	-170,004	-7%	3,194,655	
42120-Monthly O & M Charges	6,129,572	6,291,252	-161,679	-3%	8,388,335	
42121-Monthly O&M Charges - CWA	3,679,514	3,868,274	-188,759	-5%	5,157,699	
43101-Operating Inc Turn On/Off Fees	0	3,750	-3,750	-100%	5,000	
43106-Operating Inc-Sewer Letter Fee	1,250	750	500	67%	1,000	
41120-Water Sales-Ag-Dom Non Cert	1,035,226	802,915	232,311	29%	1,070,554	
41160-Water Sales-Ag. Non Discount	3,038,301	3,023,603	14,699	0%	4,031,470	
41170-Water Sales-Construction	408,092	73,081	335,010	458%	97,442	
41180-Water Sales - Tsawr Com	4,541,690	2,871,264	1,670,425	58%	3,828,353	
41190-Water Sales-Sawr Ag/Dom	3,258,312	3,892,292	-633,980	-16%	5,189,723	
42130-Readiness-To-Serve Rev Id#1	190,338	187,500	2,838	2%	250,000	
42140-Pumping Charges	559,390	456,234	103,157	23%	608,312	
-Water Sales	32,150,132	29,520,679	2,629,453	9%	39,360,905	
43100-Operating Inc Oak Crest Service Charges	15,640	17,550	-1,910	-11%	23,400	Oak Crest contract was
43102-Operating Inc Penalty/Int Chgs	516,165	37,500	478,665	1276%	50,000	
43104-Operating Inc. R.P. Charges	182,230	184,249	-2,019	-1%	245,665	
43108-Operating Inc Plan Check Rev.	160,008	41,250	118,758	288%	55,000	
43110-Operating Inc Inspections	22,348	15,000	7,348	49%	20,000	
43111-Operating Inc Install Fees Hyd	3,450	1,500	1,950	130%	2,000	
43114-Operating Inc-Miscellaneous	505	5,250	-4,745	-90%	7,000	
43116-New Meter Sales/Install Parts	22,525	30,000	-7,475	-25%	40,000	
43117-Notice Delivery Revenue	-81	3,750	-3,831	-102%	5,000	
-Other Operating Revenue	922,791	336,049	586,742	175%	448,065	
42200-Overhead Trs From Water Sewer	6,018,317	6,018,317	0	0%	8,024,423	
-Transfers from Water & Waste Water	6,018,317	6,018,317	0	0%	8,024,423	
REVENUE-Operating Revenue	39,091,240	35,875,045	3,216,195	9%	47,833,393	

Attachment A

Positive = Over Budget

Negative = Under Budget

	FY 20/21 YTD Revenues/Expenditures	FY 20/21 YTD Operating Budget	YTD Variance \$	YTD Variance %	FY 20/21 Annual Operating Budget	Notes
50001-Water Purchases	15,566,254	12,773,222	2,793,031	22%	17,030,963	Seasonal
50003-Water In Storage	122,828	0	122,828		0	
50005-Ready To Serve Charge	370,355	374,085	-3,731	-1%	498,780	FC estimate for budget
50006-Infrastructure Access Charge	508,494	521,208	-12,714	-2%	694,944	FC estimate for budget
50008-Ag Credit-Sawr	-798,528	-757,291	-41,237	5%	-1,009,721	
50010-Customer Service Charge	823,181	831,843	-8,662	-1%	1,109,124	
50011-Capacity Reservation Charge	308,937	314,951	-6,013	-2%	419,934	FC estimate for budget
50012-Emergency Storage Charge	1,220,715	1,202,535	18,180	2%	1,603,380	FC estimate for budget
50013-Supply Reliability Charge	705,778	732,690	-26,912	-4%	976,920	FC estimate for budget
-Cost of Purchased Water Sold	18,828,014	15,993,243	2,834,771	18%	21,324,324	←
56101-Regular Salaries	3,642,255	3,947,246	-304,991	-8%	5,262,995	
56103-Overtime Paid Comptime Earn.	353,487	288,750	64,737	22%	385,000	
56202-Director's Compensation	5,850	10,500	-4,650	-44%	14,000	
56518-Duty Pay	29,350	33,450	-4,100	-12%	44,600	
56520-Deferred Comp-Employer Contrib	100,392	105,363	-4,971	-5%	140,485	
-Salary & Labor Expenses	4,131,335	4,385,310	-253,975	-6%	5,847,080	←
56501-Employer's Share FICA SSI	167,019	226,322	-59,303	-26%	301,763	
56502-Employer's Share Medicare	57,467	57,387	79	0%	76,516	
56515-Worker's Compensation Ins	158,510	108,480	50,031	46%	144,640	Entire Year Paid in July
56516-State Unemployment Ins E.T.T.	15,237	9,913	5,324	54%	13,217	
-Taxes	398,233	402,102	-3,869	-1%	536,136	
56503-Medical Insurance	721,006	693,785	27,222	4%	925,046	
56504-Dental Insurance	67,339	65,439	1,900	3%	87,252	
56505-Vision Insurance	9,642	8,723	918	11%	11,631	
56506-Life S/T L/T Disability Ins	44,647	41,124	3,523	9%	54,832	
56507-Retirement-CalPERS	391,456	419,390	-27,934	-7%	559,186	
56511-Employee Uniform Allowance	14,368	18,750	-4,382	-23%	25,000	
56512-Employee Training/Tuition Reim	16,869	15,075	1,794	12%	20,100	
56513-Employee Relations	4,510	10,950	-6,440	-59%	14,600	
56524-Other Post Employment Benefits	14,427	0			0	
56530-Gasb 68 Pension	552,548	322,500	230,048	71%	430,000	Entire Year Paid in July
-Fringe Benefits	1,836,811	1,595,735	241,076	15%	2,127,647	
52176-Overhead Transfer To Gen Fund	6,018,317	6,018,317	0	0%	8,024,423	

Attachment A

Positive = Over Budget

Negative = Under Budget

	FY 20/21 YTD Revenues/Expenditures	FY 20/21 YTD Operating Budget	YTD Variance \$	YTD Variance %	FY 20/21 Annual Operating Budget	Notes
-Transfers	6,018,317	6,018,317	0	0%	8,024,423	
60000-Equipment	19,046	69,000	-49,954	-72%	92,000	
60100-Computers	45,764	76,530	-30,766	-40%	102,040	
63100-Equipment Maintenance	90,157	130,950	-40,793	-31%	174,600	
63102-Equipment Maintenance Contract	32,512	43,669	-11,157	-26%	58,225	
63200-Equipment Rental	66,203	87,750	-21,547	-25%	117,000	
63400-Kitchen Supplies	9,921	10,500	-579	-6%	14,000	
63401-Building Maintenance	116,086	102,150	13,936	14%	136,200	
63404-Backflow Expenses	91,470	112,875	-21,405	-19%	150,500	
63421-Fuel And Oil	103,180	105,000	-1,820	-2%	140,000	
63422-Repair Supplies Auto	59,320	52,500	6,820	13%	70,000	
65000-Property/Liability Insurance	401,755	300,000	101,755	34%	400,000	Entire Year Paid in July
65100-District Paid Insurance Claims	145,088	217,500	-72,412	-33%	290,000	
65200-Miscellaneous Expense	7,553	0	7,553		0	
66000-Bad Debt Exp/Billing Adjust'S	0	3,750	-3,750	-100%	5,000	
69000-Postage	35,011	34,875	136	0%	46,500	
70000-Professional Services	647,400	728,400	-81,000	-11%	971,200	
70100-Annual Audit Services	30,200	26,250	3,950	15%	35,000	
70300-Legal Services	340,809	307,500	33,309	11%	410,000	
70400-Bank Service Charges	45,136	37,500	7,636	20%	50,000	
72000-Supplies & Services	1,146,220	942,863	203,357	22%	1,257,150	
72001-Right Of Way Expenses	147,603	120,000	27,603	23%	160,000	
72010-Tank Maintenance	409,351	648,375	-239,024	-37%	864,500	
72150-Regulatory Permits	39,074	58,200	-19,126	-33%	77,600	
72200-Books & Resources	1,410	1,725	-315	-18%	2,300	
72400-Dues & Subscriptions	352,914	461,080	-108,166	-23%	614,773	
72500-Safety Supplies	44,883	57,375	-12,492	-22%	76,500	
72600-Sewer Line Cleaning	34,875	43,500	-8,625	-20%	58,000	
72700-Printing & Reproductions	1,536	9,375	-7,839	-84%	12,500	
72702-Public Notices & Advertising	755	1,650	-896	-54%	2,200	
72900-Stationary & Office Supplies	2,910	3,750	-840	-22%	5,000	
73000-Small Tools & Equipment	31,658	36,600	-4,942	-14%	48,800	
74000-Communicatons & Phone Bills	9,244	6,375	2,869	45%	8,500	

Positive = Over Budget

Negative = Under Budget

	FY 20/21 YTD Revenues/Expenditures	FY 20/21 YTD Operating Budget	YTD Variance \$	YTD Variance %	FY 20/21 Annual Operating Budget	Notes
74100-Phone Bill	79,441	69,750	9,691	14%	93,000	
75300-Travel, Conferences & Training	2,399	29,348	-26,948	-92%	39,130	
75400-Workforce Development	14,554	9,975	4,579	46%	13,300	
75500-Recruitment	8,753	14,100	-5,347	-38%	18,800	
77000-Sewage Treat.-Oceanside Plant	187,962	787,500	-599,538	-76%	1,050,000	
78000-Utilities - Electricity	414,536	436,875	-22,339	-5%	582,500	
78300-Hazardous Waster Material Disposal	4,380	9,000	-4,620	-51%	12,000	
78700-Utilities - Propane	9,352	11,625	-2,273	-20%	15,500	
78900-Trash Pick-Up	6,389	8,063	-1,674	-21%	10,750	
-Other Operating Expenses	5,236,809	6,213,801	-976,992	-16%	8,285,068	←
EXPENSE-Operating Expense	36,449,520	34,608,509	1,841,011	5%	46,144,678	
Operating Revenue (Expenses)	2,641,720	1,266,536	1,375,184	109%	1,688,715	
Non Operating :						
49301-Property Tax Rev. - Ad Valorem	429,654	341,250	88,404	26%	455,000	
-Property Tax Revenue	429,654	341,250	88,404	26%	455,000	
49200-Interest Revenues	-5	0	-5			
-Investment Income	-5	0	-5			
49050-Revenue Billing Adjustments	18,197	0	18,197		0	
49106-Other Intergovernmental - State	0	2,250	-2,250	-100%	3,000	
49107-Recycling Revenue	12,901	6,000	6,901	115%	8,000	
49109-Miscellaneous Revenue	1,425,866	27,000	1,398,866	5181%	36,000	
49114-Misc Revenue - Eng. Services	5,450	3,750	1,700	45%	5,000	
57050-Expense Billing Adjustments	20,958	0	20,958		0	
57525-Loan Costs	0	0	0			
-Other Nonoperating Revenue/Expense	1,441,455	39,000	1,402,455	3596%	52,000	
-Non Operating Revenue (Expenses)	1,871,104	380,250	1,490,854	392%	507,000	
Debt Service		1,781,120	-1,781,120	-100%	2,374,827	
Current Year Net Revenue Less Expense*	\$ 4,512,824				\$ (179,112)	

*Does not Include: Depreciation Expense

Operating & Debt Service Fund Balance

	Water Operating	Wastewater Operating	General Operating	Rate Stabilization	New Water Sources	Debt Service	TOTAL
	FY 20/21	FY 20/21	FY 20/21	FY 20/21	FY 20/21	FY 20/21	FY 20/21
Fund Balances:							
Beginning Available Balance	\$286,838	\$1,489,894	\$1,122,838	\$3,603,760	\$392,761	\$664,639	\$7,560,730
Transfer to Water Capital	(1,343,382)			(3,603,760)			(4,947,142)
Transfer to/from Rate Stabilization							0
Budgeted Operating Surplus (Loss)	100,547	(234,170)	8,159,423			(2,447,793)	5,578,007
MWD Damages	1,343,382						1,343,382
Mid Year Budget Adjustment	(85,490)						(85,490)
Transfers In/(Out)			(8,159,423)			2,447,793	(5,711,630)
Projected Net Increase from YTD Sales	853,667						853,667
Projected Ending Available Balance	\$1,155,562	\$1,255,724	\$1,122,838	\$0	\$392,761	\$664,639	\$4,591,524

Water Capital - Fund 60 Projected Balance

FY21 Beginning Cash

\$1,948,157

Excluding Capacity Fees:

	Adjusted Budget FY 20/21	Year 1 Proposed Budget FY 21/22	Year 2 Proposed Budget FY 22/23	Year 3 Proposed Budget FY 23/24	Year 4 Proposed Budget FY 24/25	Year 5 Proposed Budget FY 25/26
Fund Balances:						
Beginning Available Balance	\$1,138,582	\$635,477	(\$8,898)	(\$7,018,273)	(\$11,933,273)	(\$17,508,273)
Transfer From Rate Stabilization	3,603,760					
Financing						
Interfund Loan from Sewer		5,000,000				
Transfer from Operating Reserves (MWD Damages Refund)	1,343,382					
Transfer from WSUP		2,000,000				
Capacity Fees	1,772,338					
Less: Capital Project Budgets-Wholesale Water Efficiency	(1,734,594)	(3,375,000)				
Less: Capital Project Budgets-Water	(5,487,991)	(4,269,375)	(7,009,375)	(4,915,000)	(5,575,000)	(6,800,000)
Projected Ending Available Balance w/o Capacity Fees	\$635,477	(\$8,898)	(\$7,018,273)	(\$11,933,273)	(\$17,508,273)	(\$24,308,273)

Including Capacity Fees:

	Adjusted Budget FY 20/21	Year 1 Proposed Budget FY 21/22	Year 2 Proposed Budget FY 22/23	Year 3 Proposed Budget FY 23/24	Year 4 Proposed Budget FY 24/25	Year 5 Proposed Budget FY 25/26
Fund Balances:						
Beginning Available Balance	\$1,138,582	\$635,477	\$1,314,136	(\$4,209,973)	(\$7,947,577)	(\$9,731,408)
Transfer From Rate Stabilization	3,603,760					
Financing						
Interfund Loan from Sewer		5,000,000				
Transfer from Operating Reserves (MWD Damages Refund)	1,343,382					
Transfer from WSUP		2,000,000				
Forecasted Capacity Fees	1,772,338	1,323,034	1,485,266	1,177,396	3,791,169	3,791,169
Less: Capital Project Budgets-Wholesale Water Efficiency	(1,734,594)	(3,375,000)				
Less: Capital Project Budgets-Water	(5,487,991)	(4,269,375)	(7,009,375)	(4,915,000)	(5,575,000)	(6,800,000)
Projected Ending Available Balance	\$635,477	\$1,314,136	(\$4,209,973)	(\$7,947,577)	(\$9,731,408)	(\$12,740,240)

Water Capital Project Budgets:

Project #	Project Name	Adjusted Budget					Year 5 Proposed
		Year 1 Proposed Budget	Year 2 Proposed Budget	Year 3 Proposed Budget	Year 4 Proposed Budget	Year 5 Proposed Budget	
		FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26
300007	Programatic EIR for Existing Easements	\$ 209,963	\$ 75,000				
300008	New District Headquarters	120,000	150,000	450,000	2,000,000		
600001	Rainbow Heights PS (#1) Upgrades/Recon.	2,769,267					
600002	Gird to Monserate Hill Water Line	-			140,000	1,400,000	
600003	San Luis Rey Imported Return Flow Recovery	-					600,000
600007	Pressure Reducing Stations	362,182	-	750,000	250,000	750,000	250,000
600009	Isolation Valve Installation Program	11,158	50,000	600,000	500,000	500,000	500,000
600015	Water Condition Assessment	35,887				50,000	
600017	Pressure Reducing Station Replacement Program (Combined with 60007)	-	2,050,000				
600019	Water System Monitoring Program	26,250	184,375	184,375	25,000		
600021	Pipeline Upgrade Project	1,566,509					
600026	Camino Del Rey Waterline Reloaction	-	100,000	2,000,000			
600030	Corrosion Prevention Program Development and Implementation	16,375	250,000	600,000	600,000	600,000	600,000
600037	Live Oak Park Road Bridge Replacement	-	600,000	-			
600040	Vallecitos PS Relocation	-		1,100,000	1,000,000		
600047	Communitity Power Resiliency Generator Grant (Generator at Sumac)	-	50,000				
600048	Northside Zone Supply Redundancy	-					500,000
600049	Gomez/Magee Pump Station Upgrades and Sumac Radio Tower	-	500,000	450,000	400,000		
600050	Lookout Mountain Electrical Upgrade	-				1,000,000	1,000,000
600051	North Feeder and Rainbow Hills Water Line Replacements	-				150,000	1,850,000
600055	Pipe Lining Pilot Project	-	-	350,000			
600058	Electrical Panel Switches	35,000	160,000				
600067	Pala Mesa Fairways 383 A and C	-				250,000	
600068	Sarah Ann Drive Line 400 A	-	100,000	275,000			
600069	Wilt Road (1331)	-					500,000
600071	Del Rio Estates Line Ext 503	-				250,000	
600072	Katie Lendre Drive Line	-	-	250,000			
600072	East Heights Line 147L	-					500,000
600073	East Heights Line 147A	-					250,000
600074	Via Zara - PUP	-				125,000	
600075	Roy Line Ext	-					250,000
600080	Los Alisos South 243	-				500,000	
N/A	Department Level Capital Expenses	335,400					
Total		5,487,991	4,269,375	7,009,375	4,915,000	5,575,000	6,800,000

Attachment B

Wholesale Water Efficiency Capital Project Budgets:

Project #	Project Name	Year 1	Year 2	Year 3	Year 4	Year 5
		<i>Proposed Budget</i>	<i>Proposed Budget</i>	<i>Proposed Budget</i>	<i>Proposed Budget</i>	<i>Proposed Budget</i>
		FY 21/22	FY 22/23	FY 23/24	FY 24/25	FY 25/26
600008	Weese WTP Permanent Emergency Interconnect and Pressure Station (CURRENTLY UNFUNDED)		\$ 750,000			
600013	Hutton & Turner Pump Stations (SDCWA Shutdown Pump Stations)	4,000,000				
600029	Via Ararat Drive Waterline Project					
600031	Olive Hill Estates Transmission Line Reconnection					
600034	Rice Canyon Tank Transmission PL to I-15/SR76 Corridor	3,375,000				
600035	Tank and Reservoir Mixing Upgrades					
600038	Blue Breton Water System Looping Project					
600078	Wilt Road Feeder (14 inch Water Line)	3,300,000				
600079	Gird Road 1,600' upsize from 12" to 18" or larger	1,000,000				
Total		\$11,675,000	\$750,000	\$0	\$0	\$0

Wastewater - Fund 52 & 53 Projected Fund Balance

Excluding Capacity Fees:

	Adjusted Budget	Year 1	Year 2	Year 3	Year 4	Year 5
	FY 20/21	Proposed Budget FY 21/22	Proposed Budget FY 22/23	Proposed Budget FY 23/24	Proposed Budget FY 24/25	Proposed Budget FY 25/26
Fund Balances:						
Beginning Available Balance	\$13,696,384	\$15,294,474	\$1,944,474	(\$330,526)	(\$2,380,526)	(\$2,630,525)
Restricted CFD Funds*	2,750,000					
Financing						
Interfund Loan		(5,000,000)				
Sewer Connections Current Year	1,017,072					
Less: Capital Project Budgets	(2,168,982)	(8,350,000)	(2,275,000)	(2,050,000)	(250,000)	0
Projected Ending Available Balance w/o Capacity Fees	\$15,294,474	\$1,944,474	(\$330,526)	(\$2,380,526)	(\$2,630,525)	(\$2,630,523)

Including Capacity Fees:

	Adjusted Budget	Year 1	Year 2	Year 3	Year 4	Year 5
	FY 20/21	Proposed Budget FY 21/22	Proposed Budget FY 22/23	Proposed Budget FY 23/24	Proposed Budget FY 24/25	Proposed Budget FY 25/26
Fund Balances:						
Beginning Available Balance	\$13,696,384	\$15,294,474	\$7,430,408	\$10,197,786	\$8,190,164	\$12,419,519
Restricted CFD Funds*	2,750,000					
Financing						
Interfund Loan		(5,000,000)				
Forecasted Sewer Connections	1,017,072	5,485,934	5,042,378	42,378	4,479,355	4,479,355
Less: Capital Project Budgets	(2,168,982)	(8,350,000)	(2,275,000)	(2,050,000)	(250,000)	0
Projected Ending Available Balance	\$15,294,474	\$7,430,408	\$10,197,786	\$8,190,164	\$12,419,519	\$16,898,874

Wastewater Capital Project Budgets:

Project #	Project Name	Adjusted Budget FY 20/21	Year 1	Year 2	Year 3	Year 4	Year 5
			Proposed Budget FY 21/22	Proposed Budget FY 22/23	Proposed Budget FY 23/24	Proposed Budget FY 24/25	Proposed Budget FY 25/26
530001	Thoroughbred Lift Station and Sewer Improvements	\$ 467,619	\$ 8,000,000	\$ 2,000,000	\$ 250,000	\$ 250,000	\$ -
530006	Sewer System Rehabilitation Program	-					
530015	Sewer System Condition Assessment Program	-					
530017	N River Road Land Outfall Rehabilitation (Operations Project)	1,191,363	\$250,000				
530018	Fallbrook Oaks Forcemain and Manhole Replacement	-		\$150,000	\$1,650,000		
530020	Rancho Viejo LS Wet Well Expansion	-	100,000				
530021	Almendra Court, I-15 Crossing Sewer Rehabilitation	-			150,000		
530023	Replace Rancho Monserate LS Emergency Generator	-		125,000			
530024	Old River Road LS Equalization Basin	-					
530025	Old River Road LS to Stallion Outfall Repair (Combine with 530017)	-					
N/A	Department Level Capital Expenses	310,000					
NA	City of Oceanside WW Plant	200,000					
		\$ 2,168,982	\$ 8,350,000	\$ 2,275,000	\$ 2,050,000	\$ 250,000	\$ -

Water Service Upgrade Projected Fund Balance

FY21 Beginning Cash

\$ 7,261,642

Fund Balances:

	Budget FY 20/21	Budget FY 21/22	Budget FY 22/23	Budget FY 23/24
Beginning Available Balance	\$7,168,951	\$3,068,951	\$ (131,049)	\$ (131,049)
Less: Meter Replacement/Upgrade Project	(4,100,000)	(3,200,000)	0	0
Projected Fund Balance	\$3,068,951	\$ (131,049)	\$ (131,049)	\$ (131,049)

Capital Project Budgets:

		Project Budgets					
GL Project #	Project Name	Actuals FY 19/20	Budget FY 20/21	YTD Actuals as of 12/31/2020 FY 20/21	Budget FY 21/22	Budget FY 22/23	Budget FY 23/24
600027	Service Meter Replacement	\$3,403,236	\$1,300,000	\$274,098	\$1,400,000		
600028	Water Service Upgrade	497,891	2,800,000	712,971	1,800,000		
Total		\$149,702	\$3,901,128	\$4,100,000	\$987,069	\$3,200,000	\$ -

Rainbow MWD Developer Projections - Water

Installations

Development Name (Active) (Inactive)	Purchased	Anticipated Sales (Connections)						Water LF	PRS	Timing
		FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24+	Total			
Horse Ridge Creek	274.8	23.8					23.8	34407	1	In Progress
Horse Ridge Creek (RAH)	113						0			In Progress
Campus Park West						9	9			
Fairview-Lilac Del Cielo		14	62				76	2247	1	Recent Activity
Golf Green Estates	77	20					20	5475		In Progress
Pala Mesa Highlands	104	27					27	10089	1	In Progress
Bonsall Oaks/Polo Club						154	154	21531	3	
Ocean Breeze (Vessels)						396	396			
							0			
Rancho Viejo Phase 3						47	47			
Campus Park						53	53			
Meadowood/Parde/Citro/Tripoint*		23	82	121	104		53		1	In Progress
Single Service Laterals		5	5	5	5		5			See Notes**
TOTAL WATER METERS	568.8	113	149	126	109	717	1,214			

Revenue Projections

Meter Size (in)	Revenue Per Meter (Existing)	Purchased	Anticipated Sales					Total
			FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24+	
5/8	6,241		14	62				76
3/4	10,401	531.8	90	82	117	102	697	1,088
1	16,642	0	5	5	7	7	20	44
1 1/2	27,043	34			1			1
2	62,406	3						-
3	124,812		2		1			3
4	208,020		2					2
Total		568.8	113	149	126	109	717	1,214
Total Revenue			\$1,772,338	\$1,323,034	\$1,485,266	\$1,177,396	\$7,582,337	\$13,340,371
Estimated Fee credits from CFD Reimbursement				(\$1,164,912)	(\$1,402,056)	(\$162,242)		(\$2,729,210)
Total Cash Revenue from Developer			\$1,772,338	\$158,122	\$83,210	\$1,015,154	\$7,582,337	\$10,611,161

Notes:

*Actual amount will vary depending on final agreements.

**Average from last 10 years.

Rainbow MWD Developer Projections - Sewer

Installations											
Development Name (Active) (Inactive)	Purchased (EDUs)	Anticipated Sales (EDUs)							Sewer LF	LS	Timing
		FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24+	Total			
Horse Ridge Creek	723							0	29916	1	In Progress
Horse Ridge Creek (RAH)	169.5							0			
Campus Park West								9			
Fairview-Lilac Del Cielo	38.9		7.5	31.4				39	1382		Recent
Golf Green Estates	94.5		25.8					26	4318		In Progress
Pala Mesa Highlands	126.88		35.7					36	11501		In Progress
Bonsall Oaks/Polo	59.85							96.2	21027		Recent
Ocean Breeze (Vessels)								479			Recent
Rancho Viejo Phase 3								47			Recent
								0	2251		
Campus Park								0			
Meadowood*				422	422			844			
Misc. SFR			3	3	3	3	3	15			
TOTAL EDUs		-	72	456	425	3	634	1591			

Tripoint Citro

Revenue Projections

		Purchased (EDUs)	Anticipated Sales							Total
			FY 19/20	FY 20/21	FY 21/22	FY 22/23	FY 23/24	FY 24+		
Existing Fee	\$ 14,126	281.23		72	456	425	3	634	1,591	
Meadowwood		883								
Total			-	72	456	425	3	634	1,591	
Total Revenue			\$0	\$1,017,072	\$5,485,934	\$5,042,378	\$42,378	\$8,958,709	\$20,546,472 **	

Notes:

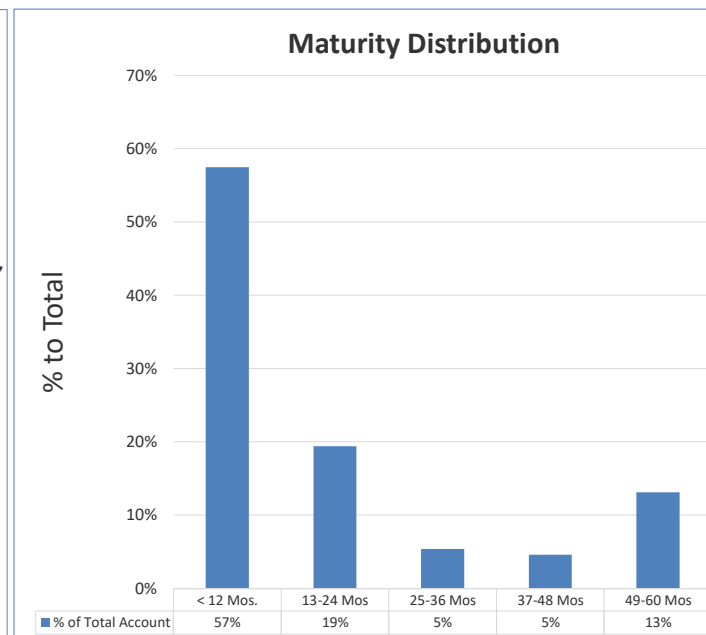
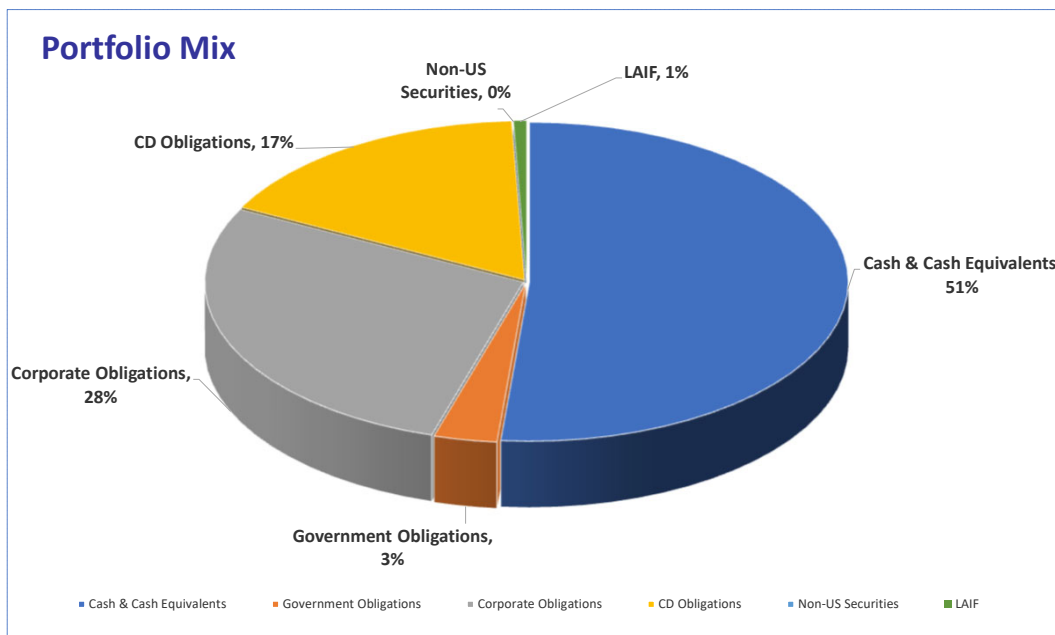
*Actual amount will vary depending on final agreements. \$10,500,000 will be paid from CFD.

RAINBOW MUNICIPAL WATER DISTRICT
 TREASURER'S MONTHLY REPORT OF INVESTMENTS
 PORTFOLIO SUMMARY
 3/31/2021



Quarterly Statement - 3

TYPE	ISSUER	CUSIP	Bond Rating	Date of Maturity	Par Value	Cost Basis	Market Value*	Interest Rate	Yield to Maturity	Semi-Annual Interest	Days to Maturity	Object
Money Market Funds	JP MORGAN MONEY MARKET	48125C068S	N/A			\$ 1,708,464	\$ 1,708,464				0	11508
Trust	Willimington Trust	CSCDA 2017-01				\$ 2,750,000	\$ 2,750,000				0	10301
Money Market Funds	Zions Bank	7326251D				\$ 629,148	\$ 629,176	2.090%			0	10310
Money Market Funds	Zions Bank	7326250				\$ 4,990,811	\$ 4,990,891	2.060%			0	10311
Money Market Funds	Zions Bank	7326251E				\$ 1,642,273	\$ 1,642,348	2.090%			0	10309
Total Cash & Cash Equivalents					\$ -	\$ 11,720,696	\$ 11,720,880					
Non-Callable	FEDERAL FARM CR BKS	3133EHRU9	Aaa	07/19/22	\$ 200,000	\$ 200,938	\$ 204,566	1.900%	1.800%	\$ 1,909	475	11508
Non-Callable	FEDERAL HOME LOAN BANKS	3130ADR9	Aaa	03/10/23	\$ 500,000	\$ 501,990	\$ 524,540	2.670%	2.660%	\$ 6,702	709	11508
Total Government Obligations					\$ 700,000	\$ 702,928	\$ 729,106					
Make Whole	CITIBANK NA	17325FAQ1	Aa3	07/23/21	\$ 475,000	\$ 486,623	\$ 478,292	3.400%	2.150%	\$ 8,075	114	11508
Callable 3/1/22	UNION BK CALIF N A MEDIUM TERM	90520EAH4	A2	04/01/22	\$ 308,000	\$ 315,377	\$ 315,888	3.150%	1.900%	\$ 13,860	366	11508
Callable 3/1/22	UNION BK CALIF N A MEDIUM TERM	90520EAH4	A2	04/01/22	\$ 290,400	\$ 297,355	\$ 297,837	3.150%	1.900%	\$ 13,860	366	11508
Callable 3/1/22	UNION BK CALIF N A MEDIUM TERM	90520EAH4	A2	04/01/22	\$ 281,600	\$ 288,344	\$ 288,812	3.150%	1.900%	\$ 13,860	366	11508
Callable 10/1/22	PNC BK N A PITTSBURG PA	69349LAG3	A3	11/01/22	\$ 980,000	\$ 999,179	\$ 1,013,487	2.700%	2.065%	\$ 13,489	580	
Bullet	BANK OF AMERICA CORP	06051GEU9	A2	01/11/23	\$ 475,000	\$ 490,794	\$ 499,002	3.300%	2.300%	\$ 7,838	651	11508
Callable 9/10/25	AMERICAN HOND FIN CORP MTN	02665WDN8		09/10/25	\$ 500,000	\$ 506,050	\$ 492,020	1.000%	1.300%	\$ 2,500	1624	11508
Callable 9/30/23	CITIGROUP INC	17298CKE7	A3	09/30/23	\$ 1,000,000	\$ 1,000,000	\$ 978,040	1.000%	1.000%	\$ 5,000	913	11508
Stepped 1/26/2026	BANK OF AMERICA	06048WK82		01/26/26	\$ 1,000,000	\$ 997,000	\$ 957,080	0.610%	0.610%	\$ 3,050	1762	11508
Callable 02/25/26	GOLDMAN SACHS GROUP INC SR NT	38143U8H7		02/25/26	\$ 500,000	\$ 556,750	\$ 548,385	3.750%	3.420%	\$ 9,375	1792	11508
Callable 03/15/26	CIGNA CORP NEW SR NT	125523CP3		03/15/26	\$ 500,000	\$ 500,000	\$ 493,360	1.250%	1.270%	\$ 3,125	1810	11508
Total Corporate Obligations					\$ 6,310,000	\$ 6,437,472	\$ 6,362,202					
FDIC Ins. CD	DISCOVER BANK	254672F29	N/A	08/10/21	\$ 248,000	\$ 248,000	\$ 249,317	1.520%	1.500%	\$ 1,885	132	11508
FDIC Ins. CD	WELLS FARGO BANK NATL ASSN	949763AF3	N/A	08/17/21	\$ 98,000	\$ 98,000	\$ 98,559	1.570%	1.550%	\$ 769	139	11508
FDIC Ins. CD	WELLS FARGO BANK NATL ASSN	949763AF3	N/A	08/17/21	\$ 150,000	\$ 150,000	\$ 150,855	1.570%	1.550%	\$ 1,178	139	11508
FDIC Ins. CD	MB FINL BK NA CHIC IL	55266CZJ8	N/A	11/18/21	\$ 247,000	\$ 247,000	\$ 251,369	2.810%	2.850%	\$ 3,470	232	11508
FDIC Ins. CD	FLAGSTAR BK FSB TROY MICH	33847E2K2	N/A	06/13/22	\$ 245,000	\$ 246,749	\$ 251,921	2.440%	2.200%	\$ 3,010	439	11508
FDIC Ins. CD	GOLDMAN SACHS BK USA NY	38148PKT3	N/A	06/14/22	\$ 245,000	\$ 245,000	\$ 251,642	2.340%	2.350%	\$ 2,867	440	11508
FDIC Ins. CD	CAPITAL ONE NATL ASSN VA	14042RKL4	N/A	11/22/22	\$ 250,000	\$ 250,000	\$ 259,300	2.400%	2.400%	\$ 3,000	601	11508
FDIC Ins. CD	MORGAN STANLEY	61747MF63	N/A	01/11/23	\$ 246,000	\$ 246,000	\$ 256,979	2.630%	2.650%	\$ 3,235	651	11508
FDIC Ins. CD	BMW BANK NORTH AMER	05580AMB7	N/A	03/29/23	\$ 240,000	\$ 240,000	\$ 253,174	2.860%	2.900%	\$ 3,432	728	11508
FDIC Ins. CD	SALLIE MAE BK SLT LAKE CITY	795450M44	Aaa	04/11/23	\$ 240,000	\$ 240,000	\$ 253,555	2.900%	2.950%	\$ 3,480	741	11508
FDIC Ins. CD	CAPITAL ONE BANK (USA) NAT	1402TAW7	N/A	06/19/24	\$ 245,000	\$ 245,000	\$ 261,797	2.520%	2.500%	\$ 3,087	1176	11508
FDIC Ins. CD	MORGAN STANLEY PVT BK PURCHA	61760AL49	N/A	06/24/24	\$ 245,000	\$ 245,000	\$ 259,903	2.290%	2.250%	\$ 2,805	1181	11508
FDIC Ins. CD	FIRST NATL BK MCGREGOR TEX	32112UDA6	N/A	06/28/24	\$ 249,000	\$ 250,743	\$ 266,721	2.300%	2.150%	\$ 2,884	1185	11508
FDIC Ins. CD	MERRICK BK SOUTH JORDAN UTAH	59013KBV7	N/A	07/31/24	\$ 249,000	\$ 249,000	\$ 264,020	2.200%	2.200%	\$ 2,739	1218	11508
FDIC Ins. CD	STATE BK INDIA CHICAGO ILL	856283N69	NA	06/26/25	\$ 248,000	\$ 252,166	\$ 249,037	0.950%	0.940%	\$ 1,198	1548	11508
FDIC Ins. CD	JPMORGAN CHASE BK NA COLUMBU	48128UHS1	NA	07/31/25	\$ 249,000	\$ 249,000	\$ 248,231	0.550%	0.550%	\$ 685	1583	11508
Total CD Obligations					\$ 3,694,000	\$ 3,701,659	\$ 3,826,380					
Total Non-US Securities					\$ -	\$ -	\$ -					
Subtotal Long Term Pooled Investment	Local Agency Investment Fund (LAIF)**	1.001397555			\$ 10,704,000	\$ 22,562,754	\$ 22,638,568					
						\$ 146,433	\$ 147,403			\$ -		10103
Portfolio Totals						\$ 22,709,187	\$ 22,785,971					



This monthly report accurately reflects all District pooled investments. It is in conformity with the Investment Administrative code section 5.03.080. The District has sufficient cash flow to meet six months of obligations. This is in effect in compliance with the current Investment Policy.

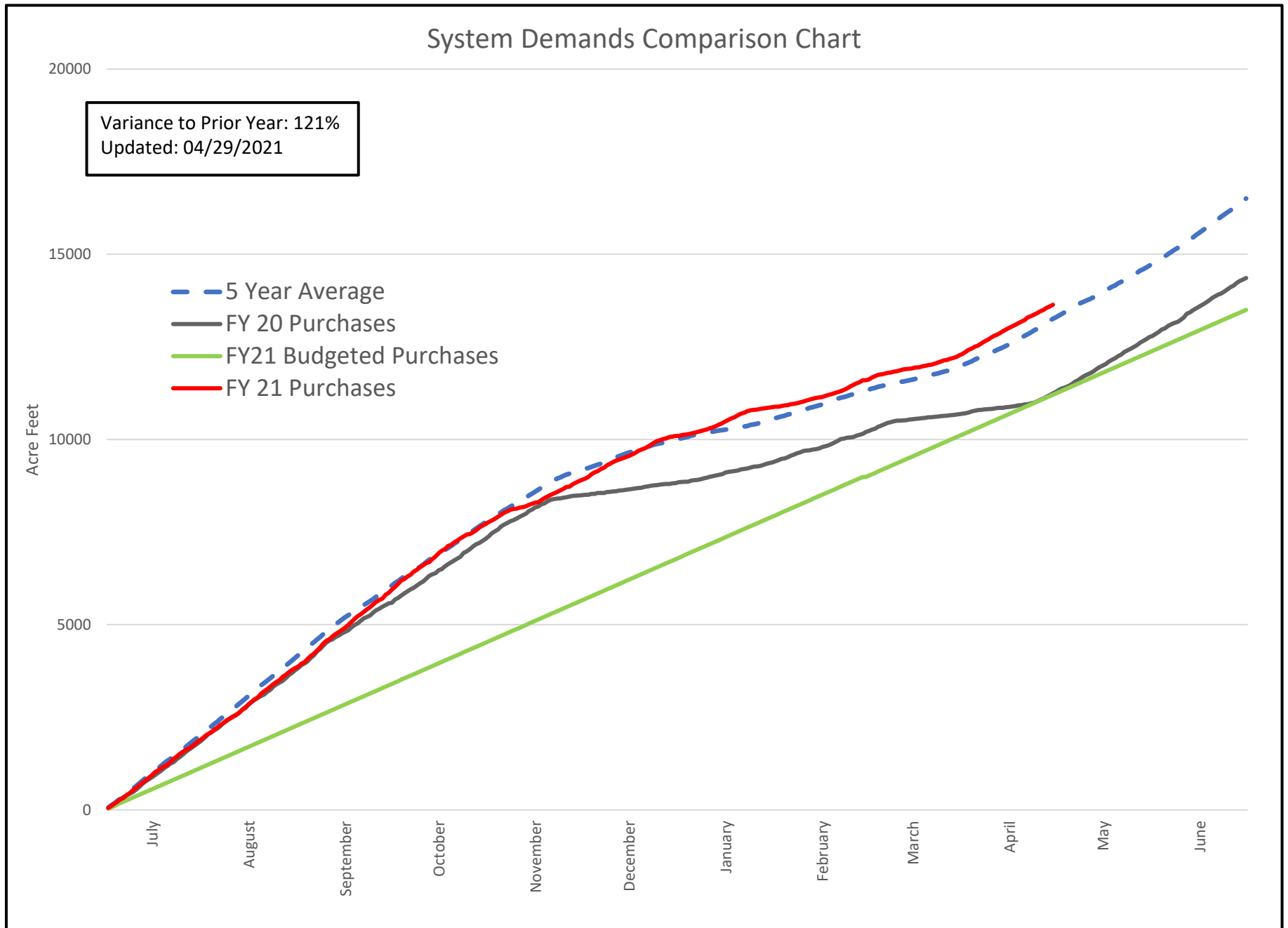
Tracy Largent

4/30/2021

Tracy Largent, Treasurer

*Source of Market Value - MUFG monthly statements

**Source of LAIF FMV - CA State Treasurer Pooled Money Investment Account @ <https://www.treasurer.ca.gov/pmia-laif/reports/valuation.asp>



Comparative Water Sales YTD from Prior Years

FISCAL YEAR 2020-2021

Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
549	AD	34,763	39,406	46,230	42,502	34,921	21,626	24,948	14,076	14,146				626
402	AG	109,886	131,840	137,233	129,675	105,410	64,136	68,514	39,558	46,221				1,911
271	CM	43,615	49,777	48,946	49,458	35,129	19,261	20,216	10,734	14,250				669
24	CN	6,330	12,547	10,164	14,057	8,403	5,244	9,069	7,677	4,613				179
21	IS	2,513	2,972	3,359	3,231	1,698	1,013	1,365	568	1,119				41
114	MF	14,151	14,484	14,090	14,996	12,993	9,384	12,462	8,972	8,359				252
	PC	-	-	-	-	-	-	-	1,234	14,315				36
	PD	-	-	-	-	-	-	83	3,574	24,420				64
319	SC	137,945	133,502	160,919	156,961	123,278	85,624	74,455	110,420	39,051				2,347
1012	SD	186,337	204,966	223,721	229,964	179,016	112,667	115,867	55,255	54,422				3,127
5851	SF	169,793	186,711	189,918	189,511	157,332	112,083	128,779	84,894	94,401				3,015
8563	Total	705,333	776,205	834,580	830,355	658,180	431,038	455,758	336,962	315,317	-	-	-	12,268

FISCAL YEAR 2019-2020

Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
553	AD	28,018	36,530	36,506	32,640	37,164	15,379	6,577	13,028	16,047				509
400	AG	113,285	139,802	139,715	135,633	132,703	48,601	25,028	47,900	52,506				1,917
267	CM	35,561	46,750	44,883	40,374	29,303	16,496	13,155	9,711	25,311				600
19	CN	1,484	1,549	1,183	1,041	1,286	314	490	1,126	5,662				32
21	IS	3,060	1,799	1,946	2,046	2,048	927	643	1,018	1,351				34
114	MF	11,910	11,187	11,539	11,065	12,605	8,386	7,568	9,074	8,716				211
323	SC	135,069	157,307	156,337	136,485	152,308	47,287	10,146	50,668	60,342				2,080
1021	SD	164,817	213,262	218,596	179,714	207,689	77,699	21,552	65,024	75,717				2,810
5536	SF	150,907	188,769	182,811	153,331	174,251	89,028	52,276	70,585	74,004				2,608
8254	Total	644,111	796,955	793,516	692,329	749,357	304,117	137,435	268,134	319,656	-	-	-	10,803

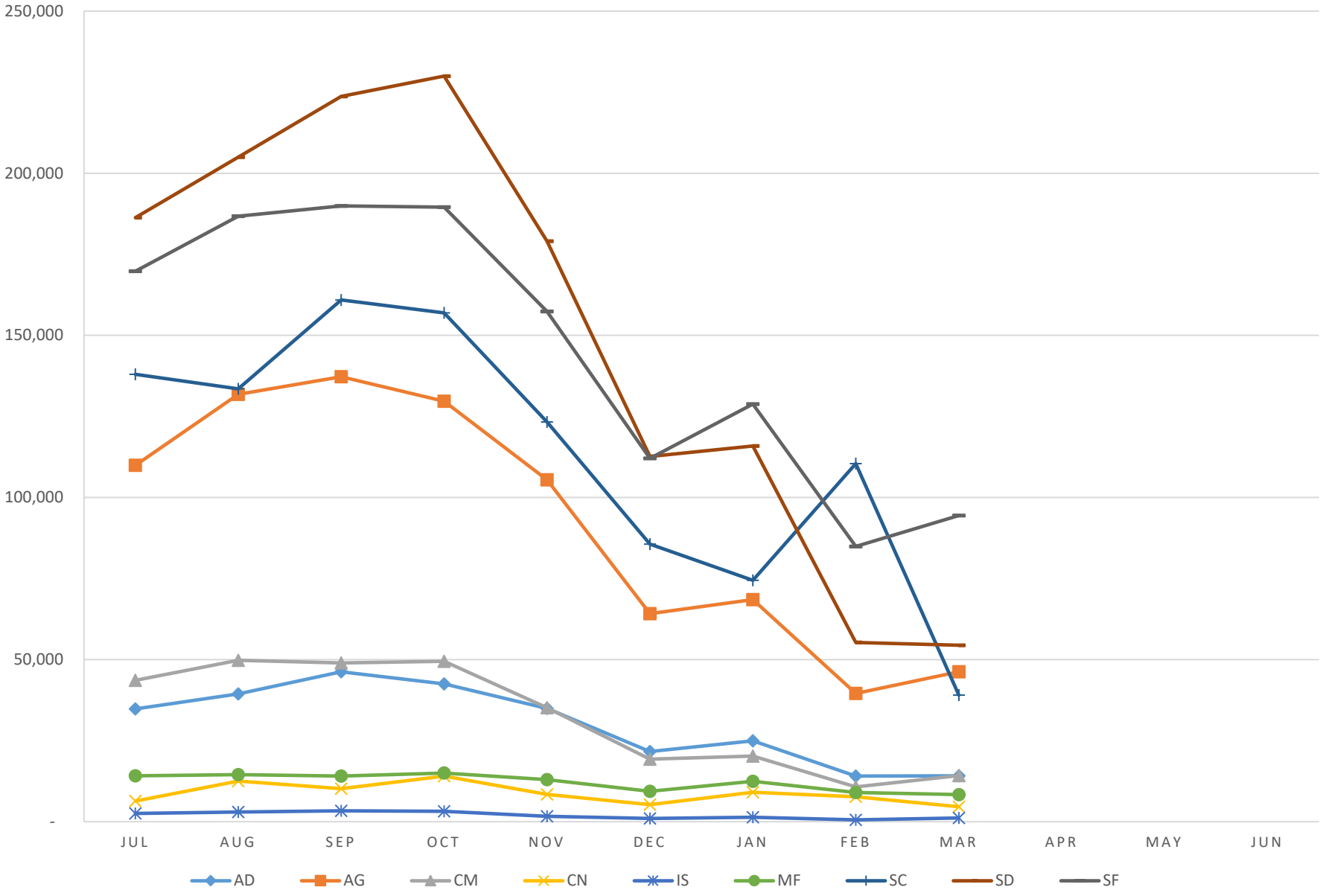
FISCAL YEAR 2018-2019

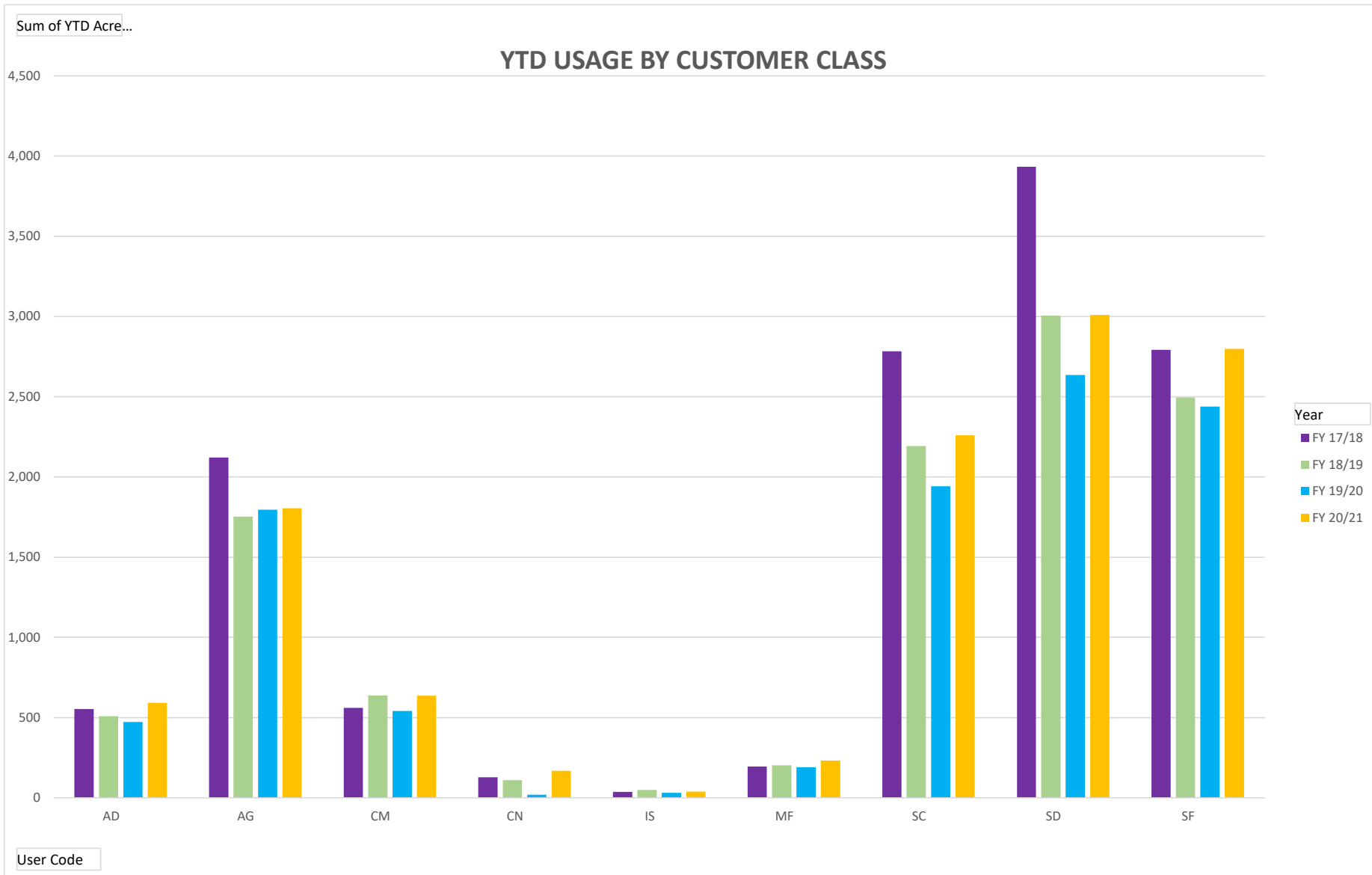
Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
562	AD	34,648	47,312	45,104	28,007	29,134	20,794	9,982	6,874	4,335				519
402	AG	129,946	149,080	154,084	110,908	93,077	70,762	33,893	21,947	18,274				1,795
264	CM	51,483	67,254	66,114	36,283	24,307	15,501	10,455	6,708	8,425				658
23	CN	3,982	27,189	4,915	2,545	3,115	2,815	2,831	829	547				112
21	IS	4,964	3,824	3,852	3,447	2,161	1,736	884	864	470				51
112	MF	11,653	12,856	13,798	11,513	11,816	10,461	8,551	7,929	6,940				219
323	SC	165,088	203,887	203,899	134,052	132,762	83,121	22,699	9,624	3,104				2,200
1024	SD	230,264	264,247	273,401	189,659	170,318	118,228	41,039	22,400	12,611				3,035
5468	SF	168,323	192,173	207,384	146,492	144,114	114,763	63,252	50,903	35,144				2,577
8199	Total	800,351	967,822	972,551	662,906	610,804	438,181	193,586	128,078	89,850	-	-	-	11,167

FISCAL YEAR 2017-2018

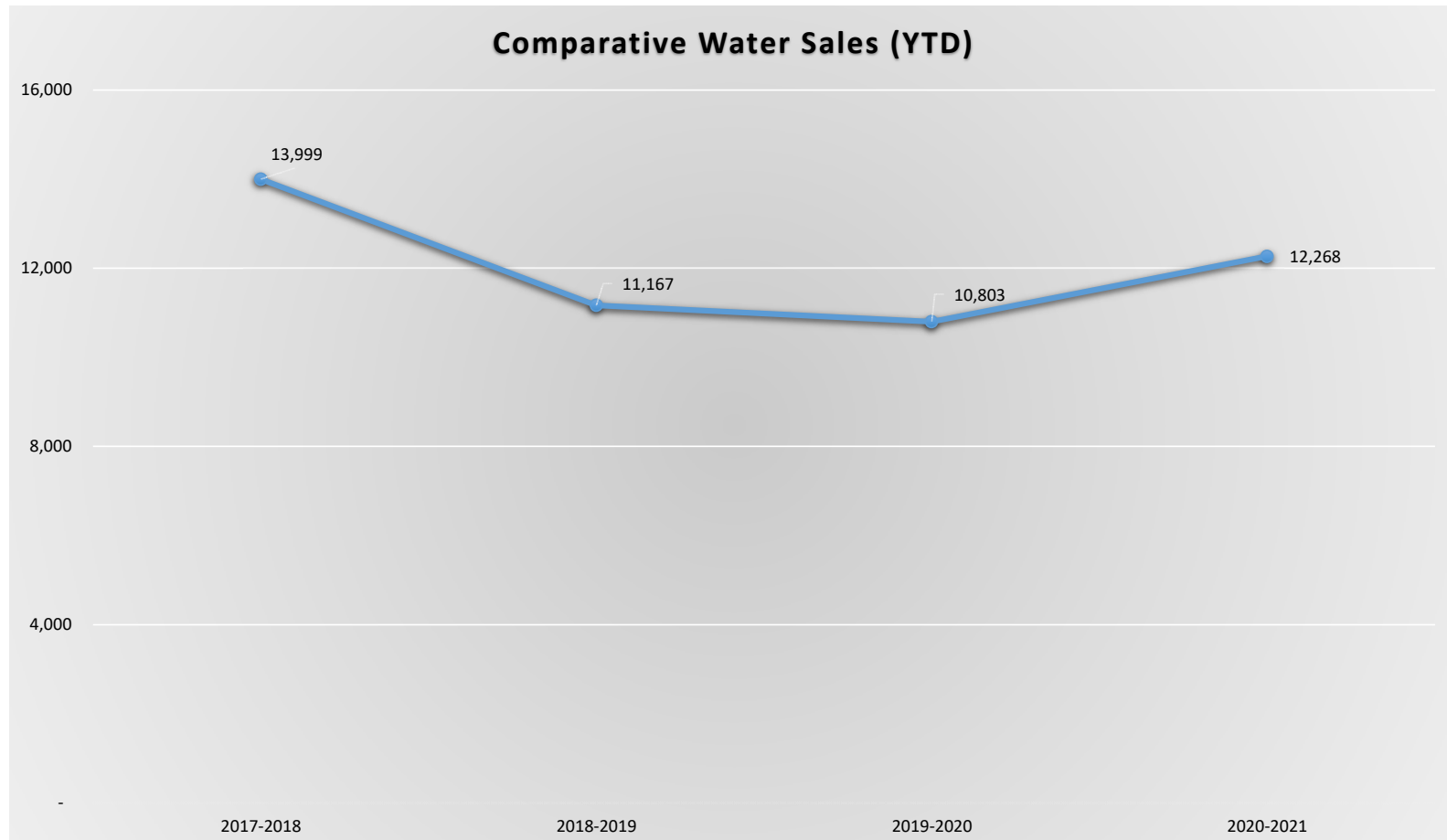
Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
563	AD	33,310	29,712	36,164	31,255	32,514	30,935	27,243	19,989	17,733				594
395	AG	144,066	131,474	145,280	120,785	126,036	102,884	92,501	61,270	63,137				2,267
247	CM	33,715	42,488	33,812	26,189	24,168	16,762	18,502	48,862	19,156				605
32	CN	2,447	3,983	8,073	10,623	18,605	5,773	3,526	2,577	2,103				132
20	IS	2,320	2,440	2,793	2,488	2,335	1,700	1,339	1,038	695				39
96	MF	11,472	10,002	13,072	10,304	11,489	11,350	9,566	8,403	8,262				216
323	SC	179,822	156,120	202,103	148,336	176,307	145,994	119,086	84,941	75,753				2,958
1024	SD	244,799	223,157	271,457	222,398	243,725	210,020	185,162	112,432	111,709				4,189
5196	SF	174,946	165,760	194,809	155,004	162,664	146,096	120,654	96,800	89,344				2,998
7896	Total	826,897	765,136	907,563	727,382	797,843	671,514	577,579	436,312	387,892	-	-	-	13,999

USAGE BY CUSTOMER CLASS FY 20-21





Comparative Water Sales YTD from Prior Years





Check Register March 2021

Description	Bank Transaction Code	Issue Date	Amount
ACWA-JPIA	ACH	03/05/2021	92,961.55
CHRIS BROWN	ACH	03/05/2021	15,000.00
ASTRA INDUSTRIAL SERV.INC	ACH	03/05/2021	1,594.14
BABCOCK LABORATORIES, INC	ACH	03/05/2021	272.00
BP BATTERY INC.	ACH	03/05/2021	1,223.89
CONCORD ENVIRONMENTAL ENERGY, INC.	ACH	03/05/2021	48,044.77
CRACKS & CORNERS CLEANING SERVICE	ACH	03/05/2021	1,657.00
DESIGN SPACE MODULAR BUILDINGS	ACH	03/05/2021	3,499.28
FALLBROOK EQUIPMENT RENTAL	ACH	03/05/2021	1,028.12
FLEET TRUCK & AUTO SHOP INC.	ACH	03/05/2021	7,227.26
FLYERS ENERGY LLC	ACH	03/05/2021	4,748.22
HAAKER EQUIPMENT CO.	ACH	03/05/2021	1,076.01
HARRIS & ASSOCIATES, INC.	ACH	03/05/2021	46,659.00
ICONIX WATERWORKS (US) INC	ACH	03/05/2021	29,227.23
INFOR (US), INC.	ACH	03/05/2021	6,920.00
INFRASTRUCTURE ENGINEERING CORPORATION	ACH	03/05/2021	3,045.00
INLAND KENWORTH (US) INC	ACH	03/05/2021	481.25
PETERS PAVING & GRADING, INC	ACH	03/05/2021	26,350.00
PRECISION MOBILE DETAILING	ACH	03/05/2021	647.50
RENE BUSH	ACH	03/05/2021	726.00
RT LAWRENCE CORPORATION	ACH	03/05/2021	600.00
SAFETY-KLEEN	ACH	03/05/2021	3,939.07
TRAFFIC SAFETY SOLUTIONS, LLC	ACH	03/05/2021	10,500.00
UNDERGROUND SERVICE ALERT	ACH	03/05/2021	302.58
WESTERN LANDSCAPE MAINTENANCE PLUS, INC.	ACH	03/05/2021	532.51

Description	Bank Transaction Code	Issue Date	Amount
AT&T LONG DISTANCE	CHECK	03/05/2021	27.82
AT&T MOBILITY	CHECK	03/05/2021	2,686.59
AYALA ENGINEERING, INC.	CHECK	03/05/2021	23,700.00
AZUGA, INC.	CHECK	03/05/2021	1,136.95
BOOT BARN INC	CHECK	03/05/2021	360.74
BROWN & CALDWELL	CHECK	03/05/2021	3,357.48
CDW GOVERNMENT, INC.	CHECK	03/05/2021	5,637.82
CHRIS HAND	CHECK	03/05/2021	101.00
CIVILITY PARTNERS	CHECK	03/05/2021	3,000.00
COLONIAL LIFE & ACCIDENT INS.	CHECK	03/05/2021	60.71
CORE & MAIN LP	CHECK	03/05/2021	3,047.41
COVID HEALTH & TESTING LLC	CHECK	03/05/2021	150.00
CRAIG SHOBE	CHECK	03/05/2021	845.00
CWEA	CHECK	03/05/2021	384.00
DAVID SEYMOUR	CHECK	03/05/2021	1,089.00
DAWN M LUNA	CHECK	03/05/2021	82.61
DAWN SHARP	CHECK	03/05/2021	2,153.84
DIAMOND ENVIRONMENTAL SERVICES	CHECK	03/05/2021	595.28
EVANS HYDRO, INC.	CHECK	03/05/2021	6,181.98
FALLBROOK PROPANE GAS CO.	CHECK	03/05/2021	1,515.80
FALLBROOK WASTE AND RECYCLING	CHECK	03/05/2021	2,275.54
FEDEX	CHECK	03/05/2021	164.32
FREEDOM AUTOMATION, INC.	CHECK	03/05/2021	2,850.00
HACH	CHECK	03/05/2021	735.76
HAYDEN HAMILTON	CHECK	03/05/2021	138.52
HDR ENGINEERING, INC.	CHECK	03/05/2021	3,916.25
HELIX ENVIRONMENTAL PLANNING INC	CHECK	03/05/2021	6,542.50
INFOSEND, INC.	CHECK	03/05/2021	10,779.39
JOE'S HARDWARE	CHECK	03/05/2021	50.14
KDM MERIDIAN	CHECK	03/05/2021	6,375.00
KNOCKOUT PEST CONTROL& TERMITE, INC.	CHECK	03/05/2021	100.00
LONDON MOEDER ADVISORS	CHECK	03/05/2021	4,837.50
MALLORY SAFETY AND SUPPLY, LLC	CHECK	03/05/2021	1,800.51

Description	Bank Transaction Code	Issue Date	Amount
MOBILE MINI, INC	CHECK	03/05/2021	204.15
MODULAR BUILDING CONCEPTS, INC	CHECK	03/05/2021	1,315.63
MULTI W SYSTEMS	CHECK	03/05/2021	1,272.14
ONESOURCE DISTRIBUTORS, LLC	CHECK	03/05/2021	3,714.53
OSTARI INC.	CHECK	03/05/2021	2,647.50
PACIFIC PIPELINE SUPPLY	CHECK	03/05/2021	3,074.74
PALOMAR HEALTH	CHECK	03/05/2021	170.00
PERRAULT CORPORATION	CHECK	03/05/2021	1,958.27
PITNEY BOWES INC.	CHECK	03/05/2021	686.82
POLLUTION CONTROL DISTRICT COUNTY OF SAN DIEGO, AIR	CHECK	03/05/2021	1,798.00
PROFESSIONAL IMAGE ADVERTISING, INC.	CHECK	03/05/2021	1,709.00
PUBLIC POLICY STRATEGIES, INC.	CHECK	03/05/2021	7,500.00
RAIN FOR RENT RIVERSIDE	CHECK	03/05/2021	4,413.18
RICHARDSON TECHNOLOGIES, INC.	CHECK	03/05/2021	549.00
RIGHT-OF-WAY ENGINEERING SERV	CHECK	03/05/2021	6,405.00
RYAN HERCO PRODUCTS CORP	CHECK	03/05/2021	1,346.76
SAN DIEGO COUNTY ASSESSOR/RECORDER/CLERK	CHECK	03/05/2021	20.00
SAN DIEGO GAS & ELECTRIC	CHECK	03/05/2021	3,703.04
SHRED-IT USA LLC	CHECK	03/05/2021	174.88
SOUTHERN CONTRACTING COMPANY	CHECK	03/05/2021	714.00
SOUTHWEST ANSWERING SERVICE, INC.	CHECK	03/05/2021	822.48
T S INDUSTRIAL SUPPLY	CHECK	03/05/2021	4,170.59
T.E. ROBERTS, INC.	CHECK	03/05/2021	3,482.79
TCN, INC	CHECK	03/05/2021	126.48
TITO AUTO UPHOLSTERY	CHECK	03/05/2021	439.87
TRAFFIC SUPPLY, INC.	CHECK	03/05/2021	386.15
TRENCH PLATE RENTAL CO.	CHECK	03/05/2021	503.99
TRI POINTE HOMES IE-SD, INC.	CHECK	03/05/2021	98.00
UNITED BUILDING MAINTENANCE CENTER LLC	CHECK	03/05/2021	2,400.00
VALLEY CONSTRUCTION MANAGEMENT	CHECK	03/05/2021	18,480.00
WATERLINE TECHNOLOGIES INC.	CHECK	03/05/2021	1,461.09
WHITE CAP CONSTRUCTION SUPPLY	CHECK	03/05/2021	500.82
WILLIAM MCALPINE	CHECK	03/05/2021	110.00

Description	Bank Transaction Code	Issue Date	Amount
SDCWA WATER PURCHASE- JAN 2021	WIRE	03/15/2021	1,299,620.70
NBS BENEFITS-ADMINISTRATION FEES	EFT	03/16/2021	125.00
HOME DEPOT CC - ALL (FEBRUARY 2021 STATEMENT)	EFT	03/18/2021	3,444.77
UNION BANK CC - KHATTAB (FEBRUARY STATEMENT)	EFT	03/18/2021	3.00
UNION BANK CC - DAUGHERTY (FEBRUARY STATEMENT)	EFT	03/18/2021	125.45
UNION BANK CC - LAGUNAS (FEBRUARY STATEMENT)	EFT	03/18/2021	59.15
UNION BANK CC - HARP (FEBRUARY STATEMENT)	EFT	03/18/2021	200.00
UNION BANK CC - DEL RIO (FEBRUARY STATEMENT)	EFT	03/18/2021	568.79
AIRGAS USA, LLC	ACH	03/19/2021	7,443.08
BABCOCK LABORATORIES, INC	ACH	03/19/2021	1,341.00
CONCORD ENVIRONMENTAL ENERGY, INC.	ACH	03/19/2021	31,886.33
DESIGN SPACE MODULAR BUILDINGS	ACH	03/19/2021	3,499.28
FLYERS ENERGY LLC	ACH	03/19/2021	10,734.77
HAAKER EQUIPMENT CO.	ACH	03/19/2021	2,857.53
HARRIS & ASSOCIATES, INC.	ACH	03/19/2021	25,245.00
ICONIX WATERWORKS (US) INC	ACH	03/19/2021	13,548.62
INFOR (US), INC.	ACH	03/19/2021	650.00
INFRASTRUCTURE ENGINEERING CORPORATION	ACH	03/19/2021	812.50
KENNEDY/JENKS CONSULTANTS INC	ACH	03/19/2021	46,809.17
LIQUID ENVIRONMENTAL SOLUTIONS OF CA, LLC	ACH	03/19/2021	4,860.00
PARADISE CHEVROLET CADILLAC	ACH	03/19/2021	2,848.82
PARKHOUSE TIRE, INC.	ACH	03/19/2021	1,084.50
PETERS PAVING & GRADING, INC	ACH	03/19/2021	8,225.00
PRECISION MOBILE DETAILING	ACH	03/19/2021	590.00
PRINCIPAL LIFE INSURANCE COMPANY	ACH	03/19/2021	7,533.30
QUALITY CHEVROLET	ACH	03/19/2021	772.76
RT LAWRENCE CORPORATION	ACH	03/19/2021	609.03
THE WELD SHOP, INC	ACH	03/19/2021	448.20
ASPIRE FINANCIAL SERVICES, LLC	CHECK	03/19/2021	900.10
AT&T	CHECK	03/19/2021	168.66
AT&T	CHECK	03/19/2021	559.71
BONSALL PEST CONTROL	CHECK	03/19/2021	200.00
BOOT BARN INC	CHECK	03/19/2021	136.80

Description	Bank Transaction Code	Issue Date	Amount
CITIBANK AS ESCROW AGENT FOR CITY OF SAN DIEGO & ORION	CHECK	03/19/2021	17,342.50
COLONIAL LIFE & ACCIDENT INS.	CHECK	03/19/2021	60.71
COPY 2 COPY	CHECK	03/19/2021	69.44
CORE & MAIN LP	CHECK	03/19/2021	15,482.01
CORRPRO COMPANIES, INC.	CHECK	03/19/2021	10,742.20
COUNTY OF S.D. DEPT OF ENVIRONMENTAL HEALTH	CHECK	03/19/2021	484.00
COUNTY OF SAN DIEGO CLERK	CHECK	03/19/2021	2,530.25
COUNTY OF SAN DIEGO, RCS	CHECK	03/19/2021	539.49
COUNTY OF SAN DIEGO CLERK	CHECK	03/19/2021	100.00
COVID HEALTH & TESTING LLC	CHECK	03/19/2021	300.00
CRAIG SHOBE	CHECK	03/19/2021	470.00
DAILY JOURNAL CORPORATION	CHECK	03/19/2021	308.10
DELL BUSINESS CREDIT	CHECK	03/19/2021	881.96
DEZURIK/APCO/HILTON	CHECK	03/19/2021	4,880.00
DIAMOND ENVIRONMENTAL SERVICES	CHECK	03/19/2021	424.14
ELIZABETH CERVANTES	CHECK	03/19/2021	661.00
FALLBROOK AUTO PARTS	CHECK	03/19/2021	2,132.52
FALLBROOK PROPANE GAS CO.	CHECK	03/19/2021	152.72
FALLBROOK WASTE AND RECYCLING	CHECK	03/19/2021	2,178.63
FEDEX	CHECK	03/19/2021	179.88
FERGUSON WATERWORKS #1083	CHECK	03/19/2021	21,553.48
FLUME TECH	CHECK	03/19/2021	583.36
FREEWAY TRAILER SALES	CHECK	03/19/2021	351.11
HAWTHORNE EQUIPMENT	CHECK	03/19/2021	3,345.57
HDR ENGINEERING, INC.	CHECK	03/19/2021	2,191.25
HELIX ENVIRONMENTAL PLANNING INC	CHECK	03/19/2021	13,463.28
HOCH CONSULTING, APC	CHECK	03/19/2021	39,447.50
IB CONSULTING, LLC	CHECK	03/19/2021	3,900.00
INFOSEND, INC.	CHECK	03/19/2021	3,809.31
JOHN & JACLINE EVERED	CHECK	03/19/2021	202.81
LANCE PICOTTE SAFETY CONSULT.	CHECK	03/19/2021	900.00
LINCOLN NATIONAL LIFE INSURANCE COMPANY	CHECK	03/19/2021	5,423.84
MOBILE MINI, INC	CHECK	03/19/2021	1,636.01

Description	Bank Transaction Code	Issue Date	Amount
MR. AND MRS. HINCHLIFF	CHECK	03/19/2021	1,870.00
NATIONAL SAFETY COMPLIANCE,INC	CHECK	03/19/2021	212.90
ORION CONSTRUCTION CORPORATION	CHECK	03/19/2021	329,507.50
PACIFIC PIPELINE SUPPLY	CHECK	03/19/2021	3,020.26
PALOMAR HEALTH	CHECK	03/19/2021	170.00
PERRAULT CORPORATION	CHECK	03/19/2021	3,688.17
PUBLIC POLICY STRATEGIES, INC.	CHECK	03/19/2021	7,500.00
RAIN FOR RENT RIVERSIDE	CHECK	03/19/2021	2,256.44
RINCON CONCLTANTS, INC.	CHECK	03/19/2021	887.00
ROBERT HELLING	CHECK	03/19/2021	3,926.00
ROLLIN C BUSH	CHECK	03/19/2021	2,333.33
SAN DIEGO FRICTION PRODUCTS, INC.	CHECK	03/19/2021	107.89
SAN DIEGO GAS & ELECTRIC	CHECK	03/19/2021	68,983.03
SHORAGO TRAINING SERVICES	CHECK	03/19/2021	1,900.00
SOFTCHOICE CORPORATION	CHECK	03/19/2021	23,529.94
STEVEN MARK DISHON	CHECK	03/19/2021	4,290.00
STREAMLINE	CHECK	03/19/2021	300.00
SUPERIOR READY MIX	CHECK	03/19/2021	423.91
T S INDUSTRIAL SUPPLY	CHECK	03/19/2021	8,960.23
TEMECULA VALLEY PAINT, INC.	CHECK	03/19/2021	523.45
TIAA COMMERCIAL FINANCE, INC.	CHECK	03/19/2021	2,718.97
US CALIBRATION INCORPORATED	CHECK	03/19/2021	650.00
VALLEY CONSTRUCTION MANAGEMENT	CHECK	03/19/2021	17,325.00
WATERLINE TECHNOLOGIES INC.	CHECK	03/19/2021	1,826.36
WHITE CAP CONSTRUCTION SUPPLY	CHECK	03/19/2021	254.07
WILD ACRES ROAD MAINTENANCE	CHECK	03/19/2021	750.00
ADP - ADVICE OF DEBIT #576287524	EFT	03/19/2021	1,887.29
SAN DIEGO LAFCO	CHECK	03/24/2021	50,000.00
YOUSSEF YOUSSEFZADE	CHECK	03/24/2021	338.00
AMERICAN EXPRESS - REWARDS (FEBRUARY STATEMENT)	WIRE	03/24/2021	180.00
		Total:	2,656,258.57

Director's Expenses FY 2020-2021

Disbursement Date	Description	Helene Brazier	Miguel Gasca	Claude Hamilton	Michael Mack	Carl Rindfleisch	Pam Moss
07/31/20	CAL PERS - HEALTH INS. WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	
	TRAVEL EXPENSES MILEAGE EXPENSE				\$ 102.35		
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 252.35</u>	<u>\$ 150.00</u>	
08/31/20	CAL PERS - HEALTH INS. WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	
	TRAVEL EXPENSES MILEAGE EXPENSE						
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	

Director's Expenses FY 2020-2021

Disbursement Date	Description	Helene Brazier	Miguel Gasca	Claude Hamilton	Michael Mack	Carl Rindfleisch	Pam Moss
09/30/20	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS		\$ 150.00	\$ 150.00	\$ 300.00	\$ 300.00	
	TRAVEL EXPENSES MILEAGE AND EXPENSES						
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals	\$ -	\$ 150.00	\$ 150.00	\$ 300.00	\$ 300.00	
10/31/20	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS		\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	
	TRAVEL EXPENSES MILEAGE AND EXPENSES						
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals	\$ -	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	

**Director's Expenses
FY 2020-2021**

Disbursement Date	Description	Helene Brazier	Miguel Gasca	Claude Hamilton	Michael Mack	Carl Rindfleisch	Pam Moss
11/30/20	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING		\$ 375.00		\$ 375.00		
	COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS TRAVEL EXPENSES MILEAGE EXPENSE				\$ 150.00	\$ 450.00	
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals	\$ -	\$ 375.00	\$ -	\$ 525.00	\$ 450.00	
12/31/20	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING						
	COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS TRAVEL EXPENSES MILEAGE EXPENSE		\$ 450.00	\$ 150.00	\$ 450.00	\$ 150.00	\$ 150.00
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals		\$ 450.00	\$ 150.00	\$ 450.00	\$ 150.00	\$ 150.00
REPORT TOTAL FOR 2020:		\$ 300.00	\$ 1,425.00	\$ 750.00	\$ 1,827.35	\$ 1,350.00	\$ 150.00

Director's Expenses FY 2020-2021

Disbursement Date	Description	Helene Brazier	Miguel Gasca	Claude Hamilton	Michael Mack	Carl Rindfleisch	Pam Moss
01/31/21	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS TRAVEL EXPENSES MILEAGE EXPENSE REIMBURSEMENT FROM DIRECTORS Monthly Totals		\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00	\$ 150.00
			<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>
2/29/2021	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS TRAVEL EXPENSES MILEAGE EXPENSE REIMBURSEMENT FROM DIRECTORS Monthly Totals		\$ 150.00	\$ 150.00	\$ 150.00	\$ 300.00	
			<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 150.00</u>	<u>\$ 300.00</u>	<u>\$ -</u>

Director's Expenses FY 2020-2021

Disbursement Date	Description	Helene Brazier	Miguel Gasca	Claude Hamilton	Michael Mack	Carl Rindfleisch	Pam Moss
03/31/21	WATER AGENCIES ASSOC OF S.D. CSDA,SAN DIEGO CHAPTER CONFERENCES (CSDA, ACWA, etc.) TRAINING COUNCIL OF WATER UTILITIES DIRECTORS' PER DIEMS TRAVEL EXPENSES MILEAGE EXPENSE REIMBURSEMENT FROM DIRECTORS					\$ 450.00	\$ 300.00
	Monthly Totals	\$ -	\$ -	\$ -	\$ -	\$ 450.00	\$ 300.00
REPORT TOTAL FOR 2021:			\$ 300.00	\$ 300.00	\$ 300.00	\$ 450.00	\$ 150.00



AMERICAN EXPRESS

March 2021

GL Finance Code	GL Transaction Amount	Description
GL 03 20 75300	375.00	ACWA #INV-32915-Y8J1Z9
GL 03 20 75300	375.00	ACWA #INV-32916-Q4Z6G0
GL 03 41 72900	39.86	AMAZON #111-0685197-5169845
GL 03 44 72000	84.43	AMAZON #111-7281942-4316264
GL 03 44 60100	273.62	AMAZON #112-1056676-8885824
GL 03 44 60100	17.21	AMAZON #112-1574559-4507422
GL 03 44 60100	25.58	AMAZON #112-2090611-8923423
GL 03 44 60100	320.19	AMAZON #112-4208008-2127426
GL 03 44 60100	314.37	AMAZON #112-6403036-9613035
GL 03 44 60100	110.03	AMAZON #112-8970986-3820241
GL 03 44 60100	14.64	AMAZON #112-8970986-3820241
GL 03 44 60100	34.32	AMAZON #112-9661924-3614626
GL 03 91 72000	73.27	AMAZON #114-2419187-5425864
GL 03 36 63100	64.65	AMAZON #114-7141443-4485866
GL 03 41 63400	126.36	AMAZON #114-7414255-8394607
GL 03 44 60100	0.29	AMAZON WEB SERVICES
GL 03 43 72000	223.00	AMERICAN INDUSTRIAL
GL 03 43 72000	2.99	APPLE.COM #MK9ZQDQ0D9
GL 03 44 60100	90.00	ATLASSIAN #AT-130990074
GL 03 44 60100	36.83	AUTHORIZE.NET, 03-31-21
GL 03 44 60100	292.51	AZURE #E0300DWPC6
GL 02 61 72000	470.00	CDTFA USE TAX #102-525137 / 2020
GL 03 41 72000	35.00	CDTFA USE TAX #102-525137 / 2020
GL 03 91 72000	132.00	CDTFA USE TAX #102-525137 / 2020
GL 03 43 72000	47.00	CDTFA USE TAX #102-525137 / 2020
GL 03 43 72000	33.00	CDTFA USE TAX #102-525137 / 2020
GL 01 34 72000	228.00	CDTFA USE TAX #102-525137 / 2020

GL Finance Code	GL Transaction Amount	Description
GL 03 41 72000	21.74	CDTFA USE TAX #102-525137 / 2020
GL 03 20 75300	175.00	CSDA #90855
GL 03 41 63401	84.80	CULLIGAN
GL 03 44 60100	39.44	DIRECT TV
GL 03 41 63400	38.25	FRUIT GUYS #5554739
GL 03 41 63400	76.50	FRUIT GUYS #5555479
GL 03 41 63400	38.25	FRUIT GUYS #5556157
GL 03 41 63400	76.50	FRUIT GUYS #5556703
GL 03 44 72000	12.00	GOOGLE DOMAINS
GL 03 41 74100	972.65	JIVE #IN7100207425
GL 03 42 75400	468.00	KAHOOT!
GL 03 44 72400	1,008.00	LASTPASS.COM
GL 03 44 72400	75.00	LOGMEIN
GL 03 41 72000	169.00	MELODY LOOPS #147030335
GL 03 41 63400	750.00	NATUREBOX #11354
GL 03 36 72000	1,624.24	NEXGEN #35
GL 03 36 72000	720.40	NEXGEN #86
GL 03 41 70300	4,473.00	NOSSAMAN #519314
GL 60 99 70300 600003	3,479.00	NOSSAMAN #519314
GL 60 99 70300 600021	1,384.50	NOSSAMAN #519314
GL 53 99 70300 530001	674.50	NOSSAMAN #519314
GL 53 99 70300 530017	994.00	NOSSAMAN #519314
GL 03 91 70300 700034	816.50	NOSSAMAN #519314
GL 60 99 70300 600059	177.50	NOSSAMAN #519314
GL 60 99 70300 600013	426.00	NOSSAMAN #519314
GL 03 41 70300	11,191.00	NOSSAMAN #519315
GL 03 41 70300	577.50	NOSSAMAN #519317
GL 03 41 70300	270.00	NOSSAMAN #519318
GL 03 91 70300 300008	3,330.00	NOSSAMAN #519318
GL 03 41 70300	12,221.78	NOSSAMAN #519319
GL 03 41 70300	2,948.00	NOSSAMAN #519322
GL 60 99 70300 600003	1,007.50	NOSSAMAN #519322
GL 60 99 70300 600013	520.00	NOSSAMAN #519322
GL 53 99 70300 530001	325.00	NOSSAMAN #519322

GL Finance Code	GL Transaction Amount	Description
GL 03 91 60000	703.66	NPI #99654562
GL 03 41 72900	106.95	OFFICE DEPOT #144975579001
GL 03 41 72900	171.29	OFFICE DEPOT #148687224001
GL 03 41 72900	413.50	OFFICE DEPOT #152106740001
GL 03 42 72900	129.19	OFFICE DEPOT #152455063001
GL 03 41 72900	123.18	OFFICE DEPOT #155832135001
GL 03 44 72000	99.09	ONESOURCE DISTRIBUTORS
GL 03 43 72000	47.95	PALA MESA MARKET #120874
GL 03 44 60100	1,553.58	PMC ENGINEERING
GL 03 41 75300	17.65	PREPASS
GL 03 44 60100	10.00	RING
GL 03 43 72000	32.45	STAPLES #808087
GL 03 43 72000	87.00	STAPLES #844301
GL 03 43 72000	2,749.00	VELOCITY EHS
GL 03 43 72000	54.09	VILLAGE PIZZA
GL 03 41 60100	19.79	WASABI
GL 03 41 63401	133.38	WAXIE
GL 03 41 63401	222.50	WAXIE
GL 01 34 72000	300.00	WHIP AROUND
GL 01 35 72000	35.00	ZOHO #66874744
GL 03 44 60100	279.88	ZOOM
GL 03 44 60100	6.42	ZOOM
	62,300.25	American Express (March Statement)

Rainbow Municipal Water District
Property spreadsheet

APN	Description of Use	Acreage
1023000800	North Reservoir	4.8
1023001100	U-1 Pump Station	0.14
1023005000	Rainbow Creek Crossing near North Reservoir	0.89
1023005300	Connection 9	0.01
1024300900	Pump Station across PS1 (not in use)	0.12
1025702000	U-1 Tanks	1.08
1026305400	Pump Station #1	0.33
1026602000	Booster Pump Station #4	0.03
1027001600	Pump Station #3	0.67
1071702800	Connection 7	1.60
1071702900	Pala Mesa Tank	10.35
1080206900	Northside Reservoir	9.23
1082210600	Beck Reservoir	27.25
1082210900	Near Beck Reservoir	4.82
1082211000	Near Beck Reservoir	6.23
1082211800	Near Beck Reservoir - Excess Property (not in use)	4.68
1084210600	Rice Canyon Tank	1.00
1084410300	Canonita Tank	2.41
1091410700	Gomez Creek Tank	1.00
1092310900	Rainbow Heights Tank	0.35
1092330300	Rainbow Heights Tank	0.99
1092341000	Rainbow Heights Concrete Tank - used for SCADA	1.74
1093101800	Vallecitos Tank	0.55
1093822800	Magee Tank	1.03
1093912400	Magee Pump Station	0.3
1100721000	Huntley Road Pump Station	0.52
1102203700	Huntley Chlorination Station (not in use)	0.2
1212011000	Morro Tank	0.31
1212011100	Morro Tank	4.85
1212011200	Morro Reservoir	13.01
1213300900	Morro Reservoir	6.79
1250703200	Sumac Reservoir (Not in Use)	1.72
1250902600	Headquarters	7.38
1250903400	Headquarters	4.43
1250903500	Headquarters	3.40
1250903800	Headquarters	17.03
1251002100	Rancho Viejo Lift Station #5	0.05
1252311800	Hutton Tank	1.39
1252312600	Hutton Tank	0.89
1260803100	Via de los Cepillos Easement	0.47
1261708700	Lift Station #2	0.08
1261708900	Lift Station #2	0.12
1263004200	Lift Station #1	0.01
1270710500	Bonsall Reservoir (Not in Use)	6.19
1270710600	Connection 6	0.28
1271512300	Turner Tank	15.12
1721404300	Gopher Canyon Tank	1.84
	<i>Total</i>	167.68

