RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD MEETING/
ENGINEERING SPECIAL MEETING

RAINBOW MUNICIPAL WATER DISTRICT
Tuesday, August 23, 2016
Closed Session – Time 12:00 p.m.
Open Session - Time: 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 recorded on CD's as a secretarial aid. If you wish to listen to the recordings, they will be available after the draft minutes of the meeting have been prepared. There is no charge associated with copies of CD's. Recordings will be kept for two years. 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.

(*) - Asterisk indicates a report is attached.

Notice is hereby given that the Rainbow Municipal Water District Board of Directors and Engineering Committee will hold Closed Session at 12:00 p.m. and Open Session at 1:00 p.m. Tuesday, August 23, 2016, 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. **PLEDGE OF ALLEGIANCE**

3. **BOARD OF DIRECTORS ROLL CALL:**

   Sanford____ Walker_____ Brazier_____ Bigley___ Stewart____

   ENGINEERING COMMITTEE ROLL CALL:

   Timothy Prince ____ Harry Stitle ____ Tom Taufer ____ Jim Muray ____

   Helene Brazier____ Lee Kirby_____ Mick Ratican _____ John Robertson Jr.____

   Robert Marnett_____

4. **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 indicate their desire to speak by filling out and submitting a "Speaker's Slip" to the Board Secretary before the meeting begins. *Speaking time shall generally be limited to three minutes, unless a longer period is permitted by the Board President.*

5. **CLOSED SESSION**

   A. Appointment, Employment; Evaluation of Performance – General Manager (Government Code §54957)

   B. Conference with Legal Counsel-Anticipated Litigation (Government Code §54956.9(d)(2))
   - Two potential matters

6. **REPORT ON POTENTIAL ACTION FROM CLOSED SESSION**

Time Certain: 1:00 p.m.

7. **PLEDGE OF ALLEGIANCE**

8. **REPEAT REPORT ON POTENTIAL ACTION FROM CLOSED SESSION**

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

(*) - Asterisk indicates a report is attached.

10. 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 by filling out and submitting a "Speaker's Slip" to the Board Secretary before the meeting begins. *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.*

***11. APPROVAL OF MINUTES**

A. July 26, 2016 - Regular Board Meeting

12. 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 Sanford)
B. Representative Report (Appointed Representative)
  1. SDCWA
    A. Summary of Formal Board of Directors' Meeting July 28, 2016
  2. CSDA
  3. LAFCO
  4. San Luis Rey Watershed Council
  5. Santa Margarita Watershed Council
C. Meeting, Workshop, Committee, Seminar, Etc. Reports by Directors (AB1234)
D. Directors Comments
E. Engineering Committee Member Comments

***13. COMMITTEE REPORTS (Approved Minutes have been attached for reference only.)**

A. Budget and Finance Committee
  1. July 12, 2016 Minutes
B. Communications Committee
  1. July 11, 2016 Minutes
C. Engineering Committee
  1. July 6, 2016 Minutes

PRESENTATION

***14. WATER RECLAMATION PLANT PRE-DESIGN REPORT**
(In January 2016, the District entered a Professional Services Agreement with the consultant, Dudek, to prepare a pre-design report to further evaluate the feasibility and costs associated with a District-owned water reclamation plant and recycled water distribution system. The analysis determined two feasible options to be presented, however, the market analysis for recycled water raised significant questions. The market for recycled water and the possibility of indirect potable reuse warrant further evaluation prior to making a final decision on which alternative best fits the needs of the District.)

(*) - Asterisk indicates a report is attached.

BOARD ACTION ITEMS

15. DISCUSSION AND POSSIBLE ACTION TO AWARD A PROFESSIONAL SERVICES CONTRACT TO PROVIDE DESIGN SERVICES FOR THE PUMP STATION #1 NATURAL GAS MOTOR REPLACEMENTS PROJECT

(Pump Station #1 is the largest of the District's 7 pump stations. Pump Station #1 consists of 2- 250 horse power (HP) pumps, 1 – 300 HP pump and 1 – 290 HP pump, with a total capacity of 3,509 gpm. The two natural gas engines, with 300 HP and 290 HP respectively, need to be replaced with electric motors due to Air Pollution Control Board permitting, age, and maintenance costs for the natural gas engines. The District issued a Request for Proposals and two firms responded.)

***16. DISCUSSION AND POSSIBLE ACTION TO ADOPT RESOLUTION NO. 16-18, APPROVING A LETTER OF UNDERSTANDING BETWEEN THE RAINBOW MUNICIPAL WATER DISTRICT AND THE RAINBOW EMPLOYEES ASSOCIATION**

(After a review of the operational needs of the District's water transmission and water treatment facilities, the District has determined that Patrol Duty for System's Operators is no longer required because operational needs can be met through remote monitoring and maintenance of the SCADA telemetry system. The proposed Letter of Understanding (LOU) would amend Article 8 (Compensation), Section 7 (Standby Duty), and eliminate Article 8 (Compensation), Section 8 (Patrol Duty). All other Articles and Sections of the current MOU would remain unchanged.)

***17. DISCUSSION AND POSSIBLE ACTION TO ADOPT ORDINANCE NO. 16-12, UPDATING AND AMENDING ADMINISTRATIVE CODE SECTION 8.04.030 – APPLICATION FOR A REMOTE METER**

(This Board Action is to clean up formatting in the Administrative Code in order to provide more clarity to the content. There is no actual change to the language – just the manner in which the language is presented in the Administrative Code.)

18. DISCUSSION AND POSSIBLE ACTION REGARDING THE APPOINTMENT; EMPLOYMENT; EVALUATION OF PERFORMANCE: GENERAL MANAGER

(The Board may take action regarding the appointment, employment, performance or compensation of the General Manager.)

BOARD INFORMATION ITEMS

19. REVIEW OF LEGAL COUNSEL RESPONSEES TO REQUEST FOR PROPOSALS

(Under the Water Code Section 71340, Municipal Water Districts must appoint an attorney to serve the District. Currently, the District's General Counsel services are provided by Procopio, Corey, Hargreaves, and Savitch (Procopio). This agenda item is designed to provide for an opportunity for the Board to review and discuss the proposals in greater detail and to determine the appropriate course of action going forward. This is not an action item to approve a contract with any firm, but the place and time to discuss the proposals that have been received.)

***20. RECEIVE AND FILE INFORMATION AND FINANCIAL ITEMS FOR JULY 2016**

- **A. General Manager Comments**
  - **1.** Meetings, Conferences and Seminar Calendar
- **B. Communications**
  - **1.** Staff Training Reports
- **C. Operations Comments**
  - **1.** Operations Report
- **D. Engineering Comments**
  - **1.** Engineering Report

(*) - Asterisk indicates a report is attached.

E. Customer Service Comments
1. Customer Service Report

F. Finance Manager Comments
1. Interim Financial Statement
2. Directors' Expense
3. Check Register
4. Water Purchases & Sales Summary
5. RMWD Sewer Equivalent Dwelling Units (EDU's) Status

21. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT REGULAR BOARD MEETING

22. ADJOURNMENT - To Tuesday, September 27, 2016 at 1:00 p.m.

ATTEST TO POSTING:

Helene Brazier
Secretary of the Board

8-15-16 @ 8:30 A.M.
Date and Time of Posting
Outside Display Cases

(*) - Asterisk indicates a report is attached.

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MINUTES OF THE REGULAR BOARD MEETING
OF THE BOARD OF DIRECTORS OF THE
RAINBOW MUNICIPAL WATER DISTRICT
JULY 26, 2016

1. CALL TO ORDER - The Regular Meeting of the Board of Directors of the Rainbow Municipal Water District on July 26, 2016 was called to order by President Sanford at 12:31 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. President Sanford presiding.

2. ROLL CALL

Present: Director Sanford, Director Walker, Director Brazier, Director Bigley, Director Stewart.

Also Present: General Manager Kennedy, Executive Assistant Washburn, Legal Counsel Ochoa, Operations Manager Milner, Finance Manager Martinez, Superintendent Maccarrone, Superintendent Zuniga, Superintendent Walker, Administrative Analyst Gray, Acting Engineering Manager Powers, Human Resources Manager Harp.

No members of the public were present before Open Session. Five members of the public were present for Open Session.

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

There were no changes.

4. 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 12:32 p.m.

5. CLOSED SESSION

A. Conference with Legal Counsel—Anticipated Litigation (Government Code section 54956.9(d)(2))

* Significant exposure to litigation - 1 matter

The meeting reconvened at 1:00 p.m.

6. REPORT ON POTENTIAL ACTION FROM CLOSED SESSION

This report was provided under Item #8.

(*) - Asterisk indicates a report is attached.

Time Certain: 1:00 p.m.

7. PLEDGE OF ALLEGIANCE

8. REPEAT REPORT ON POTENTIAL ACTION FROM CLOSED SESSION

President Sanford stated there was nothing to report.

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

There were no changes.

10. 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).

Paul Wick mentioned he owns 120 acres across the street from the Pala Casino for which he has paid approximately $4,000 a year for water. He stated there was a water availability charge for RMWD on his tax bill. He explained how ten years ago that they had to have this tax bill charge in order to sell or do anything else with their property; therefore, he did not bother to look into it any further. He said after talking to other property owners in the area, he was asked why he was paying this money and what was he paying for.

Mr. Kennedy confirmed with Mr. Wick that there was no water on the property. He explained all parcels within the geographic boundaries of the District are subject to the taxation from Metropolitan California, San Diego County Water Authority, and Rainbow Municipal Water District. He stated although it was a challenge and process to get through, he recommended Mr. Wick get with Mr. Powers who will provide him with the contact information he needs to proceed.

***11. APPROVAL OF MINUTES**

A. June 28, 2016 - Regular Board Meeting

Motion:

Approve the minutes as submitted.

Action: Approve, Moved by Director Brazier, Seconded by Director Bigley.

Vote: Motion passed (summary: Ayes = 4, Noes = 0, Abstain = 1).

Ayes: Director Sanford, Director Walker, Director Brazier, Director Bigley.

Abstain: Director Stewart.

(*) - Asterisk indicates a report is attached.

12. 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 Sanford)

President Sanford reminded the Board the candidate election packets must be at the Registrar of Voters on August 12, 2016 before 5:00 p.m.

President Sanford also mentioned the general manager performance reviews are due to Legal Counsel by August 16, 2016.

B. Representative Report (Appointed Representative)

1. SDCWA

Mr. Kennedy noted a new promotional BeWaterWise,com promotional campaign for San Diego County will be coming out over the media in the near future.

2. CSDA

Mr. Kennedy noted the quarterly dinner meeting will be in August. He mentioned he was approached about possibly serving as the president of CSDA.

3. LAFCO

Mr. Kennedy reported the SDAC meeting was cancelled this month.

Director Brazier mentioned FPUD called a Special Board meeting attended by Michael Ott of LAFCO where discussions took place regarding FPUD activating their latent powers within 4-5 areas; however, they were not pleased with the costs involved and were now just considering activating their park and recreation powers.

4. San Luis Rey Watershed Council

Director Walker noted the recent meeting was cancelled; however, an email was sent out in place of the meeting to reiterate the efforts on the implementation of the grant the Council received. He confirmed a person was hired to be their executive director.

5. Santa Margarita Watershed Council

President Sanford reported on the meeting prior to the last meeting where the main topic was the replacement of the Watermaster.

C. Meeting, Workshop, Committee, Seminar, Etc. Reports by Directors (AB1234)

Director Walked talked about the Council of Water Utilities meeting that Mr. Kennedy, Director Stewart and he attended where a history of the formation of and purpose for Metropolitan Water District was given. Discussion followed.

D. Directors Comments

There were no comments.

***13. COMMITTEE REPORTS (Approved Minutes have been attached for reference only.)**

A. Budget and Finance Committee
1. June 14, 2016 Minutes

There was no report given.

B. Communications Committee
1. June 6, 2016 Minutes

Mr. Kennedy reported there were discussions regarding ratepayer surveys and whether these should be conducted and what type of questions should be asked. He noted staff has looked into the having an outside firm conduct the survey and found it to be quite costly.

C. Engineering Committee
1. June 1, 2016 Minutes

Mr. Powers reported one of the main topics discussed was the draft wastewater treatment report and what options may be available as well as the costs involved.

BOARD ACTION ITEMS

***14. DISCUSSION AND POSSIBLE ACTION ON ADOPTION OF 2016 RMWD DOMESTIC WATER, RECYCLED WATER AND SANITARY SEWER FACILITIES CONSTRUCTION STANDARDS MANUAL**

Mr. Kennedy noted this was a large document. Mr. Powers stated there were several pages of comments and revisions which could be provided to anyone interested.

Director Stewart asked if the revisions would be categorized as minor or major. Mr. Powers talked about the major revisions made to the plan to include General Conditions 1.24, Tech Specs Sections 13200, 13250 and 15112. He pointed out the biggest revision was to Section 15112 updating backflow prevention assemblies.

Mr. Powers talked about the steps that took place during the review process. He noted the Engineering Committee voted unanimously to recommend adoption of the plan in March 2016 after several staff and committee member reviews.

Mr. Powers gave a brief description of the RMWD Domestic Water, Recycled Water and Sanitary Sewer Facilities Construction Standards Manual.

President Sanford asked if RMWD's manual runs parallel with those of other local agencies. Mr. Kennedy stated in general it does; however, there may be certain projects in other agency plans that RMWD may not necessarily want in its Plan.

Director Stewart inquired about going out for bids on projects whether the plans and specs related to projects are to be subject to this manual. Legal Counsel confirmed there is language in the documents that states that these Standards control in the event there are inconsistencies between the documents.

Motion:

To accept the revised Standards Manual.

Action: Approve, Moved by Director Walker, Seconded by Director Brazier.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Sanford, Director Walker, Director Brazier, Director Bigley, Director Stewart.

***15. DISCUSSION AND POSSIBLE ACTION TO AWARD A PROFESSIONAL SERVICES AGREEMENT WITH NOBEL SYSTEMS, INC. FOR GEOVIEWER ONLINE, GEOVIEWER MOBILE, INFOR ENTERPRISE ASSET MANAGEMENT INTEGRATION, AND SPRINGBROOK CUSTOMER SERVICE SOFTWARE INTEGRATION**

Mr. Kennedy gave a presentation and demonstration on the integration of these systems.

Director Stewart pointed out this will revolutionize RMWD's ability to evaluate the useful life and replacement costs of the District's assets.

Director Walked stated the long term return on this investment would be huge.

Motion:

Option 1 - Approve the Professional Service Agreement with Nobel Systems, Inc.

Action: Approve, Moved by Director Stewart, Seconded by Director Brazier.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Sanford, Director Walker, Director Brazier, Director Bigley, Director Stewart.

BOARD INFORMATION ITEMS

***16. QUARTERLY STRATEGIC PLAN OBJECTIVES AND GOALS UPDATE**

Mr. Kennedy explained this was something that will be brought back to the Board quarterly as a means of providing updates. He continued with a presentation of the quarterly update.

Director Walker suggested a monthly update on the committees in terms of the strategic plan tasks be given during the monthly committee reports at the Board meetings.

President Sanford congratulated Mr. Kennedy on the accomplishments.

(*) - Asterisk indicates a report is attached.

***17. RECEIVE AND FILE INFORMATION AND FINANCIAL ITEMS FOR JUNE 2016**

A. General Manager Comments
- **1.** Meetings, Conferences and Seminar Calendar

B. Communications
- **1.** Ratepayer Letters
- **2.** Staff Training Reports

C. Operations Comments
- **1.** Operations Report

D. Engineering Comments
- **1.** Engineering Report

E. Customer Service Comments
- **1.** Customer Service Report

F. Human Resource & Safety Comments
- **1.** Human Resources Report
- **2.** Organizational Chart

G. Finance Manager Comments
- **1.** Interim Financial Statement
- **2.** Credit Card Breakdown
- **3.** Directors' Expense
- **4.** Check Register
- **5.** Water Purchases & Sales Summary
- **6.** RMWD Sewer Equivalent Dwelling Units (EDU's) Status

Motion:

To receive and file information and financial items.

Action: Approve, Moved by Director Brazier, Seconded by Director Stewart.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Director Sanford, Director Walker, Director Brazier, Director Bigley, Director Stewart.

Discussion ensued regarding the steps being taken by staff regarding investigating those accounts that may have been impacted by the Rice Canyon Fire.

Director Walker said after 20 years, he and his wife have decided to move to an area outside of the District; therefore, he will be regrettably turning in his resignation. He stated it has been his pleasure to serve on this Board. He mentioned although he ran because he has seen so much dysfunction over the years, he did not know that the Board made some very wise decisions and set the District on a good course. He said he will attend the meetings up until October at which time he will officially resign.

Mr. Kennedy explained the appointee selected to replace Director Walker on the Board will serve until the end of 2018. He pointed out once Director Walker turns in his letter of resignation with the official date he will resign, the District will be allowed to notify the Registrar of Voters as well as give the Board an opportunity to decide which selection process they would like to utilize to fill the vacancy.

18. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT REGULAR BOARD MEETING

A member of the public provided Mr. Kennedy with a letter regarding a matter he would like to get resolved.

19. ADJOURNMENT - To Tuesday, August 23, 2016 at 1:00 p.m.

The meeting was adjourned with a motion made by Director Stewart and seconded by Director Brazier to a regular Board and joint Engineering Committee meeting on August 23, 2016 at 1:00 p.m.

The meeting was adjourned at 2:37 p.m.

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Dennis Sanford, Board President

_____

Dawn M. Washburn, Board Secretary

(*) - Asterisk indicates a report is attached.

San Diego County Water Authority

SUMMARY OF FORMAL BOARD OF DIRECTORS' MEETING
JULY 28, 2016

1 Monthly Treasurer's Report on Investments and Cash Flow.
The Board noted and filed monthly Treasurer's Report.

2 A Resolution setting the time and date for a Public Hearing to consider amendments to the San Diego County Water Authority Local Conflict of Interest Code.
The Board adopted Resolution No. 2016-12 setting the August regular meeting of the Administrative and Finance Committee as the time and date of a public hearing to consider amendments to the San Diego County Water Authority Local Conflict of Interest Code.

3 Amendment to the legal services agreement with Hawkins Delafield & Wood LLP.
The Board authorized the General Counsel to amend the legal services agreement with Hawkins Delafield & Wood LLP as special counsel to include new transactional legal work for the Claude "Bud" Lewis Carlsbad Desalination Plant project intake and discharge system modifications, for a not-to-exceed amount of $180,000.

4 Amendment to professional services contract with Louis Berger Group.
The Board authorized the General Manager to approve Amendment No. 6 to the professional services contract with Louis Berger Group for technical support services for the proposed intake and discharge modifications for the Claude "Bud" Lewis Carlsbad Desalination Plant, in the amount of $147,900, for a total contract value of $1,287,692, and extending the term from its current end date of December 31, 2016 to June 30, 2017.

5 Advance wetlands mitigation credit purchase agreement with Brook Forest LLC.
The Board authorized the General Manager to conclude negotiations and enter into an agreement to purchase six wetland (re-establishment) mitigation credits for an amount not to exceed $2.1 million.

6 Boulder Canyon Power Agreement.
The Board authorized the General Manager to execute the Electric Service Contract and Restated Implementation Agreement with the Western Area Power Administration to purchase power from the Boulder Canyon Project.

7 Notice of Completion for the construction contract with Palm Engineering Construction Company, Inc. for the Ramona Pipeline Pump Well Project.
The Board authorized the General Manager to accept the Ramona Pipeline Pump Well project as complete, record the Notice of Completion, and release funds held in retention to Palm Engineering Construction Company, Inc. following expiration of the retention period.

8 Water Authority Sponsorship of Legislation in the 2016 State Legislative Session.
The Board approved to sponsor legislation during the 2016 legislative session to clarify statutory authority under the County Water Authority Act relative to energy matters.

MINUTES OF THE BUDGET AND FINANCE COMMITTEE MEETING
OF THE RAINBOW MUNICIPAL WATER DISTRICT
JULY 12, 2016

1. **CALL TO ORDER**: The Budget & Finance Committee meeting of the Rainbow Municipal Water District was called to order by Chairperson Stitle on July 12, 2016 in the Board Room of the District Office at 3707 Old Highway 395, Fallbrook, CA 92028 at 1:06 p.m. Chairperson Stitle presiding.

2. **PLEDGE OF ALLEGIANCE**

3. **ROLL CALL:**

Present: Member Stitle, Member Hensley, Member Ross, Alternate Member Martinez

Absent: Member Moss, Member Clyde

Also Present: General Manager Kennedy**,** Administrative Analyst Gray

One member of the public was present.

4. **ADDITIONS/DELETIONS/AMENDMENTS TO THE AGENDA (Government Code §54954.2)**

There were none.

5. **PUBLIC COMMENT RELATING TO ITEMS NOT ON THE AGENDA (Limit 3 Minutes)**

Ms. Brazier reported that Fallbrook Public Utility District will be holding a Special Board Meeting on Thursday, July 14, 2016 regarding approval of their fiscal year 2016-17 budget.

COMMITTEE ACTION ITEMS

6. **COMMITTEE MEMBER COMMENTS**

There were none.

***7.** **APPROVAL OF MINUTES**

A. June 14, 2016

Motion:

To approve the minutes.

Action: Approve, Moved by Member Stitle, Seconded by Member Ross

Vote: Motion carried by unanimous vote (summary: Ayes = 3)

Ayes: Member Stitle, Member Ross, Member Hensley

8. DISCUSSION OF THE BOARD APPROVED BUDGET AND RATES FOR 2017

General Manager Kennedy noted that we are planning on submitting our approved budget to the Government Finance Officers Association (GFOA) for their Distinguished Budget Presentation Award, adding that this is a year ahead of schedule due to an outstanding job by Finance Manager, Vanessa Martinez.

Mr. Kennedy mentioned that we will be monitoring both water sales and local development during the first half of the fiscal year to determine if any changes to the current rate structure will be needed in the near future.

9. MONTHLY FINANCIAL REPORT

Mrs. Martinez presented the monthly financial report. Member Stitle requested footnotes be added to the Balance Sheets and the Water and Sewer Sales Updates. Open discussion continued.

A. Balance Sheet

B. Financial Statement

C. Developer Update

D. Water and Sewer Sales Update

10. REVIEW OF STRATEGIC PLAN GOALS AND OBJECTIVES FOR 2017

Members of the committee reviewed the worksheets on the finance goals and objections. Mr. Kennedy interjected that we will be rolling out a review and examination of quality assessment and control measures at the District and offered to provide the committee with the detailed document of the process. He added that once formally implemented this will be a vital tool in achieving our goals and objectives.

11. DISCUSSION AND POSSIBLE ACTION REGARDING COMMITTEE MEMBERSHIP

No action needed at this time.

12. DISCUSSION REGARDING PARLIAMENTARY PROCEDURES

Mr. Kennedy stated this was presented to the committee as a guideline for conducting public meetings of this nature. Discussion ensued among the committee members.

13. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT SCHEDULED BUDGET AND FINANCE COMMITTEE MEETING

Mrs. Martinez was asked to bring the updated financials for review and also to provide a demonstration of Springbrook, the new financial software. Mr. Kennedy mentioned the Communication Committee's resent discussion regarding customer survey options for collecting input on the upcoming bill format changes associated with the new billing software. The committee member requested that an update on their findings and possible action also be added.

14. ADJOURNMENT

Motion:

Action: Adjourn, Moved by Member Stitle, Seconded by Member Ross.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 3).

Ayes: Member Stitle, Member Ross, Member Hensley.

_____

Harry Stitle, Committee Chairperson

_____

Dawn M. Washburn, Board Secretary

MINUTES OF THE COMMUNICATIONS COMMITTEE MEETING
OF THE RAINBOW MUNICIPAL WATER DISTRICT
JULY 11, 2016

1. CALL TO ORDER – The Communications Committee Meeting of the Rainbow Municipal Water District on July 11, 2016 was called to order by Chairperson Daily at 3:32 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. Chairperson Daily, presiding.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL:

Present: Member Daily, Member O'Leary, Member Brazier, Member Kirby, Alternate Gray.

Absent: Member Kurnik.

Also Present: General Manager Kennedy, Executive Assistant Washburn, Human Resources Manager Harp, Director Stewart.

No members of the public were present.

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

There were no changes to the agenda.

5. PUBLIC COMMENT RELATING TO ITEMS NOT ON THE AGENDA

Mr. Daily welcomed Karleen, RMWD's new Human Resources Manager, to the committee meeting.

COMMITTEE ACTION ITEMS

***6. APPROVAL OF MINUTES**

A. June 6, 2016

Motion:

To approve the minutes as written.

Action: Approve, Moved by Member Kirby, Seconded by Member Brazier.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Member Daily, Member O'Leary, Member Brazier, Member Kirby, Alternate Gray.

7. DISCUSSION REGARDING CUSTOMER SERVICE SATISFACTION SURVEY

Mrs. Gray stated she has looked into whether there was a benefit to conducting a survey when her research shows a 10% return for an investment of thousands of dollars.

Ms. Brazier suggested utilizing space in the newsletter directing those interested to go to the RMWD website and ask a different question each month.

Mr. O'Leary recommended spending the money on the survey. Mr. Kennedy agreed to go this direction; however, we need to be clear about the question RMWD is trying to get answered. Discussion ensued.

Mr. Kennedy suggested putting something in the August newsletter pointing the ratepayers to the website to answer customer satisfaction questions and see how many respond before moving forward with investing in a mail-in survey.

Discussion ensued regarding what specific types of questions should be asked before moving forward in either direction.

Mr. Kennedy offered to contact SDCWA to see if they can break down their previous survey responses by member agency and provide RMWD with those that apply to it.

Mr. Daily recommended a customer service survey be included in the mid-year budget adjustment before spending the money. Mr. O'Leary agreed.

8. DISCUSSION REGARDING COMMITTEE MEMBERSHIP

It was noted Mrs. Gray has been appointed as an alternate on this committee by the Board at their last meeting.

9. DISCUSSION REGARDING PARLIAMENTARY PROCEDURES

Mr. Kennedy recalled copies of the revised procedures were provided to the committee members. He asked if there were any questions at this time. He stated if there were no questions, this may be something to bring back for review at a Committee Meeting in December, 2016.

10. STRATEGIC PLAN QUARTERLY UPDATE

Mrs. Gray recalled the committee was working on the new look for the bills once the financial software transition is complete.

Mrs. Gray noted RMWD did not get the Avocado Festival; however, she has put in for other festivals coming to the area. She stated she would also be meeting with several other community groups to see where RMWD can become more involved. Discussion ensued regarding community groups renting RMWD's Board Room for meeting purposes.

Mrs. Gray reported RMWD was 100% on the enhanced newsletter design, the speaker's bureau was placed on the website, work on updating FAQ's and shutdown notifications for the website continues, the fourth grade and high school presentations have been completed, and how she will be looking into other water wise programs.

Mrs. Gray stated she will start working on preparing waiver forms for public attendees. She also reported on the joint Board of Directors/Budget and Finance Committee meeting.

11. DISCUSSION REGARDING POSSIBLE FILLER ARTICLES FOR MONTHLY NEWSLETTER

Mrs. Gray reported there has not been a lack in information to use in the newsletters lately.

Discussion ensued regarding electronic monitoring.

12. COMMITTEE MEMBER COMMENTS

Mr. O'Leary talked about the CHP website being a resource in the event of emergencies.

Mr. Daily recommended everyone read the book titled "Planet Water: Investing in the World's Most Valuable Resources".

13. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT SCHEDULED COMMUNICATIONS COMMITTEE MEETING

It was suggested there be an item to discuss the potential customer satisfaction survey questions.

14. ADJOURNMENT

Motion:

To adjourn the meeting.

Action: Adjourn, Moved by Member Brazier, Seconded by Member Kirby.

Vote: Motion carried by unanimous roll call vote (summary: Ayes = 5).

Ayes: Member Daily, Member O'Leary, Member Brazier, Member Kirby, Alternate Gray.

The meeting adjourned at 4:55 p.m.

_____

Mike Daily, Committee Chairperson

_____

Dawn M. Washburn, Board Secretary

MINUTES OF THE ENGINEERING COMMITTEE MEETING
OF THE RAINBOW MUNICIPAL WATER DISTRICT
JULY 6, 2016

1. CALL TO ORDER – The Engineering Committee Meeting of the Rainbow Municipal Water District on July 6, 2016 was called to order by Chairperson Prince at 3:00 p.m. in the Board Room of the District, 3707 Old Highway 395, Fallbrook, CA 92028. Chairperson Prince, presiding.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL:

Present: **Member Prince, Member Stitle, Member Taufer, Member Brazier, Member Kirby, Member Ratican, Alternate Marnett**

Absent: **Member Murray, Alternate Robertson.**

Also Present: **General Manager Kennedy, Associate Engineer Powers, Construction and Maintenance Superintendent Maccarrone, Engineering Tech Rubio**

There was one member of the public present: Mr. Metts (Dudek)

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

There were no changes.

5. PUBLIC COMMENT RELATING TO ITEMS NOT ON THE AGENDA

Mr. Marnett mentioned the issue of the hydrant on Ranchos Ladera potentially being damaged by EDCO trucks. Mr. Maccarrone responded that District staff were scheduled to clear the area, move the ballards, and then concrete the area to protect the hydrant.

COMMITTEE ACTION ITEMS

***6. APPROVAL OF MINUTES**

A. June 1, 2016

Motion: Accept the minutes as drafted.

Action: Approve, Moved by Member Brazier, Seconded by Member Stitle.

Vote: Motion carried by unanimous vote (summary: Ayes = 7).

Ayes: Member Prince, Member Stitle, Member Taufer, Member Brazier, Member Kirby, Member Ratican, Alternate Marnett.

7. DISCUSSION AND POSSILE ACTION REGARDING CAPITAL IMPROVEMENT PLAN UPDATE

Mr. Kennedy said the Capital Improvement Plan has been approved by the Board and it now includes Recycled Water Projects. He pointed out some of the costs provided are estimates.

Discussion ensued regarding the following project updates:

- Gird Road to Monserate Hill water line design should be done soon.
- San Luis Rey imported return flow recovery.
- The Automated Meter Infrastructure (AMI); pilot study and SDG&E contract.
- Morro Tank Zone Permanent FPUD Interconnection designed for an 8-10-inch line.
- Recycled Water Projects; working with Oceanside and the Water Reclamation Plant Pre-Design Report.

8. DISCUSSION AND POSSIBLE ACTION REGARDING WATER RECLAMATION PLANT PROJECT UPDATE

Mr. Kennedy provided a copy of the Draft Water Reclamation Plant and Recycled Water Distribution System Pre-Design Report for committee review. Mr. Kennedy said essentially the report says it is cheaper in the short term capital to stay with Oceanside and help pay for the upgrade of the San Luis Rey plant and in turn have them deliver RMWD recycled water; however, the long run operating costs would save RMWD money in the long run. He stressed there was only a 2% differential between the two options which makes it difficult in making a determination as to which would be the best way to go. He reported RMWD would meet with Oceanside later this month to discuss other alternatives.

Discussion ensued regarding some of the pros and cons associated with a reclamation plant. It was noted it would also be important to look at any potential risks.

Mr. Kennedy pointed out Raftelis will need to review the proposed rates of the recycled water.

Mr. Marnett asked about the possibilities with well water. Mr. Kennedy said the District will be looking into imported water return flow project and offered to provide Mr. Marnett with a copy of the last draft report from West Yost. Discussion followed.

Discussion ensued regarding recycled water systems.

Mr. Kennedy confirmed for Ms. Brazier that the old Bonsall Reservoir could be useful.

Mr. Kennedy asked the Engineering Committee members to review the Pre-Design Report and provide comments. He said he would like to take this to the Board by September 2016. He pointed out this study was to determine whether the Master Plan findings of building a Water Reclamation Plant were valid.

Mr. Metts mentioned the big capital cost had to do with having to build a secondary treatment facility. He stated they tried to cover every possible monetary impact of this system.

9. DISCUSSION REGARDING PRELIMINARY ENERGY ASSESSMENT

Mr. Kennedy stated the District was approached by ABM to conduct an energy audit. He explained the consultant would analyze the District's operations, find where there could be savings for which the consultant would pay and the District will in turn pay them back over the life cycle of the savings. He said he wanted to present the preliminary assessment to the committee for their review and comments.

Mr. Stitle disclosed he was the President of this subsidiary ABM approximately 25 years ago.

Mr. Kennedy said the biggest objective of this assessment was to determine if the savings would benefit the District at a low risk. He noted the District would keep the data and then make a decision about moving forward.

10. DISCUSSION REGARDING PARLIAMENTARY PROCEDURES

Mr. Kennedy said the goal was to organize the Engineering Committee meetings with the Robert's rules of order. He said the Chairperson needs to be sure to call the meeting to order, lead the Pledge of Allegiance, and take roll call. He also noted it was helpful for the Chairperson to state the title of any action items, note who makes a motion and seconds the motion, as well as repeat the motion. He mentioned all votes may move to roll call votes for all actions in order to make these clearer for the record as well as for transparency purposes.

It was clarified committee chairpersons are permitted to make motions.

11. LIST OF SUGGESTED AGENDA ITEMS FOR THE NEXT SCHEDULED ENGINEERING COMMITTEE MEETING

It was noted the next Engineering Committee meeting would be on August 3, 2016 and the combined Board of Directors and Engineering Committee meeting would be held on August 23, 2016.

12. ADJOURNMENT

The meeting adjourned at 4:37 p.m.

_____

Timothy Prince, Committee Chairperson

_____

Dawn M. Washburn, Board Secretary

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD INFORMATION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

PRESENTATION REGARDING THE WATER RECLAMATION PLANT AND RECYCLED WATER DISTRIBUTION SYSTEM

BACKGROUND

In January 2016, the District entered a Professional Services Agreement with the consultant Dudek to prepare a pre-design report to further evaluate the feasibility of and define the costs associated with a District-owned water reclamation plant and recycled water distribution system.

In 2014, the District conducted an analysis of a District-owned water reclamation plant and recycled water distribution system as part of its water and wastewater master plan update. A technical memorandum was prepared titled the Wastewater Treatment & Reclamation Alternatives Study (Alternatives Study). The incentive for the study was to evaluate the feasibility of eliminating the District's long-term reliance on the City of Oceanside (City) for wastewater treatment, while also creating a beneficial new local water supply. The Alternatives Study found two alternatives feasible for further evaluation including, the construction of a District-owned water reclamation facility and a No-Project alternative.

The Water Reclamation Plant and Recycled Water Distribution System Pre-Design Report prepared by Dudek further refined the water recycling treatment and distribution system alternatives and associated costs to provide the Board sufficient detailed information to fully evaluate the project feasibility and direct District staff relative to moving the project forward.

DESCRIPTION

Through discussions with the City and further analysis of the alternatives, the options were reduced to two recycled water treatment and supply alternatives. The District may completely withdraw from the City system by construction of its own facilities (Alternative 1), or continue to partner with the City in a regionally-integrated wastewater and recycled water system (Alternative 2).

Alternative 1

Alternative 1 includes the construction and operation of a water reclamation plant and a recycled water distribution system within the District as well as some collection system upgrades upstream of Lift Station 2. Under this alternative, the District would no longer require the use of San Luis Rey Water Reclamation Facility (SLRWRF) disposal capacity and would therefore negotiate with the City for the recovery of past investments. Also, no upgrades to the District's wastewater conveyance system from Lift Station 2 to the Stallion Metering Station are required.

Alternative 1 has a greater associated capital cost of approximately $62,084,000 stemming from the initial investment of constructing a water reclamation plant. However, it has a lesser associated annual

cost which has a present worth over a 30-year time frame of approximately $62,084,000. Thus analyzed over a 30-year time frame the total present worth cost would be approximately $124,631,000.

Alternative 2

Alternative 2 includes the construction of a recycled water distribution system within the District as well as adding capacity to the proposed recycled water pipeline to the District from the SLRWRF within the City of Oceanside. In addition, the alternative includes collection system upgrades upstream of Lift Station 2, eventual purchase of additional capacity at SLRWRF to meet ultimate demand, contributions to construct tertiary treatment at SLRWRF, and upgrades to increase the capacity of the outfall from Lift Station 2 to Stallion Meter Station. The analysis includes two options for increasing the capacity of the outfall from Lift Station 2 to Stallion Meter Station: upsizing the outfall piping or constructing an equalization basin to facilitate a more consistent increased flow.

Alternative 2 has the lesser capital cost of approximately $50,813,000. However, it has a greater associated annual cost which has a present worth over a 30-year time frame of approximately $90,220,000. Thus analyzed over a 30-year time frame the total present worth cost would be approximately $141,033,000.

Recycled Water Market Assessment

Both alternatives include recycled water distribution facilities within the District. The District must therefore identify and assess available recycled water customers within its existing service area as part of the analysis. As a part of the 2015 Sewer and Water System Master Plan Update, the district completed a preliminary recycled water market assessment, identifying a significant number of potential recycled water users. The Alternatives Study further assessed the available recycled water customers and identified a conceptual recycled water distribution system.

The Water Reclamation Plant and Recycled Water Distribution System Pre-Design Report reexamined the candidate recycled water users and distribution facilities. The analysis includes existing agricultural and irrigation customers as well as proposed new development demand. The projected recycled water demand for the District is approximately 1.65 mgd (1,842 afy). There is a significant risk associated with the stability of the projected recycled water demand over the 30-year time frame of the analysis. The projected recycled water demand is solely associated with irrigation uses, including parks, green belts, open space, nurseries and eighty percent of the demand is associated with twenty-four avocado growers.

The risk of a large scale recycled water system that is designed to serve commercial agricultural customers is significant. The capital cost of the recycled water distribution system is a major component of both alternatives and cost recovery depends entirely on the agricultural customers continuing to use water at the present levels for the 30-year time frame required to recover the cost of the system. The market analysis done in this study, as well as discussions with the Executive Director of the Farm Bureau leave numerous questions about the reliability of demand. Working with the City, staff plans to gather additional information from potential users as to their projections for future water use. At this time, staff is unable to say that the demands that are in place now will be in place for the duration of the cost recovery period.

Indirect Potable Reuse Feasibility Study

Indirect potable reuse (IPR) is another potential option for the District to pursue in order to incorporate reclaimed water into the District's supply. The City is working an IPR alternatives study at this time. IPR involves blending advanced treated reclaimed water into an existing water source such as a groundwater basin to be treated further for potable use. IPR would allow the District to incorporate reclaimed water without the expense and associated risk of the recycled water distribution system. Reclaimed water injection into the San Luis Rey Groundwater Basin could be developed in conjunction with the imported

water return flow recapture and treatment project. This option would require a feasibility study to fully analyze the costs and risks associated with the IPR approach for the District. The City has indicated a willingness to allow the District to partner with them on their study but further discussions are required to define the parameters of our participation.

Conclusion

While the PDR has shown that the construction of a water reclamation facility is feasible, and the costs are roughly equivalent to those associated with obtaining recycled water from the City, there are lingering concerns about the recovery of the construction costs of the recycled water distribution system. Further market analysis is needed to understand projected future demands and to determine the impact of shifting demands in the future.

Further, with regulatory systems moving in favor of IPR, the lack of investment needed to construct a separate distribution system provides a strong incentive to evaluate this alternative carefully prior to making a final decision. Staff is not recommending a particular course of action at this time so that we can fully evaluate all options.

Michael Powers
Engineering Manager

August 23, 2016

DRAFT

Water Reclamation Plant & Recycled Water Distribution System Pre-Design Report

Prepared for:

Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, California 92028
Contact: Sherry Kirkpatrick

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: D. Michael Metts, PE

JULY 2016

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APPENDICES

1 PROJECT OVERVIEW

The primary objectives of the Rainbow Municipal Water District (District) Water Reclamation Plant & Recycled Water Distribution System Pre-Design Report Project (Project) are to further evaluate the feasibility of and define the costs associated with two available recycled water delivery options, including a new recycled water distribution system supplied by either a District-owned water reclamation plant or an interconnection with the future City of Oceanside recycled water distribution system.

1.1 BACKGROUND

In 2014, the District conducted an analysis of a District-owned water reclamation plant and recycled water distribution system as part of its ongoing water and wastewater master plan update. A technical memorandum was prepared titled the Wastewater Treatment & Reclamation Alternatives Study (Alternatives Study). The incentive for this additional study was to evaluate the feasibility of eliminating the District's long-term reliance on the City of Oceanside for wastewater treatment, while also creating a beneficial new local water supply. The Alternatives Study included a No-Project alternative, where the District continued to discharge wastewater to the City of Oceanside (Oceanside, City) sewer system, as well as several District-owned water reclamation alternatives.

Under the No-Project scenario, acquisition of additional treatment capacity from the City is required. Also, the District would continue to partner with the City in future sewer treatment and distribution system projects, including potential San Luis Rey WRF, Oceanside Land Outfall and Oceanside Ocean Outfall improvements. Under the No-Project alternative, no local water supply resource would be developed.

Other options evaluated in the Alternatives Study included construction of various District-owned water reclamation facilities. Based on the preliminary analysis, it was determined that construction of a District-owned treatment facility has a higher initial capital cost than the No-Project alternative. However, specific alternatives were considered feasible for further evaluation based on the potential to provide additional revenue to the District through recycled water sales. The feasibility of a District-owned facility alternative, in the previous analyses, relied heavily on potential District recovery of past investments in Oceanside conveyance and treatment facilities.

The District's recent master plan updates identify declining water demand and wastewater generation, increasing wholesale water rates and wastewater disposal costs, and the potential for significant residential and commercial development along the Interstate 15 corridor, at State Route 76. These factors contribute to the potential benefit of developing a local water supply through water recycling. The goal of this Project is to further refine specific water recycling treatment and distribution system alternatives and refine previously defined project costs, thereby providing the District Board of Directors sufficient detailed information to fully evaluate project feasibility and direct District staff relative to moving the project forward.

1.2 RECYCLED WATER LEGISLATION

Recent legislation involving water recycling in the State of California includes the proposed California State Senate Bill 163 (SB-163). This bill has been before the State Legislature previously and was recently resubmitted, although it was recently withdrawn. SB-163, proposed by Senator Hertzberg, was last amended in the State Assembly in June 2016, and would require each wastewater treatment facility with an ocean outfall to achieve 50 percent reuse of the facility's actual annual flow for beneficial purposes by 2026 and 100 percent by 2036. It is projected that the bill will continue to be a topic of discussion at the State level.

Water and wastewater agencies across the State of California have opined on SB-163, both heralding the potential advancement of recycled water initiatives and criticizing the bill for overreach in the process. The California Association of Sanitation Agencies (CASA) is a statewide association representing more than 115 municipalities, special districts, and joint powers agencies that provide wastewater collection, treatment, and water recycling services to millions of Californians, including the majority of ocean dischargers who are directly impacted by the bill. Many outfalls accommodate discharge from multiple agencies, including some located inland of the coast. Each discharger has differing circumstances and has varying ability to eliminate ocean discharge. Commentary on SB-163 is summarized as follows:

- The proposed mandate is premature given current and ongoing regulatory efforts that have not yet been completed.
- Recycled water production is expected to increase significantly over the next decade without the mandate, with California poised to increase recycled water use by 1,000,000 acre-feet per year by 2020 and 2,000,000 acre-feet per year by 2030.
- In many areas, regional demand does not exist to beneficially reuse 100 percent of an agency's ocean discharge, unless direct potable reuse becomes feasible in the future.
- Agencies that produce recycled water are not always authorized water purveyors, and the relationship between water and wastewater entities varies widely in different regions.

Of impact to the District is the fact that the cost of implementing SB-163 is projected to be great. The District is currently bound by agreement with the City of Oceanside for treatment and disposal of its wastewater, through which treated effluent is discharged to the Pacific Ocean by the Oceanside Ocean Outfall. The City is currently planning and designing its own recycled water distribution system, but continues to rely on ocean discharging for ultimate disposal. SB-163 would most certainly require the City to add additional treatment infrastructure at relatively large cost, of which the District is contractually bound to contribute to at a current rate of 11.1 percent. Notwithstanding SB-163, the District remains liable for its portion of improvements to the Oceanside treatment facility, including the land and ocean outfall system.

The most affordable and feasible water recycling projects have already been done or are in the process of being implemented in most areas. Despite recent increases in grant and low interest

loan funding through Proposition 1 and the State Revolving Fund (SRF) Loan program, the current level of assistance is insufficient to sustain the requirements of SB-163. The increased cost of required facilities is ultimately borne by ratepayers.

Without question, if passed, SB-163 would have a significant impact on the District's wastewater treatment and disposal cost. Implementation of a District-owned recycled water treatment and distribution system may represent a means of controlling long-term wastewater infrastructure costs, notwithstanding that such a recycled water system may also increase cost to District ratepayers. The District has commissioned evaluation of its recycled water options to define the most feasible means of providing the long-term reliability to its ratepayers, while maintaining the lowest overall cost. A recycled water program is intended to facilitate long-term cost control, development of a renewable local water resource, control of currently undefinable, yet potentially large, future expenditures, and position the District to take advantage of future recycled water grant and low interest loan funding opportunities.

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2 OVERALL PROJECT ALTERNATIVES

During completion of its master plan updates, the District evaluated multiple recycled water treatment alternatives. In particular, the previous analysis identified multiple treatment sites, including a treatment plant in the vicinity of the District offices, as well as sites in the vicinity of Lift Stations 1 and 2. From those analyses, the treatment plant alternatives were narrowed to include only the District office and Lift Station 2 sites.

Through further analysis, the treatment sites were narrowed to include only the Lift Station 2 site option. The primary reasoning for eliminating the District office site is the Office site limitation relative to tributary wastewater flow. The District office site has an ultimate tributary wastewater flow of approximately 0.90 mgd, while the Lift Station 2 site has an ultimate tributary flow of approximately 1.65 mgd. Construction of a treatment facility in the vicinity of the District offices requires that the District continue to maintain treatment capacity at the City of Oceanside's San Luis Rey Water Reclamation Facility (SLRWRF), while also constructing and operating its own treatment facility. Furthermore, construction in the vicinity of the District office site does not provide the maximum benefit from a local recycled water source. Limited recycled water production and continued involvement in downstream treatment, solids handling and disposal improvements result in elimination of the Office site from realistic consideration.

The District conducted several meetings with the City of Oceanside to discuss available wastewater treatment and recycled water distribution alternatives. The City introduced and supports a continued partnership with the District relative to wastewater treatment, as well as recycled water production and conveyance. The City has proposed that the District connect to its proposed recycled water system, thereby contributing to the construction cost of those facilities and foregoing construction of its own facility. This option continues the conveyance of wastewater to the City and continues District obligations with respect to downstream treatment, solids handling and disposal facilities in accordance with the current wastewater agreement between the two agencies. The addition of this option to the analysis further counters the feasibility of a new treatment facility in the vicinity of the District office site.

Based on discussions with City and District staff, it became clear that District options can be reduced to one of two recycled water treatment and supply alternatives. The District may completely withdraw from the City system by construction of its own facilities, or continue to partner with the City in a regionally-integrated wastewater and recycled water system.

2.1 ALTERNATIVE NO. 1 (DISTRICT WRF OPTION)

Alternative No. 1 includes construction of a new water recycling facility (WRF), owned and operated by the District (illustrated on **Figure 2-1**). The District WRF is proposed to be located within the vicinity of Lift Station 2, providing for treatment of wastewater generated in the District sewer service area. It is noted that approximately 0.02 million gallons per day (mgd) of wastewater is generated downstream of the Lift Station 2 site. These flows would either be conveyed to the District WRF site for treatment, transferred to the City for

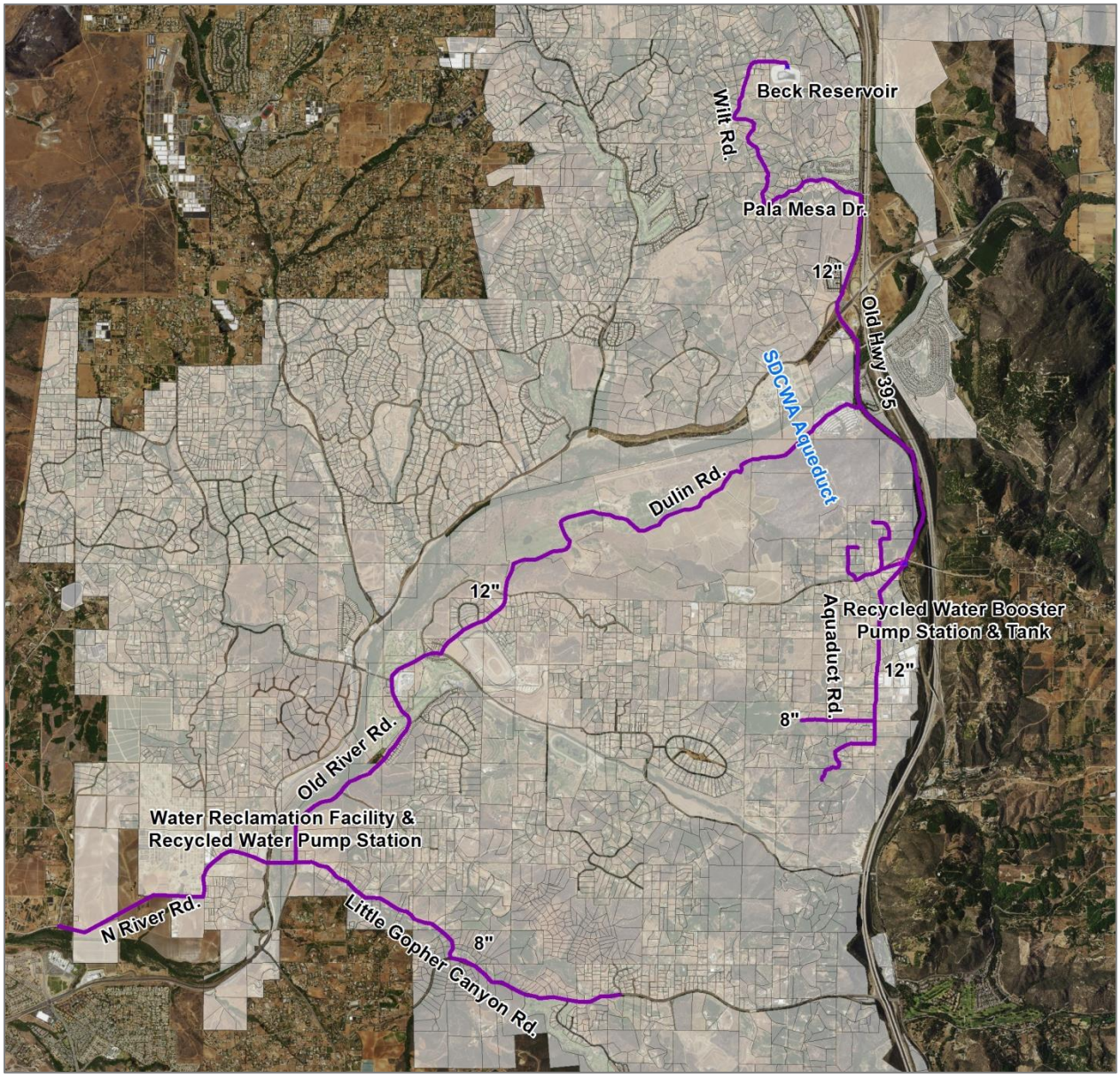
wastewater service, or continued to be sent to Oceanside as District flows through a revised agreement between the City and the District.

Title 22 effluent will be required for production and conveyance to recycled water users within the proposed recycled water distribution network. Under Alternative No. 1, no upgrades to the District's wastewater conveyance system from Lift Station 2 to the Stallion Metering Station are required. The wastewater conveyance system from Lift Station 2 to the Stallion Metering Station may be abandoned in place, depending on how the 0.02 mgd flows described above are accommodated, or the existing facilities may be repurposed for beneficial use.

Wastewater conveyance improvements upstream of a District-owned WRF in the vicinity of Lift Station 2, including upgrades to Lift Station 1, are required under both Alternative No. 1 and 2, and as such do not impact the comparative cost analysis between the alternatives. The costs associated with these improvements are not included in the overall cost analysis of each alternative. Many of the required wastewater collection improvements were implemented as part of the recent SR-76 freeway implementation project.

The District has, over many years, invested in treatment, solids and disposal capacity at the SLRWRF. Under Alternative No. 1, the District would no longer require the use of those facilities. It would be beneficial to negotiate with the City for recovery of those invested costs. The City has expressed a desire for the District to continue to partner in the SLRWRF system, and receive recycled water supply through the City's system (Alternative No. 2). As such, it is unclear whether the City is willing or obligated to reimburse the District for past investments. The current wastewater agreement between the two agencies is silent on the subject of cost recovery, but does allow for each agency to pursue recycled water projects independently. SLRWRF facilities have value, and therefore may be of value to the City. For the purposes of this analysis, costs have been computed with and without SLRWRF cost recovery. In general, Alternative No. 1 becomes more cost effective with increasing cost recovery of the District's SLRWRF investment.

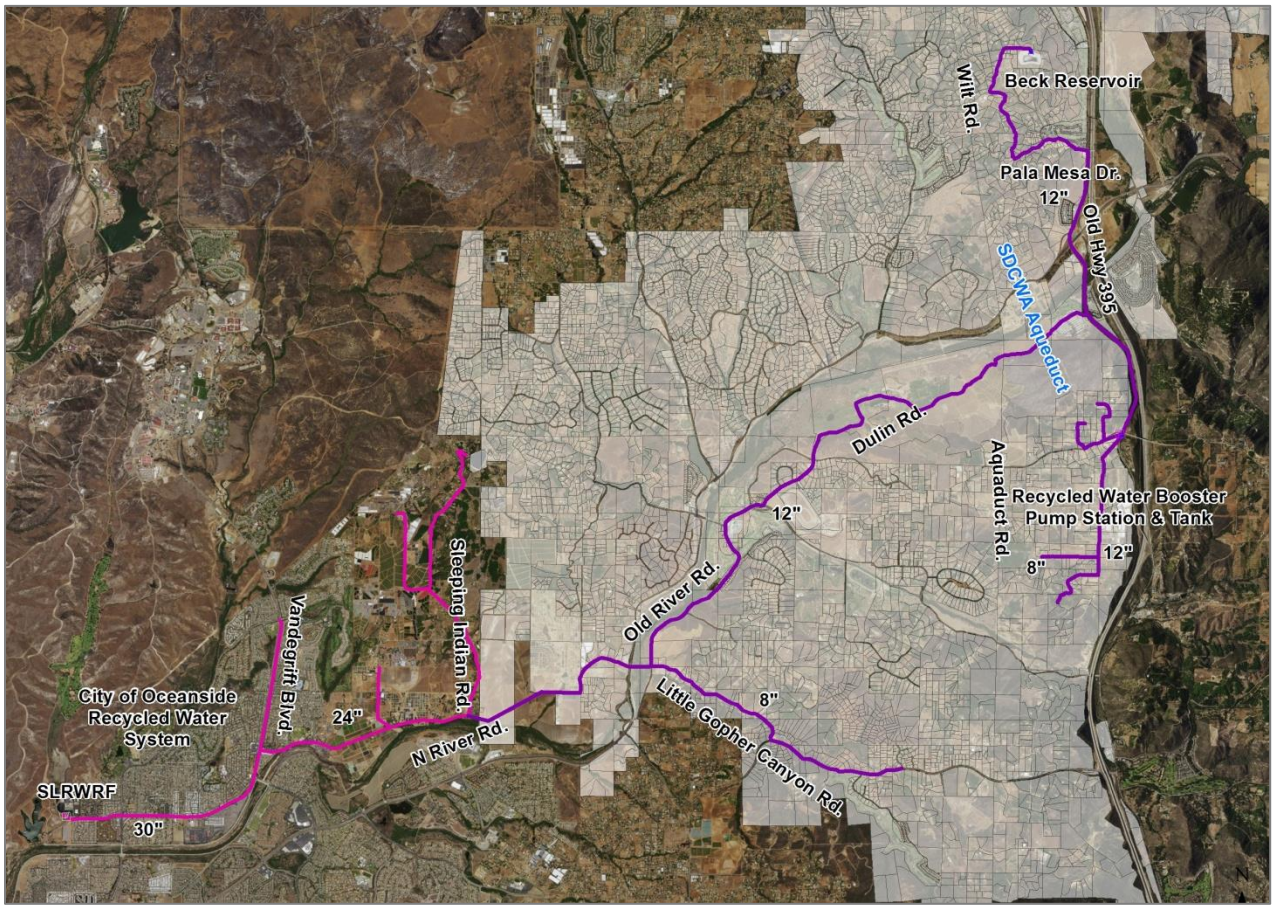
Figure 2-1: Alternative No. 1 Proposed Recycled Water System



2.2 ALTERNATIVE NO. 2 (OCEANSIDE WRF OPTION)

Alternative No. 2, illustrated on **Figure 2-2**, is predicated on the District receiving recycled water supply from the City of Oceanside. After updating its current agreement with the City (**Appendix C**), the District would, under this alternative, continue to convey its wastewater to the SLRWRF, where the wastewater will be recycled to Title 22 standards, and conveyed to the District through the City's future recycled water distribution system.

Figure 2-2: Alternative No. 2 Proposed Recycled Water System



As identified in the City's 2015 Integrated Master Plan Recycled Water Master Plan, the City evaluated alternative recycled water projects for implementation within the City's service area. The recommended alternative included an Upper and Lower SLRWRF System. The City's plans for the Upper SLRWRF System include production of tertiary effluent at the SLRWRF and a 20-inch conveyance pipeline along North River Road, serving recycled water customers in the northeastern portion of the City. The upper system is proposed to serve approximately 62 recycled water customers with an approximate annual average demand of 1,110 acre-feet per year (afy).

Alternative No. 2 increases flow in the recycled water infrastructure proposed in the City's Recycled Water Master Plan, requiring increased capacity to convey recycled water to the

District boundary. Additional pumping capacity (horsepower) is required to convey recycled water through the proposed upper recycled water distribution to the District boundary. Additionally, it will be necessary to increase the North River Road pipeline diameter to convey the combined City and District recycled water volume. Increased pipeline diameters for this alternative are discussed further in Section 5.2.2. From the District boundary (located along North River Road at Sleeping Indian Road), the District-owned recycled water distribution system conveys recycled water throughout the District service area. Title 22 recycled water is required to be produced and conveyed to users through the same proposed recycled water distribution network as discussed under Alternative No. 1, with the exception of conveying recycled water through the identified City facilities.

Continuing to convey wastewater to the SLRWRF for treatment and disposal, the District wastewater conveyance system from Lift Station 2 to the Stallion Metering Station will require improvement. The existing pipelines do not have sufficient capacity to convey the projected flow identified in the recent Wastewater Master Plan Update. Two options address the needed infrastructure improvements, including replacement and upsizing of the existing pipelines between Lift Station 2 and the Stallion Metering Station or constructing flow equalization facilities at Lift Station 2 to manage deliveries through the existing infrastructure to the SLRWRF. Under the flow equalization option, specific reaches of the existing 15-inch pipeline in North River Road continue to require point repairs and potential replacement to assure a long-term, reliable wastewater conveyance system.

The projected ultimate wastewater flow from the District is 1.65 million gallons per day (mgd), as compared to the current flow of approximately 0.70 mgd. The District owns treatment capacity of 1.5 mgd (11.1 percent), out of the total 13.5 mgd capacity at the SLRWRF. Therefore, additional treatment and disposal capacity at the SLRWRF of 0.12 mgd is required, over and above the increased wastewater conveyance pipeline capacity. Under the flow equalization option, equalized flow does not exceed current District conveyance system capacity. However, additional capacity in SLRWRF would continue to be required.

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3 RECYCLED WATER MARKET ASSESSMENT

Inherent to the decision of providing recycled water to its customers, the District must identify and assess available recycled water customers within its existing service area. As part of its recent 2015 Sewer and Water System Master Plan Update, the District completed a preliminary recycled water market assessment, identifying a significant number of potential recycled water users within the service area. In addition, the District completed its 2015 Alternatives Study to further assess available recycled water customers. Under the previous studies, the District identified a conceptual recycled water distribution system, including distribution pipeline, pump stations and storage facilities, to convey recycled water from its source to the identified customers.

Advancing the information in the District master plan updates and alternative study, candidate recycled water users and distribution facilities were reexamined. As such, the recycled water market assessment and conceptual system configuration were revised from the previous studies, incorporating new proposed recycled water supply alternatives, including a new recycled water facility or potential connection to the City of Oceanside recycled water system in the vicinity of Lift Station 2. It is noted that both recycled water supply alternatives, Alternatives No. 1 and 2 respectively, include identical recycled water distribution facilities within the District service area boundary, and, as such, the recycled water market assessment and resulting facilities apply equally to both supply alternatives.

Section 4 of this report addresses the water quality considerations relative to regulatory and user-specific requirements. Section 3 derives the number, demand and location of available recycled water customers meeting District-defined market criteria. Section 4 further considers the viability of the identified users based on their individual water quality requirements.

3.1 MARKET ASSESSMENT

Previous recycled water market assessment data was reassessed and updated to include potential users along new alignment corridors, based on service alternatives not previously considered by the District. For the purposes of this analysis, potential recycled water customers were defined to include existing agricultural and irrigation customers (within five specific individual user types), as well as known new developments within the District service area. The total available recycled water demand is defined to accommodate recycled water production from the District's entire wastewater flow tributary to either a District-owned treatment facility or the SLRWRF.

3.1.1 Existing Agricultural and Irrigation Customers

Existing agricultural and irrigation customers are currently supplied potable water. Potential conversion of these users to recycled water considers land use type, minimum and average annual demand, and proximity to the proposed recycled water distribution system alignments. Conversion of identified users to recycled water use assumes that the District promulgates a Mandatory Use Ordinance, thereby requiring current irrigation customers to convert to recycled water use, where available.

The District has focused on providing recycled water to only non-residential land uses. As such, evaluation criteria imposed for candidate recycled water customer identification is defined to include the following existing potable water use information:

- Non-Residential Land Use Types
- Minimum FY2011-13 Average Annual Demand (AAD) of 0.01 mgd (approx. 11 afy)
- Location within 500 feet of proposed recycled water pipeline alignments
- Location within 1,000 feet of proposed recycled water pipeline alignments

Dudek geospatially evaluated, using ArcMap Geographic Information System (GIS) software, District potable water meter records between the years 2011 and 2013. Potable water meter information was organized with respect to evaluation criteria, identifying candidate recycled water users. The results of the geospatial analysis identified approximately 54 existing recycled water use accounts, totaling approximately 1,300 afy (1.16 mgd) of average annual recycled water demand (**Table 3-1**).

Table 3-1: Potential Existing Customer Recycled Water Conversions

Distance	Total Recycled Water Customers[1]	Potential RW AAD (mgd)	Potential RW AAD (afy)
Users within 500 feet of RW pipeline alignments	28	0.60	675
Users within 1,000 feet of RW pipeline alignments	54	1.16	1,300

[1] *Number of customers are identified as a cumulative total.*

Recycled water demand derived from existing customer conversions to recycled water is estimated to be approximately 0.60 mgd (675 afy) for users located within 500 feet of the proposed recycled water distribution system alignments. Combining these recycled water demands with known new developments within the District service area (Section 3.1.2); the total recycled water demand is projected to exceed the annual average wastewater production of the District at buildout (1.65 mgd). Therefore, for purposes of this analysis, existing potable water customers meeting the recycled water demand criteria, and located within 500 feet of the new recycled water distribution system, are assumed to contribute to the total serviced recycled water demand.

Recycled water demand projection is inherently based on the assumption that existing potable water customers remain in business until the recycled water system is implemented. This assumption, while generally realistic, results in potential risk to the District relative to maintaining sufficient demand for implementation of its recycled water system. It is prudent, therefore, to make certain that recycled water demand, meeting the identified water demand and customer type, exists in the event that one or more projected users do not exist at the time of implementation. For this reason, Dudek included identification of potential recycled water customers up to 1,000 feet from the distribution system alignments. This analysis results in an additional 26 potential recycled water customers, increasing the total recycled water demand to 1.16 mgd (1,300 afy), an additional 0.56 mgd greater than the demand needed to fully dispose of the District's ultimate wastewater production, assuming new development demand is realized. As such, sufficient recycled water demand exists in close proximity of

recycled water distribution alignments to assure the District of an adequate customer base for disposal of its projected wastewater production through recycled water deliveries. Significant recycled water demand is also available beyond the identified 1,000-foot evaluation criteria, further minimizing risk related to recycled water system implementation. Section 4 further evaluates this concept with respect to water quality requirements.

Potential recycled water customers within 500 feet of the distribution system alignments are illustrated graphically on **Figure 3-1**. A summary of the total recycled water demand, along with customer demographic data, is provided in **Appendix D**. For completeness, recycled water customers located within 1,000 feet of the future pipeline alignments are included in **Appendix D.** However, only the recycled water demand within the 500-foot zone are included in the distribution system analysis, discussed in later section of this report, representing the necessary demand to dispose of the District wastewater generation through recycled water deliveries.

As illustrated on Figure 3-1, the proposed recycled water pipeline alignments are located along the major travel corridors within the District. Significant additional opportunity exists along these corridors to provide recycled water to smaller customers. This fact mitigates risk for the District relative to potential loss of recycled water customer in the future. These smaller users are useful in maximizing recycled water product and delivery.

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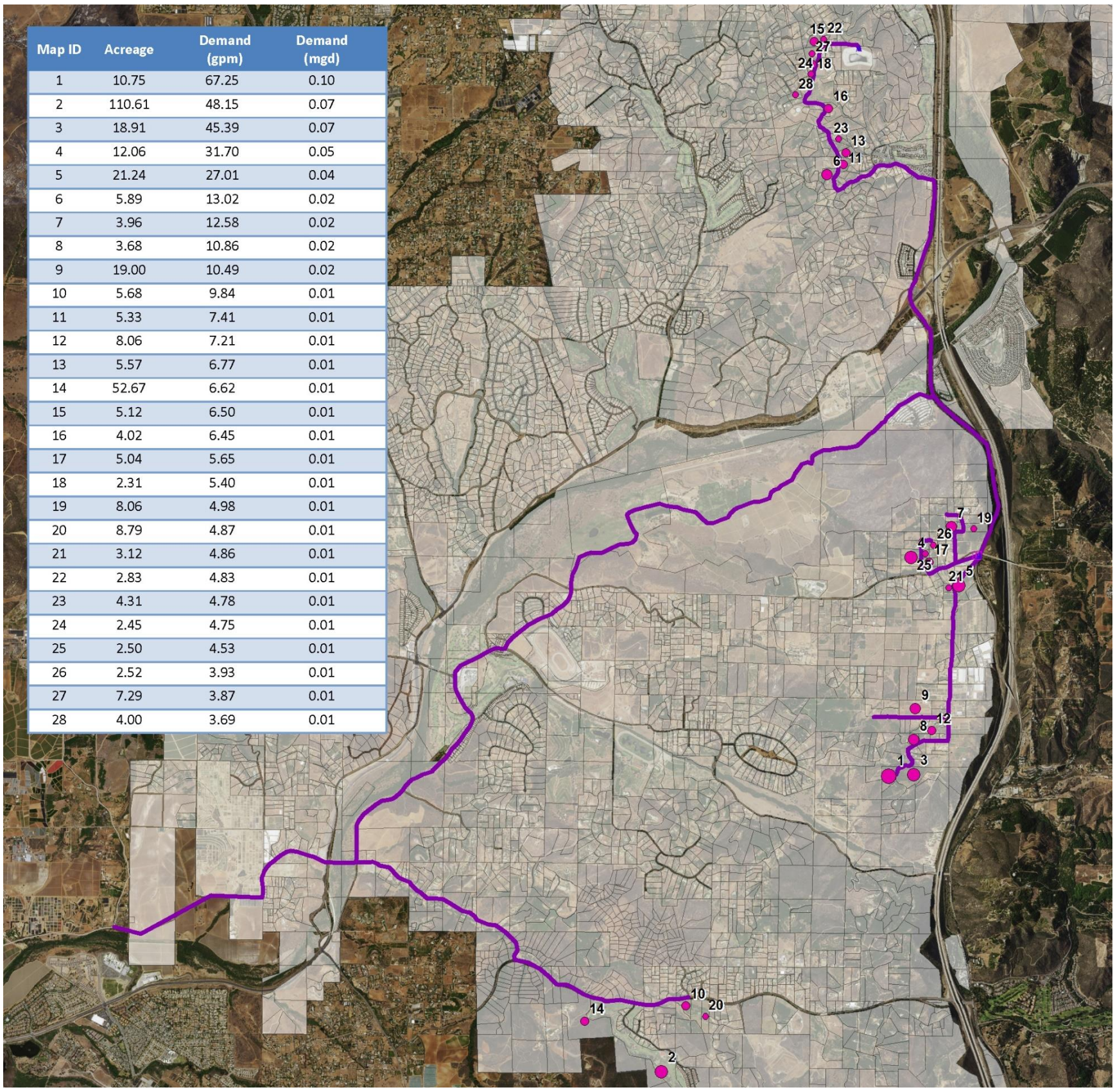
Figure 3-1: Existing Potable Water Customers Included in Recycled Water Market Assessment

Map ID	Acreage	Demand (gpm)	Demand (mgd)
1	10.75	67.25	0.10
2	110.61	48.15	0.07
3	18.91	45.39	0.07
4	12.06	31.70	0.05
5	21.24	27.01	0.04
6	5.89	13.02	0.02
7	3.96	12.58	0.02
8	3.68	10.86	0.02
9	19.00	10.49	0.02
10	5.68	9.84	0.01
11	5.33	7.41	0.01
12	8.06	7.21	0.01
13	5.57	6.77	0.01
14	52.67	6.62	0.01
15	5.12	6.50	0.01
16	4.02	6.45	0.01
17	5.04	5.65	0.01
18	2.31	5.40	0.01
19	8.06	4.98	0.01
20	8.79	4.87	0.01
21	3.12	4.86	0.01
22	2.83	4.83	0.01
23	4.31	4.78	0.01
24	2.45	4.75	0.01
25	2.50	4.53	0.01
26	2.52	3.93	0.01
27	7.29	3.87	0.01
28	4.00	3.69	0.01



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3.1.2 Proposed New Development Demand

Previous discussions focus on existing potable water customers for conversion to recycled water use. These demands represent only one component of the District's future recycled water opportunities. The District, as the local water purveyor, reviews and approves water deliveries to new development activity that occurs within its service boundary. In recent years, development pressure has increased, largely along the Interstate 15 and State Route 76 corridors. The majority of new development is identified to include large-scale construction of single- and multi-family residences, as well as supporting commercial development. While the individual development schedules vary, the majority of known developments are projected to complete construction through the year 2030. Many of the known developments are candidate recycled water customers, specifically with respect to irrigation of mandated parks, greenbelts, medians, manufactured slopes, gold courses, and open space areas.

Through review of development plans and discussion with District staff, proposed new developments with high probability of construction are identified as future recycled water customers. Developments located within 1,000 feet of the pipeline alignments are included, with recycled water demand based on projected irrigation demand for each development. Future developments projected to use recycled water are illustrated on **Figure 3-2**.

Development planning studies, tentative maps and other reports were used to identify projected recycled water demand. From these documents, an average irrigation area (approximately five percent) and average annual water application rate (2.0 af per acre per year) were derived. When development reports were not available, projected recycled water demand was calculated based on the average irrigated area (5%) of the total development acreage and the average annual application rate (2.0 af per acre per year). The resulting recycled water demand for identified new developments is summarized in **Table 3-2**, yielding a total annual average demand (AAD) of approximately 726 gpm (1.05 mgd) or 1,170 afy.

As shown in Table 3-2, the proposed Meadowood development is not considered as a candidate recycled water customer, as that development has not yet requested service from the District. This development may or may not revise its position in the future. The demand for the Meadowood development is approximately 390 afy, and therefore represents a considerable recycled water demand, and should be pursued if possible. Other known developments within the District service area may, in the future, become tributary to a District-owned treatment facility, and may be required to construct the necessary treatment and distribution facilities to accommodate their recycled water demand.

The Palomar College development is in the early stages of planning. As such, it is identified as a potential recycled water customer, but is not included the recycled water demand at this time. The demand is quantified based on average demand information, and will be incorporated in the future, if and when the development is more defined.

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Figure 3-2: Proposed Future Developments Included in Recycled Water Market Assessment

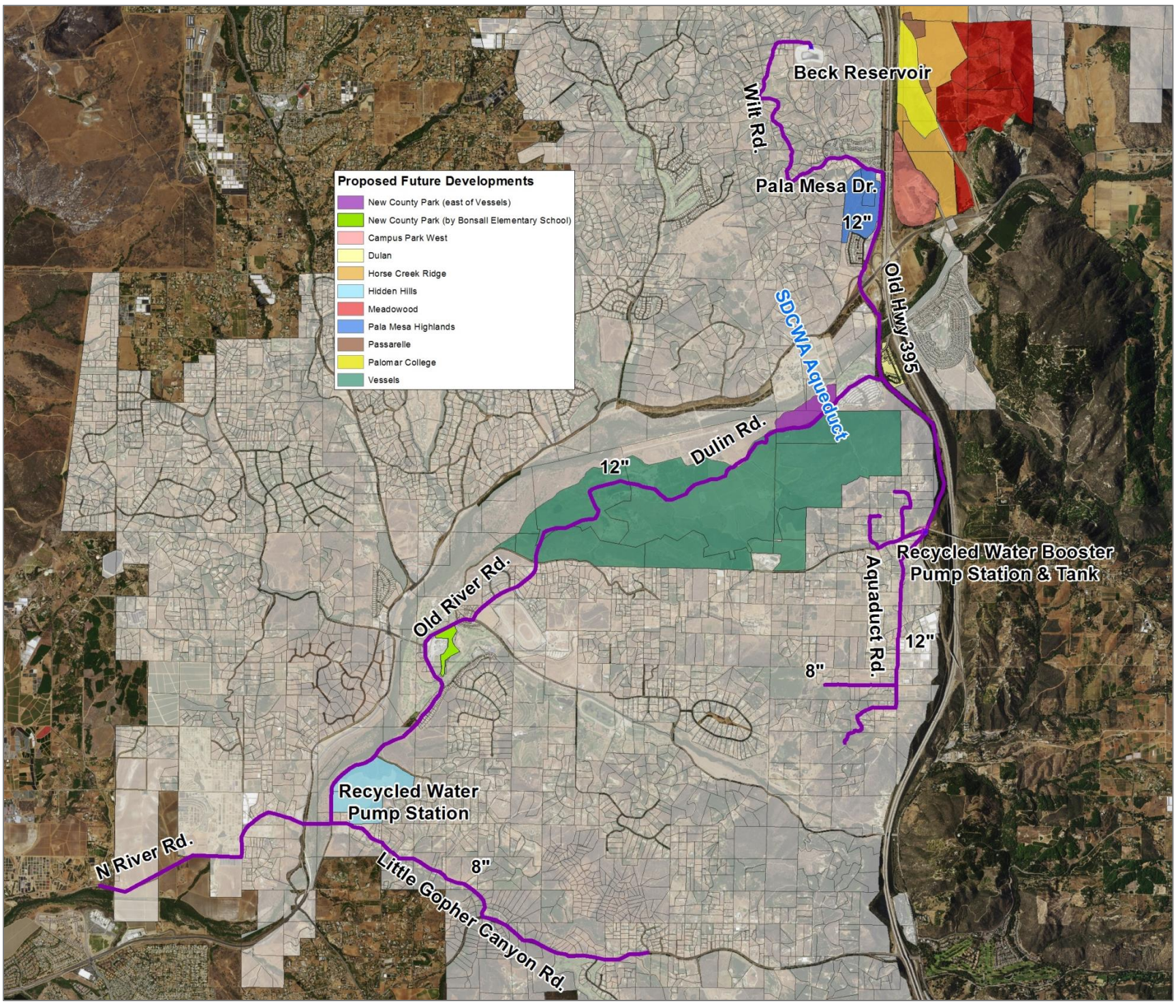

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Table 3-2: Proposed Development Recycled Water Demands

Development	RW AAD (gpm)	RW AAD (afy)	Development	RW AAD (gpm)	RW AAD (afy)
Campus Park West	25[a]	40	Horse Creek Ridge	538[a]	868
Meadowood	*243[a,c]*	*390*	Pala Mesa Highlands	5	8
Vessels	43[b]	69	Dulan	41	66
Passarelle	1	2	New County Park (east of Vessels)	50	80
Hidden Hills	8	13	New County Park (by Bonsall Elementary School)	15	24
Palomar College	*6[c]*	*10*			
			Total Demand Included in Analysis	**726**	**1,170**

a. Demand based on Developer Study
b. Demand based on additional information provided by Developer
c. Demand not included in overall analysis due to uncertainty

3.1.3 TOTAL PROJECTED RECYCLED WATER DEMAND

Based on the discussions above, the projected recycled water demand for the District is approximately 1.65 mgd (1,842 afy), including both converted potable water customers (0.60 mgd) and proposed new developments (1.05 mgd). Section 4 addresses the water quality requirements of the identified recycled water market. Section 5 defines the necessary treatment, distribution and storage facilities to meet the identified demand. A comprehensive summary of candidate recycled water users and associated demand, along with customer demographic data, is provided in **Appendix D**.

The projected recycled water demand is solely associated with irrigation uses, including parks, green belts, open space, nurseries and agriculture users. Commercial uses, including cooling towers, laundries, and other such uses, have been excluded from consideration. In fact, the rural residential nature of the District service area does not support significant commercial users of these types, at this time.

Facility requirements to accommodate the identified recycled water demand are common to both Alternative No. 1 (District-owned treatment facility) and Alternative No. 2 (City-supplied recycled water).

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4 RECYCLED WATER QUALITY ASSESSMENT

Recycled water quality is defined by regulatory and user-specific requirements. Total dissolved solids (TDS) and chloride concentrations are typically the primary constituents of concern to irrigation customers. As such, TDS/chloride reduction will be required to serve some District customers. TDS/chloride reduction increases cost, and those costs are proportionate to the overall reduction achieved. Therefore, water quality consideration will impact the recycled water market assessment by eliminating users with excessively low water quality requirements. It is noted that both Alternative No. 1 and 2 require similar consideration of water quality, and, as such, water quality will not be a differentiating factor with regards to alternative selection.

Planning of the District recycled water system focuses on the available irrigation types within the District service area. As a rural community, recycled water markets are confined to agricultural and landscape irrigation, as opposed to commercial and industrial applications. Within the available irrigation user types, a wide range of demand exist, including avocado and citrus growers, ornamental tree and nursery establishments, and more standard landscape irrigations uses. Water demand is evaluated to assure that sufficient recycled water demand is available to the District for long-term operation of its proposed recycled water system.

Discussions in this section evaluate the projected recycled water market within the District service area, summarizing the regulatory, typical irrigation, and water quality considerations relative to the proposed recycled water treatment and distribution system. The resulting cost of TDS/chloride reduction is evaluated in Section 6, as necessary to support the requirements of the market assessment.

4.1 REGULATORY CONSIDERATIONS

Recycled water quality is critical to final acceptability by consumers. As such, recycled water quality criteria are considered with respect to specific user type requirements, as well at federal, state and local regulatory requirements. Typical landscape irrigation has a significantly higher tolerance to total dissolved solids (TDS) and chlorides, while exotic plants, citrus trees, and avocado trees require lower concentrations of these constituents. Regulatory requirements, including groundwater basin objectives and other standards, require specific levels of treatment be maintained for distribution and use of recycled water. Similarly, under Alternative No. 2, the City of Oceanside recycled water quality may not meet requirements for District use, necessitating additional treatment by the District.

4.2 WATER QUALITY REQUIREMENTS

Water quality requirements for recycled water are characterized as either regulatory requirements or irrigation requirements. Regulatory requirements are set by state and local regulatory agencies, including Division of Drinking Water (DDW), San Diego County Department of Environmental Health (DEH), State Water Resources Control Board (SWRCB), and the San Diego Regional Water Quality Control Board (RWQCB). Irrigation water quality requirements are water quality parameters that are met for recycled water to be used safely for irrigation without negative impact to plants or customers. Water quality is used to identify

the acceptability of recycled water for specific District user types and the resulting impact of the overall recycled water market assessment, thereby establishing the minimum water quality objectives for District-provided recycled water.

The following is a summary of the key water quality considerations used in planning of the District's proposed recycled water treatment and distribution system:

- Recycled water must meet DDW Title 22 Requirements.
- TDS/chloride concentration of the District wastewater is currently 1,000 mg/L, based on available data. Concentrations above 1,000 mg/L TDS can cause issues with turf and other plants. TDS and chlorides are the main concern for agricultural users, who generally have additional on-site treatment. The TDS concentration for regulatory compliance is between 750 and 1,500 mg/L, depending on established Groundwater Objective for the District service area. This requirement would necessitate maximum concentrations of 750 mg/L to meet the existing Basin Plan.
- Standard practice provides a minimum chlorine residual throughout the system to prevent fouling and other associated maintenance challenges.

4.2.1 Regional Water Quality Control Board (RWQCB)

The RWQCB maintains the primary authority to regulate recycled water treatment and use. Recycled water discharges to groundwater (such as recycled water irrigation) are regulated by the RWQCB. The RWQCB also regulates recycled water and wastewater discharges to inland surface waters, estuarine waters, and marine waters in accordance with the federal Clean Water Act. The RWQCB identifies beneficial uses for each watershed, establishes water quality objectives to protect those beneficial uses, and regulates discharges to implement water quality objectives.

The San Diego Region Basin Plan designates municipal supply, agricultural supply, and industrial supply as existing beneficial uses within the Mission and Bonsall Hydrologic Sub Areas (HSA) of the Lower San Luis Rey Hydrologic Area basin, which encompasses the District service area. **Table 4-1** summarizes quality objectives established by the RWQCB to protect the identified designated uses within the District service area.

Table 4-1: Water Quality Objectives (Lower San Luis Rey Hydrologic Area)

Location	TDS	Cl	SO_4	%Na	NO_3	Fe	Mn	MBAS	B	ODOR	NTU	Color	F
Mission HSA	1500	500	500	60	45	0.85	0.15	0.5	0.75	None	5	15	1
Bonsall HSA	1500	500	500	60	45	0.85	0.15	0.5	0.75	None	5	15	1

It is noted in the Basin Plan that a portion of the Upper Mission Basin is being considered as an underground potable water storage reservoir for treated imported water, located north of Highway 76 and the boundary of the Mission and Bonsall hydrologic sub areas. If the program is

adopted, local objectives approaching the quality of the imported water will be set, which could impact the quality requirements for recycled water and may affect District recycled water production.

Use of recycled water for land application (e.g., irrigation) is regulated through the issuance of "waste discharge requirements" (WDRs). WDRs identify project-specific effluent limits, recycled water use requirements, treatment requirements, prohibitions, and other applicable water quality regulations. Effluent concentration standards are established to implement Basin Plan quality objectives. WDRs also incorporate requirements of other agencies (e.g., DDW) having jurisdiction over recycled water use.

Prior to operation of its new recycled water treatment and distribution system, the District will file a Report of Waste Discharge (RWD) to apply a WDR. The RWD describes proposed recycled water treatment and use, as well as compliance with RWQCB and DDW requirements and compliance with CEQA.

4.2.2 State Water Resources Control Board (SWRCB)

In February 2009, the SWRCB adopted the Policy for Water Quality Control for Recycled Water (Recycled Water Policy). The Recycled Water Policy streamlines SWRCB and RWQCB permitting to expedite implementation of recycled water projects. Additionally, the Policy includes requirements for development of Salt and Nutrient Management Plans (SNMP), permitting of landscape irrigation projects, anti-degradation analysis, and research for constituents of emerging concern (CECs).

4.2.3 Division of Drinking Water (DDW)

DDW regulates public water systems and establishes standards for recycled water treatment and reuse, and is the primary permitting agency for public water systems. DDW implements applicable state and federal drinking water, source water, treatment, and distribution regulations through its permitting activities. The RWQCB is the primary permitting agency for recycled water treatment and use. DDW consults in the RWQCB recycled water permitting process; implementing DDW requirements through the recycled water WDRs.

DDW regulations over recycled water use are established within Title 22, Division 4, Chapter 3 of the California Code of Regulations (Title 22), establishing treatment requirements and effluent limits for recycled water irrigation uses. There are several classes of recycled water defined by Title 22. However, the District, in delivering recycled water to customers, is required to produce disinfected tertiary recycled water, applicable for use on areas of high degree of public contact, including irrigation of parks, playgrounds, schoolyards, residential commons, golf courses near home sites, residential fill stations, non-restricted recreational impoundments, and the irrigation of food crops, where the recycled water may contact the edible portion of the crop.

4.2.4 Department of Water Resource (DWR)

The Sustainable Groundwater Management Act (SGMA) was passed in September 2014, establishing requirements for groundwater management in medium and high priority basins, requiring implementation of groundwater sustainability plans (GSPs). The GSP contain actions to maintain groundwater sustainability and avoid basin overdraft. SGMA requires establishment of groundwater sustainability agencies (GSAs) to oversee implementation of GSPs, providing authority to GSAs to manage groundwater. Local water authorities and counties have primary responsibility for implementation of GSPs and GSAs; however, the State has authority to intervene if requirements are not met.

4.2.5 County Department of Environmental Health (DEH)

DEH controls application and enforcement of Title 22 regulations with regard to recycled water conveyance, recycled water use, public notification, backflow prevention, cross connection prevention, and assuring that recycled water is applied consistent with public health requirements. DEH reviews recycled water plans, conducts site inspections, monitors field tests, and evaluates conformance with Title 22 requirements. DEH monitors irrigation sites for compliance with Title 22 regulations, ensuring that recycled water irrigation operations protect public health. DEH requires recycled water use sites to pass initial cross-connection control shutdown tests.

4.3 PROJECTED EFFLUENT REQUIREMENTS

4.3.1 RWQCB Waste Discharge Requirement Comparison

The District, in addition to the water quality requirements of irrigation customers, must conform to applicable recycled water treatment and reuse requirements established by the RWQCB, DDW, and DEH. As the District has no current wastewater treatment facilities, there are no existing WDRs issued by the RWQCB. However, the two project alternatives being evaluated include a new District-owned facility or receiving recycled water from the San Luis Rey Water Reclamation Facility (SLRWRF). The proposed District WRF and the SLRWRF are located within the San Luis Rey Hydrological Unit, and would be projected to receive similar WDRs from the RWQCB. **Table 4-2** provides a summary of the existing RWQCB WDRs for recycled water irrigation for the Escondido Hale Avenue Resource Recovery Facility (HARRF) and Oceanside SLRWRF, with the projected probable WDR requirements for a new District-owned facility. It is noted that the WDR does not establish an effluent limit for nitrogen or nitrate, as typical landscape nitrogen demands exceed nitrogen concentrations in recycled water.

Table 4-2: Probable RWQCB Recycled Water Effluent Requirements for Irrigation Uses

	12-month Average Concentration (mg/L)		
Parameter	Escondido HARRF	Oceanside SLRWRF	Rainbow WRF
Total Dissolved Solids (TDS)	1000	1200	1500
Chloride (Cl)	300	350	500
Sulfate (SO_4)	350	350	500
Iron (Fe)	0.3	0.3	0.85
Manganese	0.05	0.15	0.15
Nitrate (as NO_3)	45[1]	50[1]	45[1]
Boron (B)	0.8	0.5	0.75
Fluoride (F)	2.0	1.0	1.0

[1] Denotes Daily Maximum, as RWQCB does not have 12-month average for Nitrate

As shown above, from a regulatory perspective, a District-owned treatment facility is projected to have very similar effluent limitations as the Oceanside SLRWRF and Escondido HARRF facilities. The SLRWRF is more comparable, as the facilities are within the same hydrological unit and have similar wastewater characteristics. Chloride and TDS concentrations, from a regulatory perspective, are high based on the requirements of the Basin Plan.

4.3.2 Water Quality Requirements of District Users

As discussed, the San Diego Region Basin Plan designates municipal supply, agricultural supply, and industrial supply as existing beneficial uses within the Mission and Bonsall Hydrologic Sub Areas of the Lower San Luis Rey Hydrologic Area basin, which encompasses the District service area. As such, District available recycled water users are related to one or more of these beneficial uses. For the purposes of this analysis, identified recycled water customers were identified to include user types as shown in **Table 4-3**. The location and recycled water demand of these user types is identified later in this section. The following discussions are focused on the water quality requirements of each user type.

Table 4-3: Identified Recycled Water User Types

Recycled Water User Type	No. of Identified Users	User Percentage (%)	Projected Recycled Water Demand (afy)	Demand Percentage (%)
Avocado Growers	37	69	840	65
Citrus Growers	4	7	62	5

Ornamental Tree Growers	4	7	212	16
Row Crop Growers	3	6	65	5
Park & Grass Irrigation	6	11	121	9
TOTAL Users	**54**	**100**	**1300**	**100**

From **Table 4-3**, it is evident that the user identification criteria used in selection of the highest irrigation water users along the proposed District recycled water pipeline alignments is highly influenced by the water quality requirements of the avocado user market. The avocado growers represent approximately two-thirds of the total existing recycled water users and demand. In differentiating identified recycled water markets, it was found that a significant number of District agricultural and irrigation customers incorporate avocado irrigation either totally or to a major degree. In the past, the District policy was to provide agricultural water rates to properties with a specified minimum acreage of avocado, citrus or other cash crop. As a result, District ratepayers with sufficient available land commonly maintained small groves to take advantage of the agricultural water rates. In addition, citrus growers with portions of their property unsuitable for citrus, install avocado groves to maximize beneficial use of the property. Regardless of the reason, the avocado market is considerable, resulting in an increased need for providing recycled water confirming its water quality requirements.

Investigations were conducted to identify the user-specific water quality requirements of each user type, particularly related to TDS and chlorides which are typically the most troublesome constituents for agricultural and irrigation users. In general, such customers would prefer to receive very high quality water, potentially exceeding the water quality of available potable water resources. Thus, the intent of the investigation was to determine the maximum concentration of TDS and chloride required for each user type.

4.3.2.1 Avocado Grower User Type

Avocado growers are a narrowly defined user type, as avocados occupy a unique position in the District's market assessment profile. As discussed above, avocado growers heavily influence the District's recycled water market assessment, and a significant number of properties maintain avocado groves.

Based on reports from the California Avocado Society, toxic injury in California avocado orchards is most frequently associated with chloride. Studies have identified that tip-burn on leaves is prevalent in late summer, if chloride concentration is higher than roughly 100 mg/L. The damage is a result of increase of chloride in the soil solution resulting from evaporation and transpiration as influenced by climate. Better than average water management and drainage conditions permits use of irrigation water with somewhat higher chloride concentrations. Under the very best of conditions, the upper limit of chloride in irrigation waters for use on avocados grown in California is reported to be around 175 mg/L. The average chloride concentration of imported Colorado River water typically ranges from a low of 83 mg/L to a high of 113 mg/L.

Dudek contacted local avocado growers to derive direct feedback with regard to local irrigation water conditions, and the potential for conversion to recycled water. In general, the avocado growers identified that the current potable water TDS and chloride concentrations are detrimental to avocado cultivation. Growers identified current potable water chloride concentrations of 80 mg/L and TDS concentrations of 1,060 mg/L. In discussing conversion to recycled water, the growers were generally accepting of a new water resource, with the main concern being meeting water quality needs. The growers identified preferred chloride concentrations of 50 mg/L and TDS concentrations in the range of 500 mg/L.

Recent studies conducted by the City of Escondido discussed water quality requirements for the City's agriculture producers with a key focus on avocado production, which is also one of the most important crops grown in the City. The limits of various water quality parameters that diminish avocado crop productivity are provided in **Table 4-4**. This information was developed based on meetings with members of the Escondido Growers of Agriculture Preservation (EGAP), as well as published information in the available literature. As stated by EGAP, it is desired to reduce chloride concentrations to 80 mg/L to prevent leaf burn, root rot and the need for excessive flushing, with chloride concentrations up to 100 mg/L being tolerable. It is noted that historical water quality within the City of Escondido water system identifies that average chloride concentration in local raw source water supplies varies between Lake Henshaw at 39 mg/L, Dixon Lake at 80 mg/L and imported water from the San Diego County Water Authority (SDCWA) at 81 mg/L.

Table 4-4: EGAP Avocado Water Quality Criteria for Key Parameters

Parameter	Units	Concentration
Total Dissolved Solids (TDS)	mg/L	540 to 600
Chloride	mg/L	80 (100 maximum)
Sodium Adsorption Ratio (SAR)	ratio	10:1
Electrical Conductivity	µS/cm	500 to 1,000
Boron	mg/L	< 0.5
pH	---	6.5 to 7.0

The water quality requirements for avocado growers are consistent with regard to the importance of chloride and TDS concentrations. As such, the District is projected to require significant reduction of TDS and chloride concentrations regardless of the recycled water supply alternative implemented (District or Oceanside recycled water supply). Although the WDR limit for TDS will likely approach 1,500 mg/L, the average TDS concentration recorded at the Stallion Metering Station is approximately 900 mg/L, with a maximum day concentration of approximately 1,000 mg/L. Chloride concentrations are not recorded at the Stallion Metering Station, but the District's February 2016 Water Quality Report identifies chloride concentrations of its various imported water supplies between 80 and 106 mg/L.

Table 4-5 illustrates the percent reduction in TDS and chloride concentrations to meet the identified water quality needs of avocado growers using recycled water. The equipment and cost to achieve this identified water quality are discussed in Section 6.

Table 4-5: Chloride and TDS Concentration Reduction Requirements (Avocado Growers)

Parameter	Current Concentration (mg/L)	Reduced Concentration (mg/L)	Percent Reduction
Total Dissolved Solids (TDS)	1,000	600	40%
Chloride (Cl)	106	80	25%

As avocado growers represent two-thirds of the District's existing irrigation market to be converted to recycled water, satisfying the water quality need of this market sector is critical. Without sufficient water quality, avocado growers will be reluctant to convert to recycled water. Furthermore, according to the San Diego County Farm Bureau, San Diego ranks as the No. 1 producer of avocados in the nation, a $200,000,000 market in 2010. Yet, the availability of water resulting from drought conditions and other external forces causes decreases in avocado production. According to local growers, providing a drought-resistant, quality water supply for San Diego County avocado growers is critical. For this reason, many San Diego County water purveyors, particularly those in North County, are currently evaluating recycled water programs that can meet the water quality requirements for the avocado industry.

4.3.2.2 Row Crop Growers User Type

Row crop growers are defined to include the cultivation of food crops, flowers and other similar plants.

Salt-affected soils develop from a wide range of factors including: soil type, field slope and drainage, irrigation system type and management, fertilizer practices, and other soil and water management practices. Perhaps the most critical factor in predicting, managing, and reducing salt-affected soils is the quality of irrigation water being used. Besides affecting crop yield and soil conditions, irrigation water quality affects fertility needs, irrigation system performance, and how water can be applied. Therefore, irrigation water quality is critical to long-term productivity. Irrigation water impacts to row crops are defined by the salinity (total soluble salt content), sodium content (relative proportion of sodium to calcium and magnesium ions), pH, alkalinity, and concentration of critical ions (chloride, sulfate, boron, and nitrate).

Unlike avocado growers, the most influential water quality constituent on crop productivity is the water salinity or TDS. The primary effect of high TDS water on crop productivity is plant competition with the soil for water. The higher the TDS, the less water is available to plants. Because plants can only transpire pure water, usable plant water decreases dramatically as TDS increases. Based on recent studies, damage to row crops due to increasing salinity is dependent on the crop, but generally requires TDS of less than 700 mg/L.

Reduction of water infiltration is also critical in row crop production. As with avocados, chloride is the primary indicator of water quality acceptability, with pH, boron, sulfate and alkalinity contributing. Chloride concentrations below 70 mg/L are considered safe for row crops, with more sensitive plants showing injury up to 140 mg/L. Therefore, as TDS and chloride concentrations in District wastewater is approximately 1,000 and 106 mg/L, respectively, demineralization of recycled water will be required to service the row crop market sector.

4.3.2.3 Citrus Grower User Type

Citrus growers are defined to include all types of citrus tree cultivation, including primarily oranges, lemons and grapefruit trees. San Diego County is ranked fifth nationally in the production of lemons, an $80,000,000 per year industry.

Citrus trees, and most other fruit trees, are relatively sensitive to salinity. However, the availability of water during the growing cycle is considered the most critical component of citrus production. Watering the trees in the proper way and at the proper times is necessary, so a drought-tolerant source of irrigation water would be beneficial to citrus growers.

Water quality requirements, are again similar, with higher concentrations being acceptable. Reported limitations on TDS range between 500 and 800 mg/L, while chlorine and sodium concentrations of 200 mg/L or less are acceptable. Irrigation scheduling when using poorer quality water requires more frequent irrigation cycles to keep a low osmotic pressure and to provide leaching to remove toxic ions from the soil profile.

Based on the projected recycled water quality without demineralization (1,000 mg/L TDS and 106 mg/L chlorine), it is projected that minimal TDS removal would be required to service the citrus industry with the proposed recycled water system.

4.3.2.4 Landscape Irrigation User Type

Landscape irrigation is defined to include parks, medians, golf courses, natural open space, and other native or non-native landscaped areas.

Irrigation water quality is an important issue for managers of golf courses, athletic fields, and institutional grounds, as well as parks, greenbelts and other open spaces. With the demand for potable water increasing, irrigation water users are considering non-potable alternatives, such as recycled water. Because water quality influences soil quality and turf grass performance, water quality constituents are tested periodically for factors that can compromise the turf/soil system.

Landscape irrigation is susceptible to the same water quality constituents as other user categories, with significantly higher tolerances. Acceptable TDS concentrations for landscape irrigation range from 200 to 500 mg/L, with concentrations higher than 2,000 mg/L resulting in damage. If using irrigation water with a TDS concentration higher than 500 mg/L, attention on

irrigation duration, frequency, and drainage is important, depending on turf grass and landscape species.

Sodium is not typically a cause for concern unless high concentrations are present. Concentrations exceeding 70 mg/L can be detrimental to both turf and soils. Sodium in irrigation water can be absorbed by roots and foliage, and foliar burning can occur if sufficient amounts accumulate in leaf tissue. Grasses grown on golf course putting greens are particularly susceptible to sodium toxicity because they are mowed very short and irrigated frequently.

Chloride contributes to salinity, and where concentrations are high, can be toxic to plants. Turf grasses are not particularly sensitive to chloride, and can tolerate levels up to 100 mg/L. Turf grasses sustain injury when irrigated with water containing greater than 350 mg/L of chloride.

Based on these identified constituent limitations, the District would not be required to demineralize its recycled water to service typical landscape irrigation users.

4.3.2.5 Nurseries & Ornamental Tree Grower User Type

Nurseries and ornamental tree growers are defined to include both the cultivation and sale of ornamental trees and plants, including landscape nurseries. San Diego County is ranked No. 1 in the nation as a producer of nursery crops and ornamental trees. The ornamental tree and shrub industry was a $425,000,000 industry in 2010, with bedding plants adding another $200,000,000 to the industry.

Reported irrigation water quality requirements for ornamental trees, shrubs and nurseries is similar to those discussed above, with higher tolerances for TDS, chloride and other constituents. Recent studies identify that TDS ranges between 500 and 1000 mg/L represent the tolerance to salinity. As in the discussion of row crops, the chlorine limit is approximately 140 mg/L, with a preferred concentration of less than 50 mg/L. Sodium is a constituent of concern, and is associated with the chlorine concentrations. High sodium contributes to salinity problems, interferes with magnesium and calcium availability and causes foliar burns. Sodium and chloride problems are observed when irrigation water is run through water softeners, and softened water is generally not recommended for greenhouse or nursery irrigation purposes.

Investigations with local ornamental tree growers resulted in similar water quality requirements. Local nursery and ornamental growers identified a limit of 1,000 mg/L for TDS and 80 mg/L for chloride. One grower is currently pumping well water at a TDS of 1,600 to 1,700 mg/L. This grower has an onsite RO system, which is used to achieve the 1,000 and 80 mg/L target concentrations. In converting nurseries and ornamental tree grower to recycled water, TDS and chloride reduction would not be required as the District recycled water product water would meet the identified water quality requirements.

4.3.2.6 Summary of Water Quality Requirements by User Type

Based on the discussions above, salinity and chlorine are shown to be the predominant water quality concerns of the various recycled water market sectors. **Table 4-6** summarizes the TDS and chloride concentration limitations of each irrigation user type, as compared to the District's projected recycled water quality (prior to demineralization). From the table, providing recycled water to the avocado market sector results in the need to construct the greatest level of TDS and chlorine reduction. In all cases, the TDS reduction requirement exceeds the chlorine reduction requirement, and as the same equipment is used for both, the TDS requirement is used to establish the equipment sizing and subsequent cost impacts (presented in Section 6).

Table 4-6: Summary of Water Quality and Demand by User Type

	Constituent Concentration – mg/L (Reduction Percentage)					
Parameter	**Product Water**	**Avocado**	**Row Crops**	**Citrus**	**Landscape**	**Nurseries**
Total Dissolved Solids (TDS)	1,000	600 (40%)	700 (30%)	800 (20%)	2,000 (0)	1,000 (0)
Chlorine (Cl)	106	80 (25%)	140 (0%)	200 (0)	350 (0)	140 (0)
Number of Users	-	37	3	4	6	4
Demand by User Type (afy)	-	840	65	62	121	212
New Developments	-	-	-	-	9	-
New Development Demand (afy)	-	-	-	-	1,170	-
TOTAL USERS BY MARKET	63	37	3	4	15	4
TOTAL DEMAND BY MARKET (afy)	2,470	840	65	62	1,291	212
PERCENT DEMAND BY MARKET (%)	100	34	3	3	52	9

From **Table 4-6**, existing irrigation customers meeting the project selection criteria account for approximately 1,300 afy (1.16 mgd) of projected demand. New developments are projected to provide an additional 1,170 afy (1.05 mgd) of recycled water demand, and are considered to be included in the landscape user market. Therefore, the maximum identified recycled water demand is approximately 2,470 afy (2.21 mgd), with the avocado grower market representing approximately one-third, landscape irrigation one-half, and all other markets one-sixth of the total recycled water demand.

The maximum District wastewater flow is projected to be approximately 1.62 mgd, leaving an identified 0.59 mgd of recycled water demand in abeyance for potential future connection when additional recycled water supply may be available, or to substitute for lost users in the future. The resulting distribution of recycled water between the five user markets will be dependent on the actual users converted to recycled water service.

The phasing of recycled water construction will determine the available recycled water demand as the District system is implemented. Based on current planning, the Phase 1 system will extend from the recycled water supply location, easterly to Old Highway 395, then north to

Beck Reservoir. The Phase 2 component is identified to include the portion of the system south along Old Highway 395, and Phase 3 is the portion of the system along Little Gopher Canyon Road. It is noted that new developments are considered to be served by the Phase 1 system. Also, as the recycled water system is constructed, new demands may be available to allow increased service under the Phase 1 system. Based on the defined construction phases, **Table 4-7** summarizes the projects recycled water demand within each construction phase.

Table 4-7: Recycled Water Demand by Construction Phase

Phase 1	Total	Avocado	Row Crops	Citrus	Landscape	Nurseries
Number of Users	33	16	3	3	9	2
Demand by User Type (afy)	1,483	157	48	88	1,170	20
Percent Demand by Market (%)	100	11	3	6	79	1
Phase 2						
Number of Users	26	19	1	1	3	2
Demand by User Type (afy)	876	659	16	124	64	13
Percent Demand by Market (%)	100	75	2	14	7	1
Phase 3						
Number of Users	4	2	0	0	0	2
Demand by User Type (afy)	111	24	0	0	0	87
Percent Demand by Market (%)	100	22	0	0	0	78
Total System						
Number of Users	63	37	4	4	12	6
Demand by User Type (afy)	2,470	840	64	212	1,234	120
Percent Demand by Market (%)	100	34	3	9	50	5

New developments are attributable to the Phase 1 system. However, the timing of that construction is dependent on the economy and other factors beyond District control. Based on the identified phasing, landscape irrigation constitutes 79 percent of the identified recycled water demand. In contrast, implementation of Phase 2 facilities has a significantly greater reliance on the avocado grower market sector. The Phase 3 system services a small number of recycled water users, with a relatively small demand. It will be necessary to determine in the future if the Phase 3 system is feasible, as opposed to identifying additional recycled water users within the Phase 1 and Phase 2 system.

4.3.3 RECYCLED WATER RISK DETERMINATION

The following discussion addresses potential risk factors for the District relative to implementation of a recycled water production and distribution system.

TDS & Chloride Reduction. Based on the recycled water market and water quality assessment, it is determined that TDS reduction will be required for a large portion of the District recycled water user profile. Chloride reduction is required only for the avocado grower market. However, successful achievement of the TDS reduction requirement for the avocado grower market (approximately 40 percent reduction) will accommodate the necessary chloride reduction, as chloride is a component of the overall TDS concentration, and will be removed proportionately therewith. TDS reduction and blending is identified in Section 6 sufficient to accommodate all identified recycled water market sectors, thereby minimizing District risk relative to user type water quality requirements.

Recycled Water Construction Phasing Considerations. The recycled water backbone system is assumed to be installed as the initial project phase, primarily to facilitate connection to Beck Reservoir.

As discussed in Section 3, the annual average demand for new developments and existing customers within 500 feet of the pipeline alignments were considered to be served. New development significantly effects overall recycled water demand. Without new development, the demand within 500-feet of the system alignments is approximately 0.60 mgd (612 afy). Under Alternative No. 1, the recycled water demand would not be sufficient to dispose of the 0.70 mgd of District wastewater production, spread over all phases of construction.

It is noted that the market analysis identified an additional 0.56 mgd (627 afy) within 1,000 feet of the pipeline alignments, yielding a total demand of 1.16 mgd (1,300 afy) without new development demand. Therefore, the District has the capacity to dispose of its existing wastewater production of 0.70 mgd without new development, as the new development will be the primary component of the future wastewater increases. Coordination of demand and construction phase will be required to cost effectively implement the recycled water program. Alternative No. 2 mitigated these issues, as no restriction of wastewater disposal would exist.

The Phase 1 system serves approximately 24 existing potable customers, a demand of 0.28 mgd (313 afy), and all of the identified new developments. Depending on construction timing of these developments, an additional 1.05 mgd (1170 afy) would be served. Delay in construction of new developments would reduce recycled water demand, and would also result in less wastewater production. Of the ultimate 1.62 mgd of wastewater production, 0.92 mgd is from the new development and 0.70 is existing wastewater customers. Thus, without further development, the recycled water demand required to dispose of District wastewater effluent is approximately 0.70 mgd (784 afy). From Table 4-7, the Phase 1 recycled water demand constitutes 313 mgd or 40 percent of the required disposal volume.

Phase 2 serves approximately 26 additional customers, with an average demand of 0.78 mgd (876 afy). Combining with the Phase 1 system, not including new development, the total

demand is 1.06 mgd (1,187 afy). Based on the identified phasing, the District will need to construct both Phase 1 and 2 to acquire sufficient demand to completely dispose of its wastewater production.

Phase 3 serves an additional 4 customers a demand of 0.1 mgd (112 afy). Several future developments are proposed along Little Gopher Canyon Road (Polo Club and Morris Ranch). Prior to construction of this phase of the recycled water distribution system, it is recommended that the District review these proposed developments for changes in demand requirements.

Avocado Grower Market Influences. As would be expected, the avocado grower market sector constitutes a significant demand on the District's proposed recycled water program. Avocado growers have long been one of the largest users of potable water supplied by the District. The avocado industry in San Diego County is No. 1 in the nation, and the Bonsall area represents the No. 1 area within San Diego County. The longevity of the avocado industry is of considerable discussion in recent years, and is relevant to the decision making process of the District. Can the proposed recycled water system be implemented and continue to function effectively in the event that the avocado industry was unavailable?

Ultimately, the total identified recycled water demand is approximately 2,470 afy, of which avocado growers constitute approximate 840 afy (34 percent). Assuming recycled water was not available for the avocado market sector, the remaining identified recycled water demand is approximately 1,630 afy, including the identified new developments with a demand of 1,170 afy. Therefore, the identified recycled water demand other than the new developments is approximately 460 afy. The District recycled water system will be more dependent on the avocado market sector in the early stages of implementation, lessening over time as new developments emerge and increase recycled water demand.

The Phase 1 recycled water system is dominated by projected new development demand (80 percent of total phase demand), while Phase 2 is dominated by avocado industry demand (75 percent of total phase demand). Assuming that both the avocado and new development demand is unrealized, the total recycled water demand is approximately 0.47 mgd (530 afy), approximately 0.23 mgd (258 afy) short of the demand required to dispose of collected wastewater production. If the avocado industry and new developments are unavailable, the District will be forced to develop additional recycled water demand within the Phase 1 or 2 recycled water systems to assure a minimum demand of 0.70 mgd (784 afy).

The District-wide water demand of the avocado growers' market sector is significant. Loss of specific avocado grower demand is projected to be easily replaced based on the vast number of properties with avocado groves. Failure of the entire avocado industry in San Diego County, while not currently considered eminent, would have a dramatic effect on the District's ability to treat and dispose of its wastewater production in the early stages of implementation. As the available volume of recycled water will be considerably less than the District's total water demand, it is projected that applications for recycled water service may exceed production. As such, many recycled water purveyors maintain waiting lists of recycled water customers to

accommodate demand losses and maintain system viability. Such a list would undoubtedly include customers from all agricultural and irrigation user markets.

Collapse of the San Diego avocado industry is often discussed, even though it is ranked first in the nation for avocado production. The loss of an individual avocado grove is easily replaced, as there are numerous groves throughout the District service area. Loss of the entire avocado industry requires the District to focus on alternate recycled water users for needed demand. Within the District service area, the District has multiple recycled water customer types, including but not limited to Caltrans rights-of-way along the Interstate 15 and SR-76 corridors, golf courses, row crops, landscape and nurseries, as well as other land uses, including County medians and open space commercial developments, office and business properties, local horse and livestock uses. The rural nature of the service area has many potential recycled water users. The avocado industry has the advantage of being very prevalent and wide-spread throughout the District service area.

The local Avocado Growers Association maintains statistics on the production and overall status of the industry. Water and labor costs are the primary drivers of the industry, both of which continue to increase. The availability of lower cost, drought-tolerant recycled water provides mitigation of potential water availability and cost challenges for avocado growers, as evidenced by recycled water programs of Ramona and Escondido, among others. Considering that the recycled water system is a few years away of implementation, the District is recommended to interface with the local Avocado Growers Association and begin to develop commitment from specific growers for long-term recycled water supply. In this way, the risk associated with the avocado industry can be mitigated through such commitment agreements. These commitment agreements will provide collateral to long-term funding of the system, assuring repayment and solvency.

Conversely, consideration of the collapse of the avocado grower market sector highlights one of the advantages of Alternative No. 2. Under this alternative, recycled water would be produced at the SLRWRF to accommodate a severe drop in recycled water demand. District wastewater would be treated and disposed of in a similar manner as it is today. Depending on future legislation, effluent disposal may require secondary or tertiary treatment, the cost to maintain these treatment and disposal options will increase with time. However, the District would not be faced with a situation where no disposal option is available for collected and treated recycled water.

Alternate Recycled Water Disposal Considerations. Other local Water Districts currently own and operate small recycled water systems with similar challenges. Land application is used as the emergency means of effluent disposal. The rural nature of the District service area provides opportunities for such effluent disposal opportunities. Advancement of indirect potable reuse opportunities may be available as legislative change occurs. Live stream discharge of tertiary effluent, while not allowed in San Diego County, would be a viable solution for inland recycled water treatment facilities.

Indirect and direct potable reuse (IPR/DPR) have gained acceptance over the past five to ten years. The majority of IPR projects involve larger groundwater basins or large surface

impoundments, providing significant mixing and travel time prior to withdrawal and retreatment. The District Groundwater Study defines limited groundwater volume with the service area. Therefore, IPR opportunities are limited in the current regulatory environment. However, as regulations change, future IPR opportunities may emerge allowing the District to take advantage of additional recycled water uses.

DPR, involving distribution of advanced treated recycled water directly within the potable water system, is not currently allowed. However, ongoing discussion and regulatory changes may change the regulations in the future. The District would be required to implement advanced treatment facilities to accommodate DPR regulations. Advanced treatment facility requirements and costs, while significant, are not fully defined by the regulatory community at this time. As regulations change, the District will be able to take advantage of new opportunities. The initial implementation of the recycled water system must, however, be based on current regulations for Title 22 recycled water uses.

As IPR/DPR are generally accepted in the water industry as the logical and inevitable conclusions of long-term water demand management needs, it is possible to plan now for implementation of such a system. Under this scenario, the District would forgo construction of approximately $20,000,000 of recycled water distribution facilities, investing instead in advanced treatment facilities. In a regulatory environment where IPR or DPR were allowed, the cost of advanced treatment is projected to be a savings to the District. However, treating water to potable water standards to be used for non-potable uses is more expensive than providing Title 22 water. This discussion is similar to pumping water to the highest pressure zone and using pressure reducing stations to bring the water back down to each successive pressure zone. Energy is wasted by not pumping only the needed water to each pressure zone. Similarly, treatment of all water to potable quality far exceeds the needs of most agricultural and irrigation users. A direct use system, from a treatment perspective, is more efficient and cost effective.

Considering that IPR and DPR are not currently available to the District, waiting for regulation change will result in the District continuing on with wastewater collection and conveyance to Oceanside for treatment and disposal, without development of a local recycled water supply. As the City of Oceanside continues along the path of implementing its recycled water system, the District may, over time, find that Alternative No. 2 becomes its best option as costs continue to increase.

Brine Production Challenges. As TDS and chlorine reduction is required, the resulting brine concentrate will require disposal. This analysis evaluated brine disposal options including a dedicated brine pipeline from the treatment plant to the Oceanside Outfall and potential hauling disposal of brine volumes. The hauling alternative was found to be undesirable as a result of the number of truck trips required on a daily basis. Therefore, construction of a new brine disposal pipeline along or paralleling the North River Road alignment is identified. Brine production is identified to be in the range of 60,000 to 70,000 gallons per day (gpd).

The District, January 2016, completed evaluation of a proposed Groundwater Supply Project that would capture and utilize the imported water return flows in a portion of the San Luis Rey

Valley Groundwater Basin (Basin) overlain by RMWD's service area. The hydrologic analysis determined that projected imported water return flows recharging the study area portion of the Basin for water years 2016 through 2046 ranged from approximately 7,200 to 7,600 afy. The brackish quality of the local groundwater necessitated similar TDS reduction facilities as required for the recycled water program. The groundwater study identified an 8-inch brine line alignment for brine concentrate disposal, which could serve both facilities.

Brine concentrate transport and disposal has been implemented throughout southern California for many years. The Santa Ana Watershed Project Authority (SAWPA) owns and operates a 30-mgd system that conveys non-reclaimable brine flows from as far inland as Elsinore Valley and Yucaipa to the coast for ultimate disposal. The City of Escondido owns and operates a land outfall that conveys treated effluent and brine to the San Elijo Ocean Outfall. San Diego regional partners, including Fallbrook Public Utilities District and Valley Center Municipal Water District, are interested in the proposed brine pipeline. The cost of the brine pipeline may be shared by multiple agencies, thereby lowering the implementation cost to each participant.

Brine line operation has inherently less risk than hauling and is considerably less expensive than on-site distillation or other brine concentrate reduction methods. A brine storage basin would likely be needed to facilitate the potential need to take the proposed brine pipeline out of service for inspection or in an emergency. As with a potential dramatic reduction in recycled water demand, brine disposal is another advantage of Alternative No. 2. The SLRWRF currently has both land and ocean outfall facilities. Conveying wastewater to the City for treatment minimizes potential challenges with brine concentrate disposal, with a corresponding cost. With the interest of regional partners and available construction corridors, the brine pipeline alternative is feasible for implementation. Alternative No. 1 offers the ability to take advantage of dewatered downstream wastewater pipelines that may provide for trenchless construction of the new District brine pipeline.

Treated Effluent Considerations. As discussed, recycled water distribution within the District service area requires the same facilities, regardless of the recycled water source of supply. Recycled water from either a District-owned facility or SLRWRF is projected to have similar effluent water quality. Therefore, both recycled water sources will require TDS and chlorine reduction prior to distribution to District customers. The difference is where the required facilities are located, and the cost to construct and operate the facilities.

It is projected that under Alternative No. 1, the District will directly control the wastewater treatment process and subsequent TDS reduction to required concentrations. Alternative No. 2 would require that the City implement TDS removal at the SLRWRF, facilities that are not currently identified in the City's Recycled Water Master Plan. A third option could include a District-owned demineralization facility, which would allow the District to advance treat recycled water supplies from the City. However, it is projected that the City will ultimately require TDS and chlorine reduction for its recycled water customers. The economy of scale for constructing demineralization facilities at the SLRWRF may be more cost effective. WDRs for the effluent quality under either alternative will be similar, so extreme variation in effluent quality will not be acceptable to the RWQCB and other permitting agencies.

Project Viability Considerations. As shown through previous discussions, TDS and chlorine removal is required for the District's recycled water system, primarily to meet the water quality requirements of the avocado industry. The cost of adding necessary TDS reduction facilities is not significant relative to the overall cost of the recycled water program. Failure to implement TDS and chlorine reduction results in reduction of available recycled water users, and reduces the viability of the entire program.

The likelihood of wide-spread failure of the agricultural and irrigation industries that will support the District recycled water program is extremely low. Similar recycled water programs are in operation throughout California, and those programs remained viable through the recent drought. The drought stressed all recycled water programs, reducing recycled water production and creating challenging business conditions for recycled water customers. But in the end, recycled water is drought tolerant, high quality, and lower cost than relying on high cost and dwindling imported water supplies.

With time, the District will need to occasionally increase recycled water demand to balance wastewater collection and disposal needs with available customers. In evaluating the recycled water users within the District service area for this project, it is evident that the District has no lack of available recycled water users. The District has an array of recycled water customers throughout its service area, including but not limited to:

- Additional known new development beyond those included in this analysis (Warner Ranch, Meadowood, among others). These new developments are viable and typically eager to receive recycled water to assist with identifying necessary water supplies for development.

- Caltrans rights-of-way are available to the District, both along the Interstate 15 corridor and the new SR-76 corridor. Caltrans is also typically eager to user available recycled water resources.

- Many of the local golf courses currently have local groundwater wells that provide significant water volumes at lower cost. However, groundwater quality within the Mission and Bonsall HSAs are degraded, and local wells may not meet the golf course needs over time. Additionally, the golf course rights to local groundwater supplies have been questioned. Recycled water is a viable alternative for golf course superintendents.

- Within the identified recycled water user types identified in the analysis, the District has sufficient opportunity for increased recycled water production.

- Other land uses, including County medians and open space commercial developments, office and business properties, local horse and livestock uses, all provide additional recycled water users for addition to the District system.

Unavailability of additional recycled water users is not projected to be a challenge for the District, as a result of the small size of the wastewater collection system in relation to the overall District size. Water customers far exceed the number of wastewater customers, as a

result of the number of properties with septic systems. As a result, the District will only be able to convert a small portion of its overall water demand to recycled water. Under Alternative No. 2, the District may have the ability to purchase additional recycled water from the City. However, the City is currently implementing its own recycled water program, and excess recycled water may not be available.

A District-implemented recycled water program, regardless of the ultimate recycled water source, is projected to remain viable for many years. The ongoing focus on water sustainability, elimination of existing ocean discharges, and ever decreasing imported water supplies makes recycled water viable.

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5 RECYCLED WATER DISTRIBUTION SYSTEM

Alternatives No. 1 and 2 include installation of a recycled water distribution system. As discussed above, both alternatives required the same recycled water distribution system within the District's service area boundary and serve the same recycled water customers as defined by the recycled water market assessment in Section 3. The primary differentiator of the two alternatives is improvements to the recycled water system in the City's Upper Recycled Water System (along North River Road), as described in Section 5.2.2.

5.1 EXISTING SITE CONDITIONS

The following discussions identify existing site conditions along the proposed recycled water pipeline alignments, based on current conditions. Recycled water pipeline alignments within future development are assumed to follow existing rights-of-way.

5.1.1 Horizontal Alignment

The District recycled water distribution system commences in the vicinity of Sleeping Indian Road and North River Road, within the City of Oceanside. From that intersection, pipelines are projected east along North River Road, through mostly rural areas, for approximately 2.0 miles before crossing State Route 76. After crossing State Route 76, the recycled water alignment crosses under the San Luis Rey River, and continues east to the vicinity of Lift Station 2. The recycled water alignment continues north on Old River Road, which is mostly rural with smaller residential developments and a school.

The recycled water alignment continues northeast along Old River Road about 2.3 miles, reaching the intersection with Camino Del Cielo. The pipeline continues north on Camino Del Cielo for approximately 1.0 mile, and then northeasterly in Dulin Ranch Road (becoming Dulin Road). The pipeline continues in Dulin Ranch Road through the proposed Vessels development for approximately 3.4 miles. The surrounding area continues to be rural with surrounding agricultural uses. Approximately 0.5 miles prior to Old Highway 395, the alignment crosses the San Diego County Water Authority (SDCWA) Aqueduct alignment.

At the intersection of Old Highway 395, the alignment continues north along Old Highway 395, crossing State Route 76 (0.6 miles) and then continues east on Pala Mesa Drive (1.0 mile). The alignment continues in Pala Mesa Drive for approximately 0.8 miles, turning north at Wilt Road, continuing north in Wilt Road to the entrance road to Beck Reservoir (1.4 miles) and traverses another 0.3 miles before reaching Beck Reservoir. The area continues to be mostly rural with agricultural and smaller residential development.

In addition to the primary (Phase 1) recycled water transmission alignment to Beck Reservoir, two separate alignments convey recycled water south of SR-76. The Phase 2 alignment begins at the intersection of Dulin Road and Old Highway 395, continuing south on Old Highway 395 for approximately 1.4 miles, then continuing west on West Lilac Road. A proposed booster pump station and reservoir are required in the vicinity of West Lilac Road and Old Highway 395. Investigation of existing parcels in the vicinity of the proposed pump station site indicates

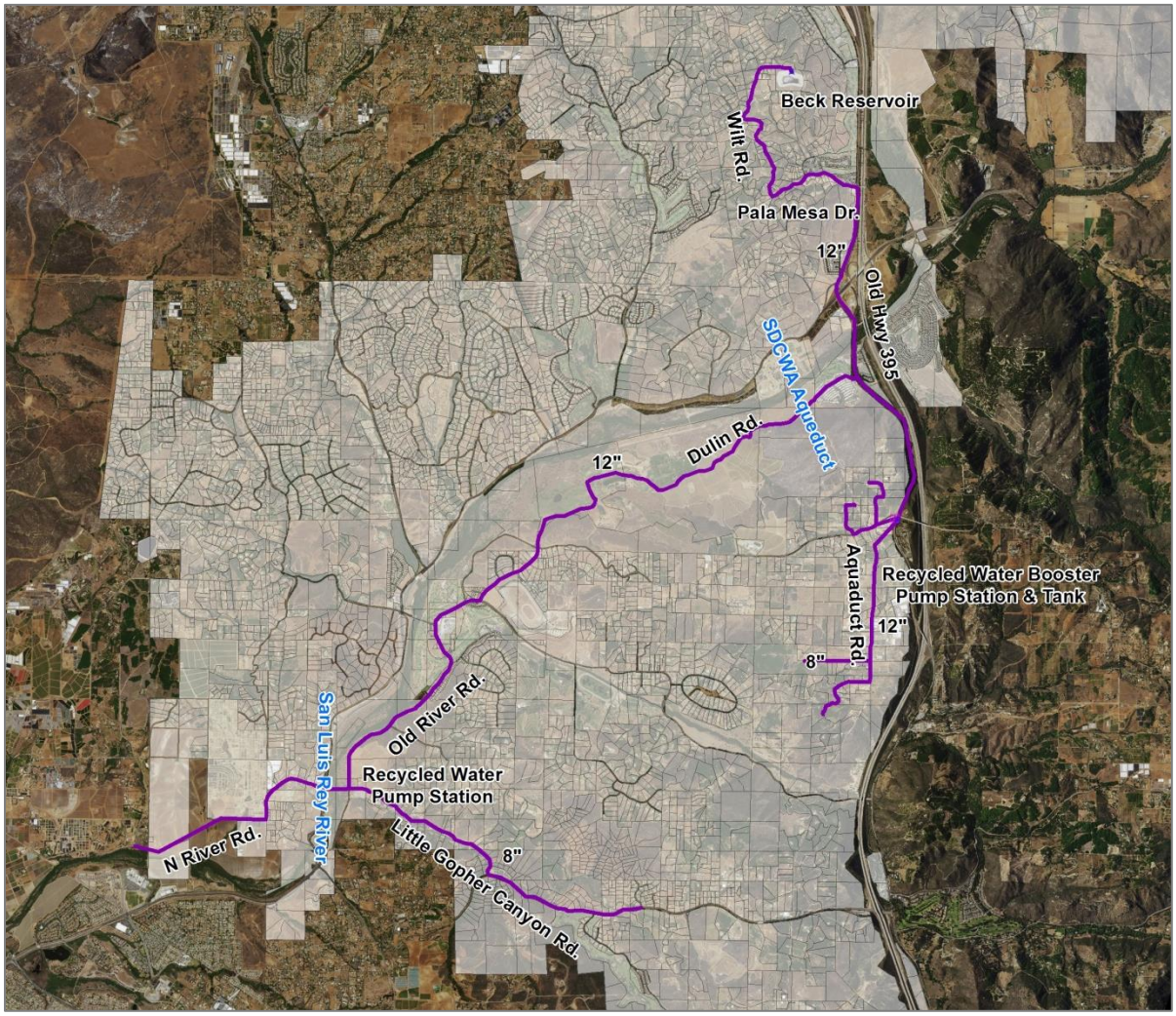
two District-owned parcels. The larger parcel (APN No. 12707105) is approximately 6.2 acres and is located on Aquaduct Road, approximately 1,660 feet southwest of the intersection of West Lilac Road and Old Highway 395. The smaller parcel is 0.3 acres and is not considered sufficient for the required storage tank and booster pump station facilities.

The pipeline continues west in West Lilac Road approximately 0.3 miles, then south on Aquaduct Road. Lesser alignments deviate from the West Lilac alignment, continuing north from West Lilac Road on Ranchos Ladera Road and Mountain View Road. The alignment continues south on Aquaduct Road, approximately 1.3 miles, and then west on Calle Joya for approximately 1.0 mile. Lesser distribution alignments continue west of Aquaduct Road on Calle De Talar. The Mountain View Road alignment crosses the SDCWA Aqueduct in two separate locations and the proposed Aquaduct Road pipeline alignment parallels and crosses the SDCWA Aqueduct throughout the alignment. Coordination with the SDCWA for aqueduct protection will be required throughout construction of these pipelines.

The Phase 3 recycled water alignment extends along Little Gopher Canyon Road, from Old River Road, southeast for approximately 1.5 miles to Gopher Canyon Road, where the pipeline continues east along Gopher Canyon Road approximately 1.3 miles.

The identified recycled water alignments are illustrated on **Figure 5-1**. Preliminary plan and profile drawings at a scale of 1-inch equal 400-feet (horizontal scale) are included in **Appendix A**. The total length of proposed recycled water distribution facilities is approximately 13.0 miles. Standard appurtenances, as well as various trenchless construction techniques, will be required during system implementation.

Figure 5-1: Proposed Recycled Water Distribution System



5.1.2 Topography

The proposed recycled water system has an elevation difference of approximately 780 feet mean sea level (msl), from the intersection of Sleeping Indian Road and North River Road to Beck Reservoir. However, approximately 70 percent of the elevation change occurs in the last 3.5 miles of the pipeline, prior to Beck Reservoir, resulting in pipeline slopes between 5 and 12 percent in the vicinity of Beck Reservoir. The recycled water system follows alignments similar to District potable water alignments, and the District is accustomed to operation and maintenance of high pressure system components. No topological constraints were identified that would preclude construction along the identified pipeline alignments.

From the Sleeping Indian Road and North River Road intersection, between State Route 76 and Old River Road, the main recycled water alignment crosses the San Luis Rey River at an elevation of approximately 130 feet msl. This crossing is assumed to be accomplished using horizontal directional drilling (HDD) construction techniques.

The southerly branch of the distribution system, along Old Highway 395, traverses an average slope of 7 percent, then continues east along West Lilac Road at a slope of approximately 6 percent, then south along Aquaduct Road at slopes between 2.5 and 9.0 percent. The final portion of the alignment on Calle Joya traverses slopes of approximately 6 percent.

On Little Gopher Canyon Road, the recycled water pipeline traverses a 290-foot (msl) elevation change, with slopes ranging between 2.0 and 9.0 percent.

5.1.3 Rights-of-Way

It is projected that recycled water pipeline installation will be completed within the public rights-of-way and within potential private roadways, that either currently exist or are proposed to exist in the future. Where recycled water alignments are not currently within roadways (such as crossing the San Luis Rey River), separate easements will be required.

The proposed recycled water alignments include SDCWA aqueduct encroachment impacts. Based on past experience, SDCWA aqueduct crossings require mitigation with reinforced concrete encasement to provide protection that prevents the pipeline from damage as a result of excessive loading. The specific design of the aqueduct protection is based on the weight of the equipment used during construction. Engineering calculations are required that are stamped and signed by a registered civil engineer licensed in the State of California. SDCWA staff provide part-time or full-time inspection, depending on the condition of the crossing.

5.1.4 Geologic Setting

Specific geological investigations were not completed for the preparation of this analysis. As the District currently maintains potable water pipelines within the majority of the proposed recycled water alignments, it is assumed that geologic conditions support construction of the required pipelines within the proposed alignments. Verification of soil and groundwater conditions within the identified alignments will be required during design. Geologic soil borings with hollow-stem augers and groundwater investigations are recommended. Trenchless construction will be required for crossing of major obstacles, such as rivers, major intersections SDCWA aqueducts, and other utilities.

5.1.5 Environmental Constraints

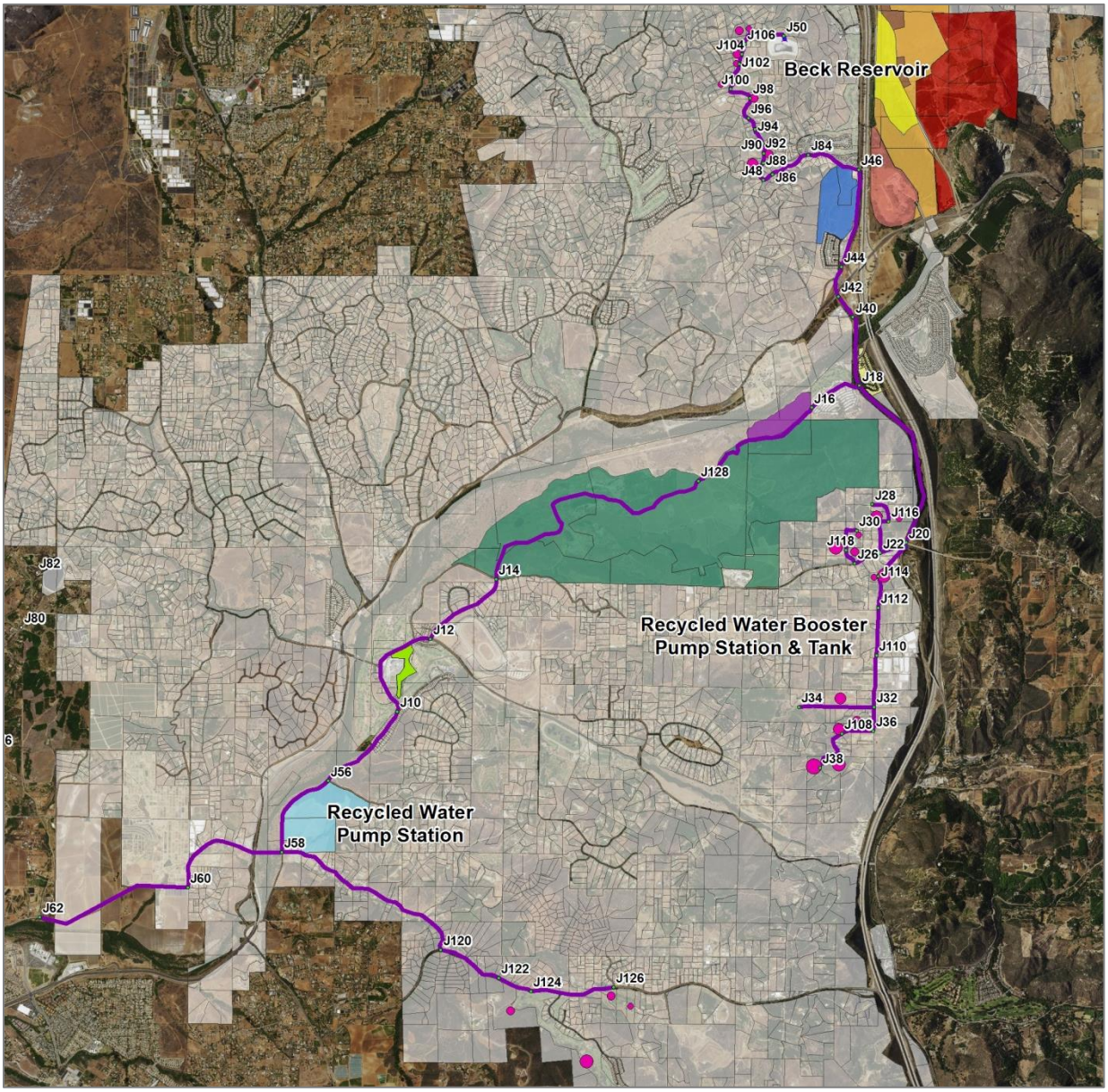
The proposed alignments traverse existing roadways, thereby limiting impact to existing environmental resources. However, as discussed in more detail in Section 8-1, significant environmental documentation is required to mitigation impacts to below a level of significance.

5.2 PIPELINE DESIGN CONSIDERATIONS

Dudek defined the needed recycled water distribution facilities using a hydraulic model, developed using the InfoWater modeling software, as illustrated on **Figure 5-2**. The modeling analysis includes integrated GIS functionality to permit geospatial planning. The modeling

simulation incorporates the potential recycled water customers and used to refine recycled water pipeline alignments. Demands were incorporated at appropriate locations to represent anticipated recycled water delivery, as discussed in Section 3.

Figure 5-2: Overview of InfoWater Hydraulic Model



The developed recycled water simulation tool uses Modified Hybrid Method and the Lagrangian Time-Driven Method (TDM) for both hydraulic and water quality analyses, in conjunction with the Hazen-Williams Equation, calculating headloss based on recycled water flow and pipeline friction losses. The Hazen-Williams Equation is defined as:

$$H_f = \frac{0.002083 \times L \times [100/C]^{1.85} \times Q^{1.85}}{D^{4.8655}}$$

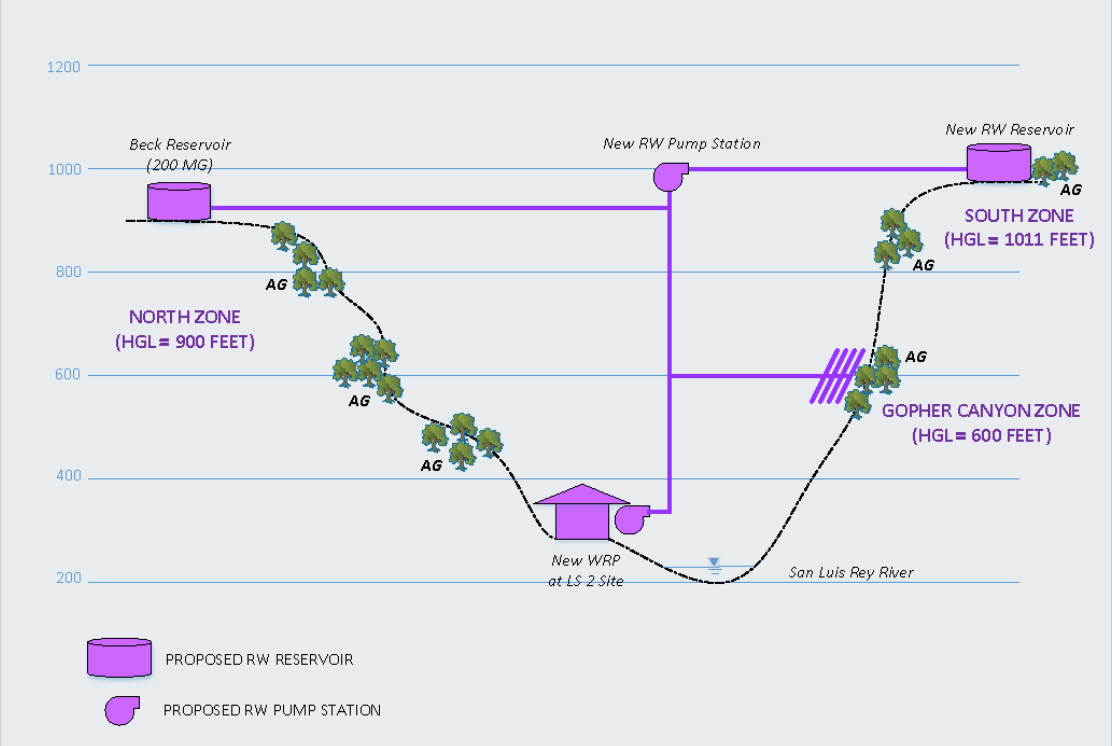
Where:

H_f = headloss due to friction, feet
L = length of pipe, feet
C = Hazen-Williams coefficient
Q = flowrate, gallons per minute
D = inside pipe diameter, inches

It is necessary to define the parameters by which the recycled water facilities will be defined. **Figure 5-3** illustrates the recycled hydraulic profile. The following design criteria are included relative to pipeline planning and design:

- Maximum pipeline velocity: 8 feet per second (fps)
- Minimum pipeline velocity: 1.5 fps
- Maximum headloss: 5 ft/1000 ft of pipeline
- Maximum system pressure: 350 psi
- Hazen Williams Coefficient: 130 (to evaluate the aged condition of the system)
- Storage requirements: Use of Beck Reservoir; New storage tank (2 MG) along Southerly Old Highway 395 alignment
- Pumping requirements: Use of 450 gpm (150 ft TDH) booster pump station in conjunction with new storage tank

Figure 5-3: Proposed Recycled Water System



Analysis included extended period simulation (EPS), allowing evaluation of the system over a varying time interval to predict varying pressures and flows. The analysis incorporated the complete demand set (as described in Section 3). System pressure and demand is maintained by Beck Reservoir, with a smaller (2 MG) tank and booster pump station on the southerly Old Highway 395 alignment. The developed hydraulic simulation will be instrumental in refining the preliminary analyses during the final design process. Based on the analyses performed, **Table 5-1** presents the results of the hydraulic analyses, summarizing the pipeline diameters required for the District recycled water distribution system.

Table 5-1: Proposed Recycled Water Pipeline Diameters

Recycled Water Pipeline Alignment	Proposed Pipeline Diameter (inches)
System Backbone – Oceanside/District Boundary to Beck Reservoir	12
Southerly Old Highway 395 Branch	12
Little Gopher Canyon Road Branch	8
Ranchos Ladera Road Distribution	8
Mountain View Road Distribution	8
Calle De Talar	8

As shown, the distribution pipeline diameters are small based on the defined system demand. It may be prudent, during design, to oversize the pipelines to provide additional capacity for future demand increases, in the event that additional recycled water supply is realized. Also, it is recommended, depending on the project alternative selected, that the District discuss future recycled water requirements of neighboring agencies, as wheeling of recycled water from Oceanside to the District and other eastern inland agencies may be possible. At present, the Valley Center Municipal Water District has discussed conveying wastewater through the District system to SLRWRF for treatment and disposal. Future discussion may include treatment of these flows at a District-owned treatment facility. In either case, increasing the diameter of primary transmission pipelines may be prudent and ultimately more cost effective than constructing parallel or replacement facilities in the future.

5.2.1 Pipeline Phasing

The recycled water backbone system is assumed to be installed as the initial project phase, primarily to facilitate connection to Beck Reservoir. This portion of the system conveys recycled water from the recycled water supply to Beck Reservoir, serving identified customers along the alignment. The Phase 1 system serves approximately 11 existing potable customers, a demand of 0.12 mgd (109 afy), and all of the identified new developments. Depending on construction timing of these developments, an additional 1.05 mgd (1170 afy) would be served. This phase of the project requires upgrades to Beck Reservoir, including conversion to recycled water use and potential Division of Dams updated review and permitting. Complete cross connection testing will be required to assure that no potable water connections remain after conversion to recycled water use.

Phase 2 is proposed to include the southerly Old Highway 395 branch of the system. This phase includes construction of the proposed recycled water pipeline, as well as the booster pump station and reservoir on Aquaduct Road. This portion of the system serves approximately 13 additional customers, with an average demand of 0.38 mgd (381 afy).

Phase 3 includes the Little Gopher Canyon Road Branch, serving an additional 4 customers a demand of 0.1 mgd (112 afy). Several future developments are proposed along Little Gopher Canyon Road (Polo Club and Morris Ranch). No demand associated with these developments was included in the recycled water market assessment, because the proposed developments are projected to have low irrigation demand. However, prior to construction of this phase of the recycled water distribution system, it is recommended that the District review these proposed developments for changes in demand requirements.

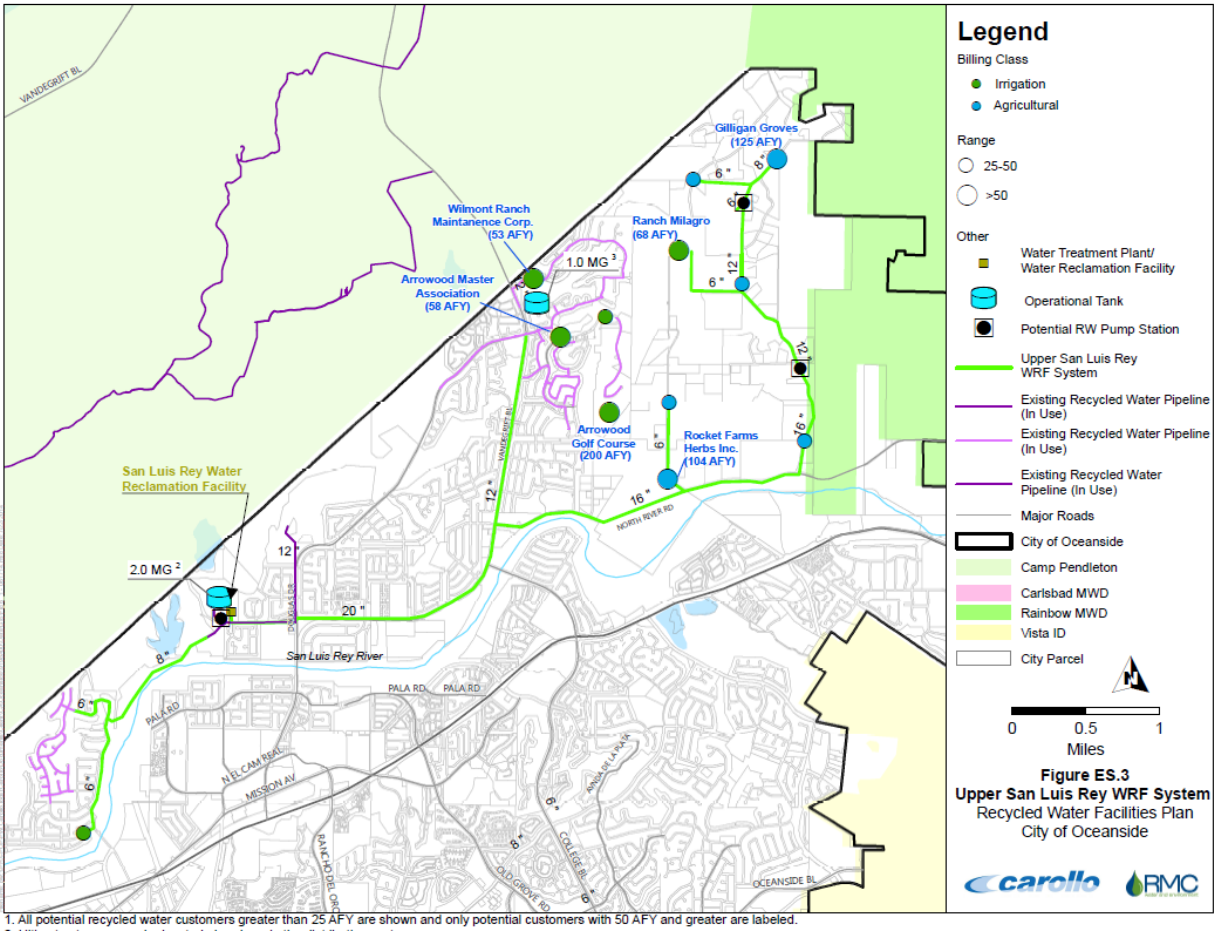
As discussed in Section 3, the annual average demand for new developments and existing customers within 500 feet of the pipeline alignments were considered to be served. New development significantly effects overall recycled water demand. Without new development, the demand within 500-feet of the system alignments is approximately 0.60 mgd (612 afy). Under Alternative No. 1, the recycled water demand would not be sufficient to dispose of the 0.70 mgd of District wastewater production, spread over all phases of construction. As a result, under Alternative No. 1 and depending on the development pressure, the District may be required to transfer flow from the City system to its new treatment facility over time, as development and demand increase. It is notes that the market analysis identified an additional 0.56 mgd (627 afy) within 1,000 feet of the pipeline alignments, yielding a total demand of 1.16 mgd (1,300 afy) without new development demand. Therefore, the District has the capacity to dispose of its existing wastewater production of 0.70 mgd without new development, as the new development will be the primary component of the future wastewater increases. Coordination of demand and construction phase will be required to cost effectively implement the recycled water program. Alternative No. 2 mitigated these issues, as no restriction of wastewater disposal would exist.

5.2.2 Oceanside System

Alternative No. 2 is predicated on the assumption that recycled water tributary to the District's new recycled water distribution system is supplied from the SLRWRF. The point of delivery from the Oceanside upper recycled water system is in the vicinity of Sleeping Indian Road and North River Road. Based on proposed operational planning of the Oceanside recycled water system, several system improvements are required to enable recycled water to be conveyed from SLRWRF to the District distribution system. These improvements include pipeline diameter increases, as well as pump station modifications.

The City recently completed its Recycled Water Master Plan (December 2015), recommending new recycled water facilities to convey tertiary treated effluent from the SLRWRF to an Upper Recycled Water System, as illustrated on **Figure 5-4**.

Figure 5-4: Oceanside Upper San Luis Rey WRF System



1. All potential recycled water customers greater than 25 AFY are shown and only potential customers with 50 AFY and greater are labeled.
2. Ultimate storage may be located elsewhere in the distribution system.
3. Provided by Camp Pendleton.

The proposed City recycled water alignments consists of approximately 12,200 LF of 20-inch and 11,400 LF of 16-inch diameter pipelines from the SLRWRF to the intersection of Sleeping Indian Road and North River Road. For purposes of this analysis, it is assumed that the pipelines along North River Road, within the City's upper system, are appropriately increased to accommodate recycled water demand within both the City and District distribution systems, as defined in this analysis.

As identified in the City's recycled water master plan, the peak hour recycled water flow rate is estimated to be approximately 3,870 gpm. The District recycled water demand is projected to be a maximum of 3,200 gpm, essentially doubling the planned conveyance requirement of the City system. Adding 3,200 gpm, the City's proposed 20- and 16-inch pipelines are required to be increased to approximately 30- and 24- inches in diameter, respectively. The additional District flow is projected to increase the required horsepower of the City recycled water

pump station by approximately 200 Hp. For the purposes of this analysis and for cost estimating purposes, the cost of these facility improvements are considered to be capital costs that are negotiated between the City and District. The cost opinions herein include current estimates of these costs.

5.2.3 Vertical Alignment

For preliminary design purposes, an average depth of cover between 5 to 10 feet is assumed to provide minimal interference with existing utilities and minimize construction cost. The vertical alignment is required to maintain California Department of Public Health (CDPH) vertical separation requirements, with the recycled water pipeline a minimum of one foot below existing water mains. Depths of cover greater than 15 to 20 feet are projected to be more cost effective using trenchless construction techniques. The vertical profile minimizes localized high and low elevations to reduce the number of air vacuum and blow-off appurtenances, and subsequently minimizing capital and operation and maintenance (O&M) costs. The preliminary vertical profile of the proposed District recycled water system is provided in **Appendix A**.

5.2.4 Pipe Material

At present, thermoplastic (high density polyethylene (HDPE) and polyvinyl chloride (PVC) pipe) and ductile iron (DI) pipe materials are most commonly used for recycled water conveyance. **Table 5-2** illustrates the advantages and disadvantages of the three proposed pipe materials.

Table 5-2: Recycled Water Pipeline Material Comparison Table

Pipe Material	HDPE	PVC	DI
Advantages	-Higher Corrosion Resistance -Less Hydraulic Loss -Higher Chemical Resistance -Lightweight -High Pressure Capability -Non-Brittle -Minimize Use of Fittings. Fusion-Welded Joints (Eliminates potential for leakage or separation of joints) -More accepting of impact	-Higher Corrosion Resistance -Less Hydraulic Loss -Higher Chemical Resistance -Lightweight -Accepting of impact	-Long-Lived -Strong -Impervious -Scour-Resistant -Highest Pressure Capability -Larger Deflections at Joints (Less fittings required) -Large Number of Options for Joint Restraint
Disadvantages	-Lower Pressure Capability compared to DI -Requires tracer wire for location	-Lower Pressure Capability compared to DI -Requires tracer wire for location -Use of Fittings. Joints (Potential for leakage or separation of joints) -More brittle than HDPE	-Lower Corrosion Resistance -More Hydraulic Loss -Lower Chemical Resistance -Heavier -Use of Fittings -Joints (Potential for leakage or separation of joints)

For purposes of this analysis, it is assumed that the District recycled water distribution system be constructed of HDPE materials, unless pressure requirements dictate otherwise. This assumption will be revisited during the design process, considering actual construction conditions and District preferences.

5.2.5 Valves & Appurtenances

5.2.5.1 Isolation Valves

Isolation valves will be placed throughout the recycled water system to allow for isolation of various sections of pipeline. Based on the proposed pressure and size of the distribution system, isolation valves are projected to include buried plug valves, gate valves or butterfly valves. It is projected that branch connections and terminations will be provided with full-sized isolation valves. Terminations will include bulkheads or blind flanges suitably restrained and protected from corrosion.

5.2.5.2 Air Release Valves and Air-Vacuum Valves

Combination air vacuum relief valves are required at hydraulic high points in the distribution system. Combination air valves are located above ground, where feasible without interfering with other utilities, or otherwise in buried vaults. Combination air valves used for recycled water pipelines conform to AWWA C512 and District Standard Drawings W-11 and W-12.

5.2.5.3 Blow-offs

Unless otherwise required by the District, appropriately sized system drains or blow-offs are required at low points in the distribution system, as well as dead-end pipeline locations, to allow flushing and/or drainage of the system. Blow-offs used for recycled water pipelines conform to District Standard Drawings W-7 and W-8. Blow-offs are located close to sanitary sewers for disposal of drained recycled water. If no sanitary sewer system is available for disposal, recycled water must be hauled or used in an appropriate irrigation as permitted.

5.2.5.4 Site Retrofits

During design, site retrofits to recycled water use will be required to ensure proper customer connection without potable water system cross connection. Retrofits are completed in accordance with CDPH requirements, including evaluation of customer retrofit requirements. Retrofit of recycled water customers will be addressed at a later date, typically during design of the recycled water treatment and production facilities.

5.2.5.5 Recycled Water Pipeline Identification

Recycled water pipeline facilities must be appropriately identified in the field during construction, following the Purple Book, promulgated within the California Health and Safety Code, Water Code and Titles 22 and 17 of the California Code of Regulations. Buried pipelines require warning tape, and purple in color or sleeved in purple polyethylene sleeves depending on pipe material. Additionally, pipeline markers are required to identify recycled water facilities, as well as recycled water use within user areas, including private property.

Plastic pipe materials are typically purple-colored (Pantone 512) with the continuous wording of CAUTION: RECYCLED WATER printed on opposite sides. The pipe is installed with the wording facing upwards. Ductile iron (DI) pipe is typically sleeved according to AWWA C105. Polyethylene sleeves are purple in color, meeting recycled water pipeline labeling requirements. The poly sleeves provide color marking and corrosion protection.

Pipeline markers are typically plastic and stamped with the project description, to be identified during final design. Where markers are likely to be buried, the markers are metallic monument-type markers. Markers are placed in visible areas, such that the recycled water facility is easily identifiable. Pipeline markers are provided at appurtenance locations, at manways, at major and minor utility crossings, angle points, and approximately every 1,000 feet along the pipeline alignment.

5.2.6 Pipeline Separation Requirements

When recycled water pipelines are installed in close proximity to other utilities, cross contamination between the facilities is enhanced with proper construction and facility separation. The CDPH promulgates separation criteria for new construction, and variance requirements where new construction may have no alternative but to install facilities at a distance less than the regulated distance. In such cases, contamination risk is reduced by

increasing the structural integrity of the pipe materials and eliminating joints. Alternative construction criteria may be approved by the CDPH through permit action.

CDPH regulations require recycled water pipelines to be constructed one foot below paralleling and crossing water pipelines, and no closer than four feet measured from the outside of each pipeline barrel. Where recycled water pipelines do not meet the separation requirement, use of HDPE pipe with fusion-welded joints per AWWA C906-99 is preferred. Pipeline construction must maintain CDPH separation requirements, when possible, and alternative construction criteria may be implemented with CDPH approval.

5.2.7 Construction Staging & Pipeline Installation

5.2.7.1 Pipeline Installation

Where feasible, construction of recycled water systems is completed with open trench construction methods. Generally, construction occurs within one lane of traffic, requiring trenches between 24 and 30 inches in width, depending on the size of the pipeline. Excavation equipment straddles the trench and deposits spoil material into trucks for storage outside the roadway or stockpiled behind the open trench within the closed traffic lane.

Local traffic continues adjacent to the construction at a minimum distance of five feet from the outer edge of an open trench. Barricades between the live lanes and open trench are required. Pipe staging and fusion (when HDPE is used) occurs along the road shoulder ahead of the excavation progression. If DI or PVC piping is used, pipe joining occurs within the trench. Within more narrow roadways, fusion of HDPE pipe materials occurs directly behind or in front of the trench, requiring the pipe to be pulled into position for installation. The District standard trench detail is used to define pipe installation dimensions.

5.2.7.2 Special Construction Methods

Where open-cut construction is not feasible because of the need to avoid impact to existing waterways, large underground utilities, culverts, or bridges, trenchless construction is used. Three different methods of trenchless construction may be used at specific locations along the pipeline alignments, as noted on the plan and profile drawings (**Appendix A**). Selection of the appropriate trenchless construction technique is based primarily on length and groundwater conditions within the work area.

Auger boring, also referred to as jack and bore, uses a cutting head attached to an auger string. A steel casing pipe is simultaneously jacked into the bore hole as the auger is advanced. The auger string is lengthened through the bore to the receiving site. Each pit location is constructed with depths sufficient to maintain the desired pipe alignment. The carrier pipe is subsequently installed within the steel casing pipe.

Auger bore installations are suitable for short installations, less than 450 to 500 feet, and can only be constructed in linear alignments. If groundwater is present, auger boring will not control water and flooding of the jacking and receiving pits can occur. Other trenchless

construction methods, such as microtunneling and horizontal directional drilling, are more appropriate where groundwater is a consideration.

Microtunneling is similar to auger boring, but with a closed faced machine making it appropriate for locations where groundwater will be encountered. Microtunneling machines are remotely controlled and steerable. The tunneling machine is advanced in a similar manner to auger boring and the carrier pipe is subsequently installed within the casing pipe, or the carrier pipe is used directly with the boring machine. Lengths of 500 to 600 feet are typical.

Horizontal Directional Drilling (HDD) provides extended length of trenchless construction, as well as control of groundwater and the ability to negotiate curved paths. HDD is typically a three-step process, including:

- Pilot drilling is the initial operation, where the drill path is defined with a directionally controlled and position-monitored mud-motor drilling head. The drilling head is advanced by pushing with a surface-mounted inclined-table drill rig, using a small diameter (6- to 8-inch) segmented steel drill string. Bentonite slurry carries excavated spoils back to the entry point. The drilling process creates a drill path from the drill rig to the receiving side of the installation.

- The drill head is removed and a back-reamer is attached. The back-reamer is pulled back along the drill-path from the receiving side, allowing drill-string to span the entire drill path at all times. Spoils are retrieved from both the drill-side and the receiving side of the installation during the reaming operation. Multiple back and forward reaming operations are conducted to enlarge the drill-path up to 50 percent greater diameter than the final installed pipe or casing.

- After the bore path has been sufficiently enlarged, the pre-assembled heat-fused pressure-tested full-length carrier and/or casing pipe is pulled into and along the bore path. HDPE pipelines are filled with water to allow the pipe assembly to attain neutral buoyancy within the bentonite-filled bore hole. It is preferred to complete this operation from start to finish without stopping to avoid hydrolock of the pipe in the bore hole. After the pipe is installed, the pipe is allowed to relax and contract before trenching back to make final connections to the adjoining pipeline installed with open trench methods.

From preliminary analysis of the proposed recycled water distribution system, special construction methods are required for portions of the alignment, in particular the alignments crossing the San Luis Rey River, SDCWA Aqueduct, and State Route 76. Additional locations include busy intersections, utilities or other areas identified during the design phase. Each trenchless construction site is evaluated during design to determine the most appropriate method of trenchless construction based on length, likelihood of groundwater, and horizontal/vertical alignment.

5.2.7.3 Construction Staging

Pipeline installation using HDPE materials requires sufficient area for trench excavation and pipe fusion welding, as well as sufficient area for material storage and layout. Daily production with HDPE pipe can exceed 500 to 700 feet per day with open-trench construction in areas of limited crossing utilities. Pipeline installation using DI or PVC pipe may require less area, as pipe joining occurs within the trench.

Negotiation with private property owners is typical for storage yard placement. Pipeline staging, for the majority of the alignment, is supported within the shoulders of the alignment roadways. Upon completion of a construction shift, the Contractor is typically responsible for backfilling and/or plating open excavations, as well as cleaning, removing barricades and removing equipment from the roadway. The roadways through which the preliminary alignments traverse generally do not provide sufficient area for overnight construction equipment storage. However, the availability of open property along the alignment corridors may allow the Contractor to negotiate additional staging areas to avoid delay in moving equipment, thereby maximizing the productive hours of each work day.

Staging of materials and equipment is more critical with regard to trenchless construction, particularly with regard to HDD operations. The HDD drill rig requires a sizeable working area on the drill side of the drill path, and a slightly smaller construction area on the pipe side. The drill side contains the HDD drill rig, the drill string segments and the bentonite slurry equipment. The pipe side of the drill hole stages the carrier pipe. The carrier pipe is typically fusion welded and placed on rollers for the entire length of the HDD installation. Once the drill hole is completed, the carrier pipe is pulled into position in a single pull. It is possible to stop the pullback operation to fuse pipe segments, but only if necessary because of site constraints. With proper scheduling, staging of the carrier pipe and installation can be completed in a weekend, thereby minimizing disruption of traffic flow. Alternative routing of traffic will also be pursued to minimize traffic impacts.

5.2.8 Traffic Impacts

The recycled water distribution system will be installed primarily within existing roads and public rights-of-way. As such, traffic control is required for the majority, if not all, of the alignments. Traffic control design conforms to established local agency traffic control standards. During final design, detailed traffic control plans are prepared and used for submittal to the appropriate jurisdictional agency for review during the encroachment permit process.

Over the majority of the proposed alignments, traffic control is projected to consist of standard traffic control design, which may incorporate the use of flagging to route local traffic around the construction zone. Where possible, detours may be used to minimize the volume of local traffic.

5.2.9 Existing Utility Impacts

Preliminary utility investigation was conducted for buried and overhead utilities within the proposed preliminary recycled water alignments. A list of agencies with utilities in those alignments was obtained through the Dig Alert Website (www.digalert.org). **Table 5-3** provides a list of utility providers projected to found within the recycled water construction areas.

Table 5-3: Potential Utilities within Project Area

Utility Provider	Utility
AT&T Transmission	Cable/Fiber
AT&T Distribution	Cable/Fiber
COX Communications	Cable/Fiber
Utiliquest/Time Warner	Cable/Fiber
Level 3 Communications	Cable/Fiber
San Diego Gas & Electric	Gas & Electric
Rainbow Municipal Water	Water & Sewer
San Diego County Water Authority	Water (Aqueduct)
San Diego County	Storm Drain & Traffic Signals

6 WATER RECLAMATION FACILITY

As defined previously, Alternative No. 1 includes implementation of a District-owned Water Reclamation Facility (WRF), within the vicinity of Lift Station 2, capable of producing Title 22 recycled water for use throughout the District service area. Alternative No. 2 includes similar recycled water provided by the City's SLRWRF. The SLRWRF will be designed by the City to meet effluent quality requirements. This section discusses the preliminary design concepts for a District-owned WRF. It is noted that the water quality requirements for both recycled water supply alternatives are the same, including TDS and chlorine reduction requirements. Negotiation with the city will be required with regards to Alternative No. 2 to assure that water quality requirements are fully supported.

6.1 WRF DESIGN CRITERIA

The District-owned WRF will be designed to accommodate the following influent flow conditions, based on projected tributary wastewater volumes (**Table 6-1**):

Table 6-1: Influent Wastewater Flow Rate Design Criteria

Parameter	Units	Current	Design
Average Daily Flow (ADF) Rate	mgd	0.7	1.62
Maximum Day Flow Factor	-	1.35	1.35
Maximum Daily Flow Rate	mgd	0.95	2.19
Peak Hour Flow Factor	-	3.3	3.3
Peak Hour Flow (PHF) Rate	gpm	2.3	5.3

In addition to influent flow, wastewater strength is required for treatment plant definition. The information shown in **Table 6-2** is derived from the monthly sampling data at the Stallion Meter Station, representing 24-hour composite sampling conducted over multiple months providing accurate representation of the influent water quality. Additional quality sampling is recommended during the final design effort.

Table 6-2: Influent Wastewater Quality

Parameter	Units	Design
Biochemical Oxygen Demand (BOD), average	mg/L	170
Total Suspended Solids (TSS), average	mg/L	140
Ammonia as Nitrogen (NH3-N), average[1]	mg/L	20
Total Dissolved Solids (TDS), average	mg/L	1,000
pH	-	7.4

[1] Sampling data not available; assumed medium strength value from Wastewater Engineering: Treatment and Resource Recovery, Metcalf & Eddy, 5th edition.

The District WRF, as defined, is an inland discharge plant, requiring land disposal through irrigation and necessitating treatment to Title 22 tertiary standards suitable for unrestricted reuse. Protection of groundwater resources is promulgated in the Water Quality Control Plan for the San Diego Basin (Region 9, hereinafter referred to as Basin Plan). The Basin Plan groundwater objective for nitrate in the Lower San Luis Rey Basin is 10 mg/L as nitrogen. The anticipated effluent requirements are presented in **Table 6-3**.

Table 6-3: Projected WRF Effluent Limits

Constituent	Units	Effluents Limits	
		Monthly Average	Daily Maximum
Flow	mgd	1.62	None
BOD_5	mg/L	30	50
Suspended Solids	mg/L	30	50
Total Dissolved Solids	mg/L	500	
pH	-	6.0-9.0 at all times	
Total Coliform	MPN/100 ml	2.2	240
Turbidity Max for up to 5% of time/24 hours Max at any time	NTU	 0.2 0.5	

6.2 WRF TREATMENT PROCESS

6.2.1 Headworks

The influent lift station will consist of a self-cleaning trench-type influent lift station, with four submersible solids handling pumps (1 lead, 2 lag, 1 standby) controlled with variable frequency drives (VFDs). Coarse screenings facilities include automatically cleaned bar screens, installed in concrete channels. A screenings washer-compactor and overflow bypass channel with manual bar rack is also provided. Vortex type grit chambers are recommended because of lower energy requirements and smaller footprint. Screened wastewater is conveyed by gravity through the grit removal system, consisting of one 10-foot diameter concrete vortex style grit removal chamber, 250-gpm grit pump, and grit classifier. A bypass pipeline is provided for grit chamber cleaning and repair events.

The influent lift station, coarse screen, and grit chamber are recommended to be constructed to accommodate the ultimate design peak hour rate of 5.3 mgd. The lift station wet well, coarse screen, grit chamber and connecting channels are covered with odor control panels and connected to the odor control system. Screening and grit equipment are constructed of 316 stainless steel. Wetted concrete surfaces are either PVC-lined or coated with epoxy or polyurethane to protect against corrosion.

6.2.2 Influent Equalization

Influent equalization reduces peak hydraulic loading, thereby allowing downstream equipment (fine screens, MBR system, disinfection, and recycled water facilities) to be sized for maximum month flow rates instead of the peak flow rates. Additionally, an equalized influent flow simplifies process control and improves process efficiency in downstream facilities. Six hours of storage volume is typically required to adequately equalize influent flow. Three concrete influent equalization tanks are projected, providing a combined equalization volume of 405,000 gallons.

Two 840 actual cubic feet per minute (acfm) positive displacement blowers (1 duty/1 standby) supply air to each tank through coarse bubble diffusers to keep the contents aerated. The tanks have removable odor covers and water cannon-monitors to facilitate tank wash down. The tanks are connected to the foul air ducting and headwork odor control system sized for 10 percent higher flowrate than the diffused aeration rate to ensure the tanks maintain a negative headspace pressure.

Three submersible solids handling pumps (1 lead, 1 lag, 1 standby) are required in the wet well (sump) common to each equalization tank. These pumps, controlled by VFDs, maintain a constant flow rate with a fluctuating equalization basin water level. The influent equalization pump station is sized to handle an array of tributary flow, up to the design maximum month flow of 2.19 mgd. The concrete equalization tank is PVC-lined for corrosion protection.

6.2.3 Fine Screenings

The WRF design is based on use of membrane bioreactor (MBR) technology to facilitate recycled water production. The sensitivity of submerged MBR units to hair and stringy fibrous materials require that fine screens be installed. Fine screens use 2-mm or 3-mm perforated plates to assure adequate membrane protection. The influent equalization pump station will; convey water to two 2-mm drum screens (1 duty/1 standby). Screened wastewater is conveyed by gravity to the MBR units. The fine screens are sized to handle flow up to the design maximum month flow of 2.19 mgd.

6.2.4 Biological Treatment and Filtration

Conventional biological treatment and tertiary filtration typically consists of aeration basins, secondary clarifiers, rapid mixers, flocculation tanks, and sand or cloth filters. Alternatively, membrane bioreactors (MBRs) combine these processes within the aeration basins and submerged membrane filtration tanks. **Table 6-4** identifies the advantages and disadvantages of MBR use, as compared to conventional treatment systems.

Table 6-4: Membrane Bioreactor Comparison to Conventional Treatment System

Criteria	MBR	Conventional	Comments
Footprint Requirements	✓		Higher MLSS leads to smaller aeration tank. Membrane eliminates the need for large clarifier and tertiary filters
Effluent Water Quality	✓		Membrane provides ultimate barrier, with effluent TSS = 0 by definition, and effluent turbidities an order of magnitude less than conventional tertiary filters
Robustness	✓		Settleability issues with microorganisms are not a concern.
Maintenance Requirements	✓		Minimal requirements and highly automated system
Operational Flexibility	✓		MBR process can operate in wide range of SRT; high MLSS allows flexibility in wasting schedule; highly automated; modular
Operational Energy Requirements		✓	Additional air demand for membrane scouring
Capital Cost		✓	Membrane equipment costs are significant and require replacement every 7-10 years
Future reverse osmosis implementation	✓		Membrane filtration used as pretreatment for reverse osmosis

MBR implementation is becoming more prevalent in the wastewater industry with increasing need for high quality effluent supporting the production of recycled water. An MBR system is recommended for this project despite higher capital cost, to meet recycled water production needs and the need for demineralization to meet recycled water customer requirements.

Most MBR manufacturers use proprietary design specifications that are packaged as a complete system. This fact allows prequalification of various manufacturers and systems, and selection of an evaluated optimum system. Key evaluation criteria for an optimized MBR package include: complete treatment plant installed cost; time of delivery from order; energy optimization; simplicity of system; ease of maintenance and operation; cost of maintenance and operation; customer support; reliable nitrogen removal; among other factors.

The MBR configuration included in these conceptual plans includes below-grade cast-in-place concrete tanks, compartmentalized into anoxic and aerobic zones for biological nitrification / denitrification. Submersible pumps in the anoxic basins recirculate into the aeration basins and activated sludge mixed liquor is conveyed by gravity into the membrane filtration tank at the end of the basin. Permeate pumps draw filtered effluent from the membranes, while mixed liquor in the membrane tanks flows by gravity back to the anoxic basins. Separate blowers are provided for aeration and air scour. Blowers and permeate pumps are installed inside a building.

6.2.5 Chlorine Contact Tanks

Two chlorine contact tanks (1 duty/ 1 standby) are required to accommodate the maximum month flow of 2.19 mgd. A design hydraulic residence time of 120 minutes is needed to provide a minimum contact time of 90 minutes. The length to width ratio of each basin is 40:1, and basin depth is 10 feet to reduce the effects of wind-driven mixing.

The chlorine dosing system delivers 25 mg/L chlorine from a sodium hypochlorite storage tank. The sodium hypochlorite dose rate is based on an assumed 20 mg/L chlorine demand with an assumed 5 mg/L chlorine residual. Stock sodium hypochlorite (12.5 percent available chlorine) is dosed at a rate of 15 gallon per hour for maximum day flow of 2.19 mgd. An 8,000-gallon storage tank (available storage volume) holds approximately 22 days of sodium hypochlorite at maximum day flow. Duty/standby chemical feed pump skids dose chemical based on membrane permeate flow rates.

6.2.6 Reverse Osmosis Demineralization

Partial demineralization of the recycled water is required for irrigation water quality requirements (Section 4). Typical agricultural products grown in the District service area are particularly sensitive to salt. Application of low salinity recycled water increases crop yield and improves local groundwater quality. Producing recycled water with lower salinity benefits local growers and reduces the buildup of scale in the recycled water distribution system.

A reverse osmosis (RO) demineralization system is used to reduce the salinity of the recycled water. A portion of the MBR effluent is treated by the RO system. RO permeate is blended with the remaining portion of MBR effluent to achieve a lower recycled water total dissolved solids (TDS) concentration. Blending volumes and ratios are determined during final design of the system, with ratios of 0 to 2 being typical, as defined in recent EGAP studies.

This evaluation investigates three levels of recycled water salinity reduction based on the recycled water quality requirements of identified District customers. The projected effluent quality of the MBR process at 1,000 mg/L TDS, with salinity reduction to 900 mg/L, 750 mg/L, and 600 mg/L. Greater salinity reduction requires a larger fraction of the MBR effluent to be treated by RO and blended with treated effluent, with corresponding larger volume of brine production. The three conceptual RO system sizes accommodate the three identified salinity reduction requirements at average day flow, based on the user type quality requirements.

In each of the salinity reduction scenarios, three independent RO skids, two on-line and one standby receive treated MBR effluent. Each skid contains a three-stage RO system operating at 92 percent recovery at 150 psi. The addition of anti-scale treatments and a third RO stage allows for high recovery and reduced brine volume. Preliminary RO model results for the three salinity reduction scenarios are shown in **Table 6-5**.

Table 6-5: Reverse Osmosis System Treatment Level Comparison

Recycled Water TDS (mg/L)	Flow Treated by RO (mgd)	Annual RO Power Costs ($/yr)	RO Equipment Costs ($)[1]
900	0.18	$9,000	$190,000
750	0.44	$30,000	$470,000
600	0.70	$48,000	$760,000

[1] *Includes cost of installation*

Reducing recycled water salinity from 1,000 mg/L down to 600 mg/L requires approximately 485 gpm of the 1,100 gpm average day flow to be treated by RO (54 percent of 1.6 mgd). Reducing recycled water salinity to 750 mg/L or 900 mg/L requires 300 gpm or 125 gpm to be treated, respectively. Pump sizing increases as flow to the RO systems increases, with two on-line and one standby pumping units ranging in size from 7.5 to 35 hp. The resultant estimated annual power costs for these RO pumps range between $9,000 and $48,000. Capital and O&M costs for the alternative systems assume salinity reduction to 600 mg/L.

6.2.7 Brine Disposal Pipeline

Brine handling and disposal are major design considerations. The RO system generates approximately 14,000 to 70,000 gpd of brine, depending on the salinity reduction. Trucking brine offsite for disposal is infeasible at these volumes, as it would require multiple 5,000-gallon tanker trucks per day to haul brine. At an estimated $0.09/gal hauled, the annual brine hauling cost ranges from $500,000 to $2,600,000.

Construction of a new brine disposal pipeline, approximately 7.0 miles in length, from the WRF to the City's land and ocean outfall is recommended. A minimum 6-inch diameter HDPE pipeline provides sufficient hydraulic capacity and facilitates pipeline cleaning. The alignment and profile of the brine disposal pipeline has not been determined under this study, but is anticipated to follow the alignment of the District gravity sewer and force main downstream of Lift Station No. 2. A pump station is required to convey brine over the hill between Old River Road and North River Road, and the brine pipeline would be a gravity pressure pipeline to assure brine conveyance security. Annual cost to pump brine is anticipated to range from $9,000 to $45,000. Construction costs for the pipeline, including permitting, are anticipated to be approximately $3,500,000.

It is noted that the District recently investigated groundwater recovery within its service area, that facility also requires construction of a brine disposal pipeline to the City's ocean outfall. The two projects would use the same brine alignment and the pipe size would be sufficient to accommodate both facilities. In this manner, the cost is shared over multiple projects. Furthermore, as regional partnerships may be formed for brine disposal, the brine pipeline may best be sized to serve more than the District uses, therefore spreading the cost over multiple agencies.

6.2.8 Recycled Water Pump Station

Disinfected tertiary recycled water flows from the chlorine contact tanks into the recycled water pump station wet well. Three vertical turbine pumps (1 lead, 1 lag, 1 standby) are projected to convey recycled water to the distribution system. The pump speeds are controlled with VFDs to match demand in the chlorine contact tanks by maintaining water level set points in the wet well. The pump station is sized for to handle flows up to the design maximum month flow of 2.19 mgd.

6.2.9 Emergency/Off-Spec 24-Hour Storage

Emergency (off-specification) water storage is used to store membrane permeate in the event of an alarm for high membrane permeate turbidity or low recycled water chlorine residual. Site piping is designed to provide for a high overflow from raw wastewater emergency storage, exceeding the basic six hours provided in the influent equalization tank. Provisions for pumping the off-spec water to the influent equalization tank are provided. Emergency storage provides 24 hours of storage at average day flow, equating to 1,620,000 gallons. The tank is of concrete construction.

6.2.10 Aerobic Digestion

The aerobic digester is designed to accept, hold, and reduce the volume of waste activated sludge (WAS) from the MBR system. A single duty 320,000-gallon aerobic digester is used. Activated sludge from the MBR system (1.2 percent solids) is wasted to the digester at a rate of 1,875 pounds per day. The volatile solids content of the WAS is 75 percent. Conservative design parameters are chosen (e.g., temperature, time, decay rates) to size the digester with ample capacity to produce Class B biosolids. Digested solids are allowed to settle before being withdrawn from the digester at a concentration of approximately 1.5 percent.

Diffused air is used to provide dissolved oxygen and mixing energy to the digester. Approximately 1,000 cubic foot per minute (cfm) of air is required to provide 2 mg/L dissolved oxygen with 40 percent volatile solids reduction. The mixing requirements for the digesters range between 20 and 40 cfm per 1,000 cubic feet of tank volume. Using the conservative 40 cfm/1,000 cubic feet design parameter, the required air flow for mixing is approximately 1,700 cfm. Mixing requirements, therefore, dictate the air flow demand to the digester. Two (1 duty/1 standby) 1,700 cfm capacity positive displacement blowers are required.

6.2.11 Biosolids Dewatering

Biosolids (sludge) are conveyed to dewatering facilities, where polymer is added prior to dewatering. Both centrifuges and screw presses are available for further evaluation during final design. Centrifuges have higher energy consumption and typically produce dryer solids, corresponding to lower disposal cost. Screw presses run at slow speeds and have lower energy consumption, but have higher disposal cost from the higher water content in the sludge cake.

The conceptual analysis assumes the use of a centrifuge system. The digester wastes 5,220 pounds per week. The centrifuge is sized to operate 12 hours per week corresponding to a feed rate of 34 gpm at 1.5 percent solids. Dewatered cake is discharged to a screw conveyor and conveyed to a roll-off dumpster for disposal. Dewatering equipment, polymer dosing system, sludge feed pump, and conveyor are installed inside of a dewatering building. The building houses a roll-off dumpster bin and is accessed through a roll-up door.

6.2.12 Odor Control

Foul air from the WRF headworks and influent equalization tank is treated with one odor scrubber system (Scrubber 1). Foul air from the sludge dewatering equipment and bin storage room is treated by a separate odor scrubber system (Scrubber 2). Biological scrubbers are recommended where consistent loading is expected, as they will provide low operation/chemical cost. Each scrubber is a two-stage system with a biological trickling system phase and a carbon media polishing phase to handle peak air rates. Design flow rates are projected to be 1,020 cfm for Scrubber 1 and 1,500 cfm for Scrubber 2. Each scrubber is a packaged skid-mounted system including the scrubber tower, sump, pumps, control panel, piping and fan.

6.3 WRF SITE DESIGN

The exact site location of the proposed WRF is not determined at this time, but is intended to be within close proximity to Lift Station 2. No District-owned property exists near the vicinity of Lift Station 2, with the adjacent properties including several three- to six-acre residential lots and various 40-acre agricultural parcels. The site layout shown herein is located adjacent to and south east of Lift Station 2 (APN 12617086). The WRF site requires approximately two acres of land. The site layout is provided as an example of the typical plant configuration. As Lift Station 2 is located adjacent to the San Luis Rey River, the following considerations must be addressed during final design: flood plain limitations, loose alluvium soil requiring over excavation and/or deep foundations, and high groundwater considerations. The conceptual layout of a District-owned WRF, using MBR technology, is illustrated on **Figure 6-1**. The hydraulic profile and process flow diagram for the WRF are shown in **Figure 6-2**.

6.4 WRF PHASING RECOMMENDATION

Phasing of any recycled water facility considers the current flows tributary to the plant site, ultimate flow to the plant site, and the relative time over which those flows may change. As discussed, the flow tributary to Lift Station 2 is approximately 0.7 mgd. The ultimate tributary flow is projected to be 1.6 mgd. Typically, treatment facilities begin planning for expansion when the influent flow reaches 75 to 80 percent of the design capacity.

For the District facility, constructing the WRF in two equally sized phases of 0.8 mgd each is not ideal as the facility would likely need to be expanded shortly after construction. For smaller facilities, constructing multiple smaller units necessary for phasing is less practical and may result in higher overall capital and operating cost. An interim phase of two-thirds of the full capacity (1.08 mgd) could be considered for some process units, such as the aeration tanks and influent equalization tanks. However, this construction is projected to provide only an approximate 10 to 15 percent savings over the cost for construction of a full-capacity facility. For the purposes of this analysis, the WRF for Alternative No. 1 is not considered to be constructed in phases.

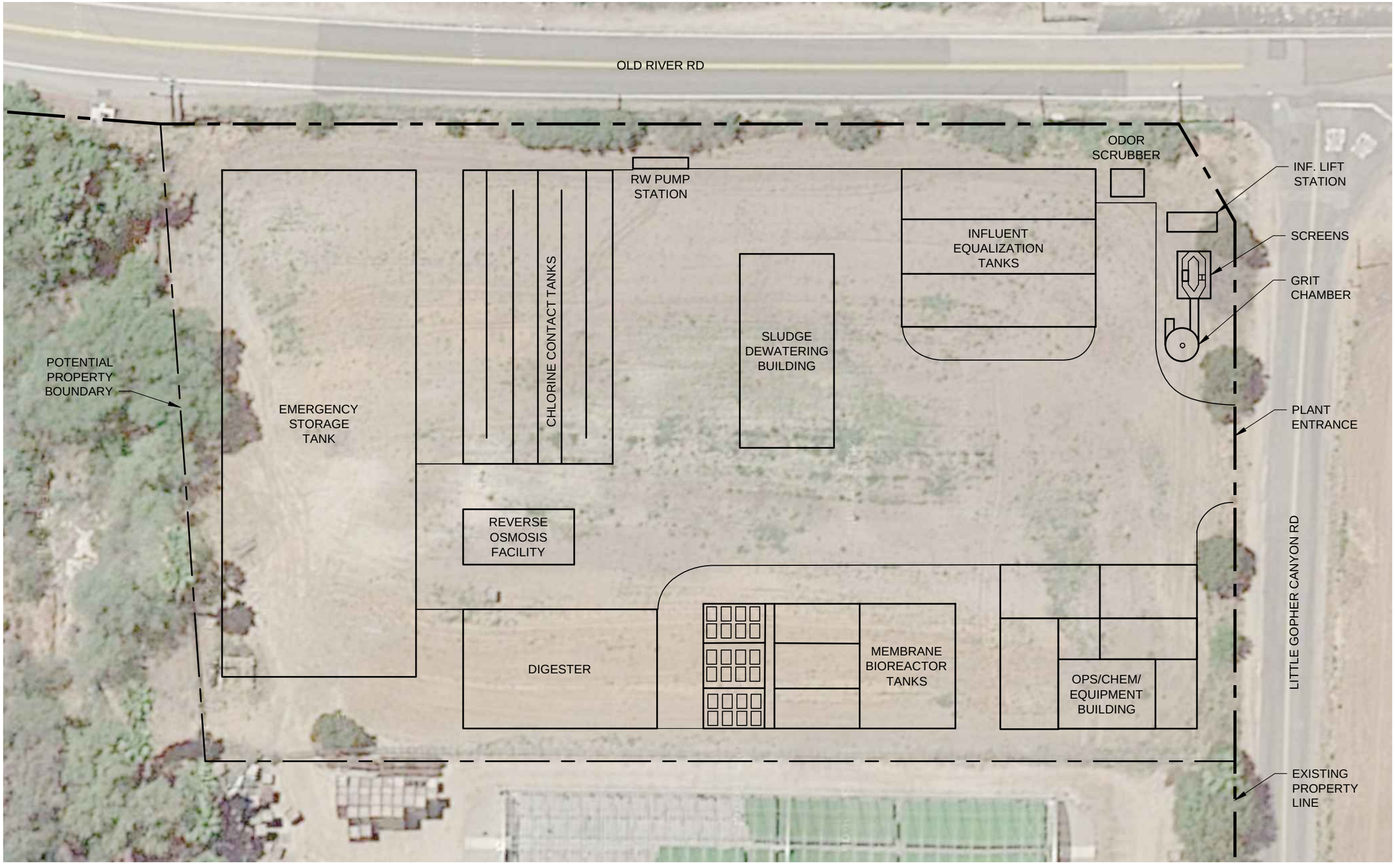


FIGURE 6–1

WATER RECLAMATION FACILITY
CONCEPTUAL PLAN

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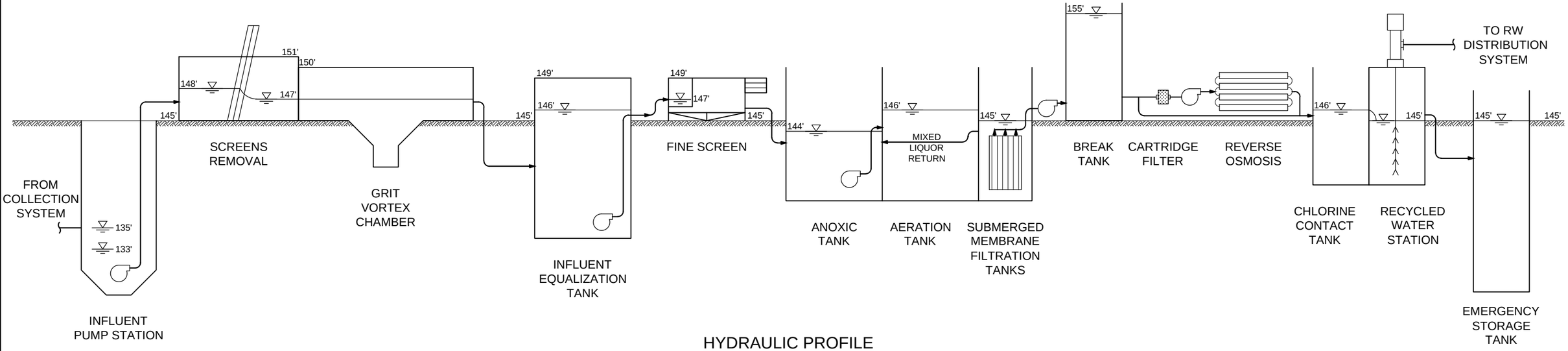
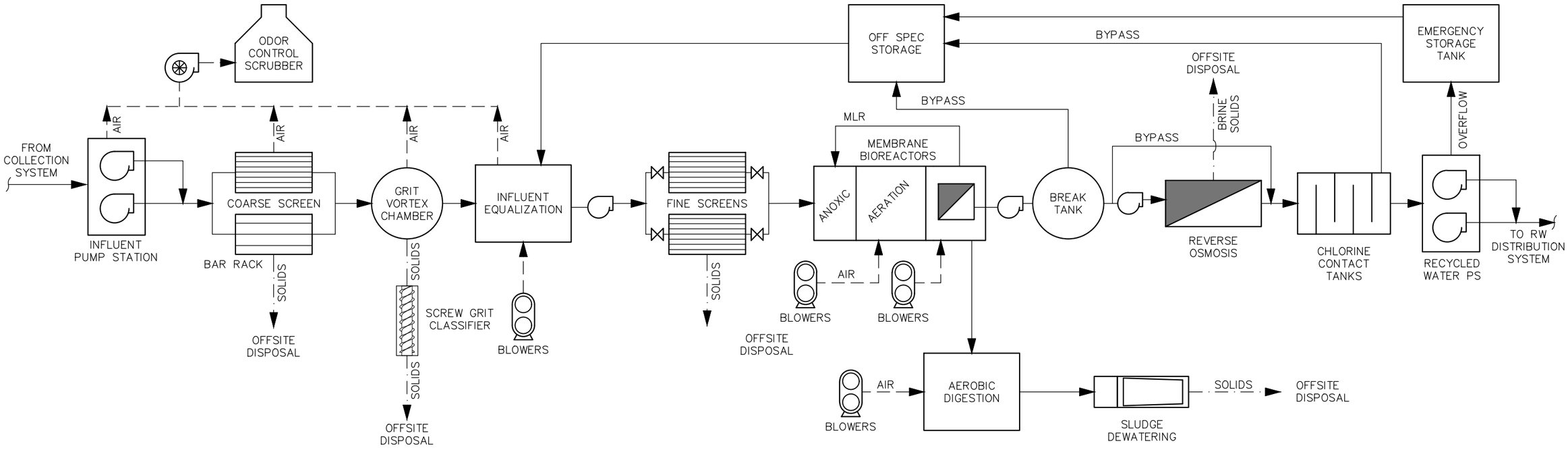


HYDRAULIC PROFILE



PROCESS FLOW DIAGRAM

FIGURE 6–2

HYDRAULIC PROFILE
PROCESS FLOW DIAGRAM

DUDEK

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7 WASTEWATER SYSTEM UPGRADES

As discussed in earlier sections, the premise of Alternative No. 2 includes continuing to convey wastewater to the SLRWRF for treatment, solids handling and disposal, as well as recycled water production and conveyance. The alternative requires significant upgrades to portions of the District's existing wastewater conveyance system, specifically the portion between Lift Station 2 and the Stallion Metering Station. The required improvements increase the capacity of the existing collection system to accommodate increased future flows. As an alternative, the Dudek investigated construction of a flow equalization basin in the vicinity of Lift Station 2. Both alternatives are discussed in the sections below.

7.1 EXISTING COLLECTION SYSTEM

The portion of the District's collection system that conveys wastewater west from Lift Station 2 to the Stallion Metering Station is identified as the District's Wastewater Outfall, and was constructed in 1972. The Wastewater Outfall consists of approximately 3,000 linear feet of 12-inch, 14-inch, and 18-inch diameter force main, as well as approximately 16,000 linear feet of 15-inch gravity sewer. The facilities are approaching the end of their useful life. A recent closed circuit television (CCTV) inspection concluded that significant portions of the Wastewater Outfall are in poor condition, exhibiting cracking and sagging in the vertical alignment.

7.2 WASTEWATER OUTFALL REPLACEMENT

The District recently completed investigation of various alternatives to increase the capacity of and repair the existing Wastewater Outfall. The recommended project includes construction of a new 18-inch diameter force main, rehabilitating the existing gravity main, and modifying Lift Station 2. The projected costs for replacement of the Wastewater Outfall are included in the analysis of Alternative No. 2 (without the equalization basin) as provided in Section 9. Review of the project cost from the previous study was provided, with minimal reduction in the identified cost.

7.3 EQUALIZATION BASIN CONCEPT

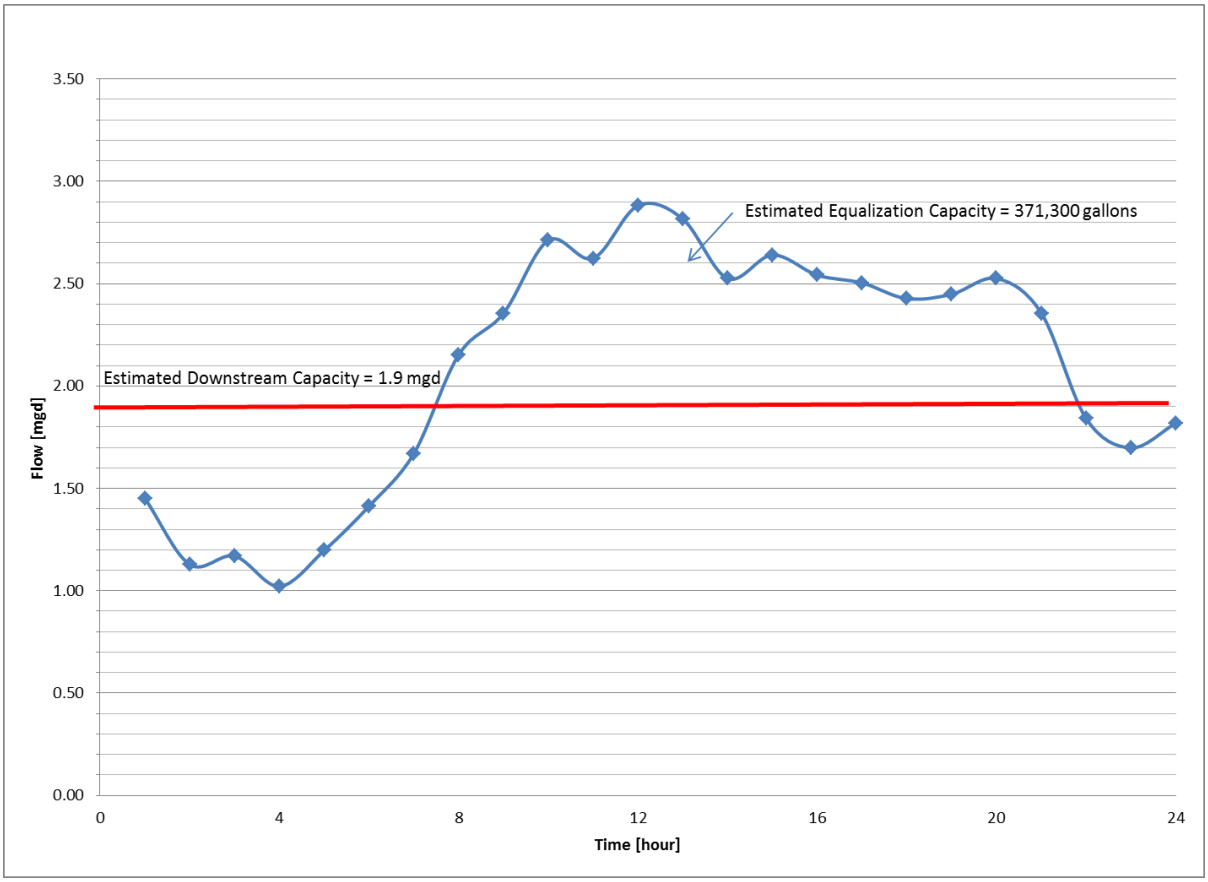
The maximum capacity of the existing Wastewater Outfall is 1.9 mgd, as calculated by analyzing the different pipeline segments of the existing Wastewater Outfall and their corresponding diameters and slopes at a maximum d/D of 0.85 to avoid surcharging. The District's recent wastewater master plan update estimated future flow rates to exceed the maximum capacity of the existing Wastewater Outfall. One option to alleviate this challenge is to construct an equalization basin, to be located in the vicinity of Lift Station 2. Such a facility would eliminate the need to increase the existing Wastewater Outfall capacity. The equalization basin limits flow to less than 1.9 mgd and avoids surcharge of the Wastewater Outfall. This option, however, does not address existing pipeline condition challenges.

In defining an appropriate equalization basin, the diurnal wastewater flow was derived from the January 2016 Rainbow Water and Wastewater Master Plan Update, along with recent flow

metering data from the Stallion Metering Station. In addition, the master plan was used to determine the projected infiltration and inflow (I/I) of the sewer system and found to be approximately 0.16 mgd. Furthermore, the analysis considers the additional flow rate of 0.3 mgd for the proposed Warner Ranch development. The derived tributary flow was combined with the diurnal curve data to compute the maximum flow rate projected within the collection system. The average daily flow of the final diurnal curve is calculated to be 2.08 mgd.

The storage volume required for the proposed equalization basin to control downstream flow to below 1.9 mgd is illustrated by the area beneath the diurnal curve (blue line) and the maximum Wastewater Outfall capacity (red line) of 1.9 mgd (**Figure 7-1**). The storage volume calculates to approximately 371,300 gallons.

Figure 7-1: Equalization Basin Sizing Concept



The equalization basin is proposed to consist of three separate basins, allowing two basins to handle the required storage and one basin to be out of service for cleaning. The equalization basins are envisioned to be located southeast of the intersection of Little Gopher Canyon Road and Old River Road, in the vicinity of Lift Station 2. Dimensions and materials of the equalization basin will be finalized during design. For this analysis, it is assumed that the three basins are reinforced concrete, sloped at the bottom, each with inner dimensions of 140 feet long by 20 feet wide and 20 feet deep.

This alternative requires installation of a new junction box and a new manhole in Little Gopher Canyon Road to combine flows from the existing manhole near Lift Station 2 (MH 2 on Figure 7-1) and flows from the sewer in Little Gopher Canyon Road before equalization. The new manhole in Little Gopher Canyon Road would incorporate slide gates to allow for bypassing of the equalization basins with flows conveyed directly to Lift Station 2.

Operation of the equalization basin will require that each basin be hydraulically connected to the Lift Station 2 wet well, thereby allowing Lift Station 2 to fully dewater the equalization tank. The operating storage depth of the Lift Station 2 wet well is approximately 9 feet. As such, the equalization basin storage depth will also be 9 feet, but at a slightly higher elevation to account for headloss in the connecting pipe. The preliminary concept for the equalization basin is shown on **Figure 7-2,** with a corresponding hydraulic profile shown in **Figure 7-3**.

Figure 7-2: Equalization Basin Concept Layout

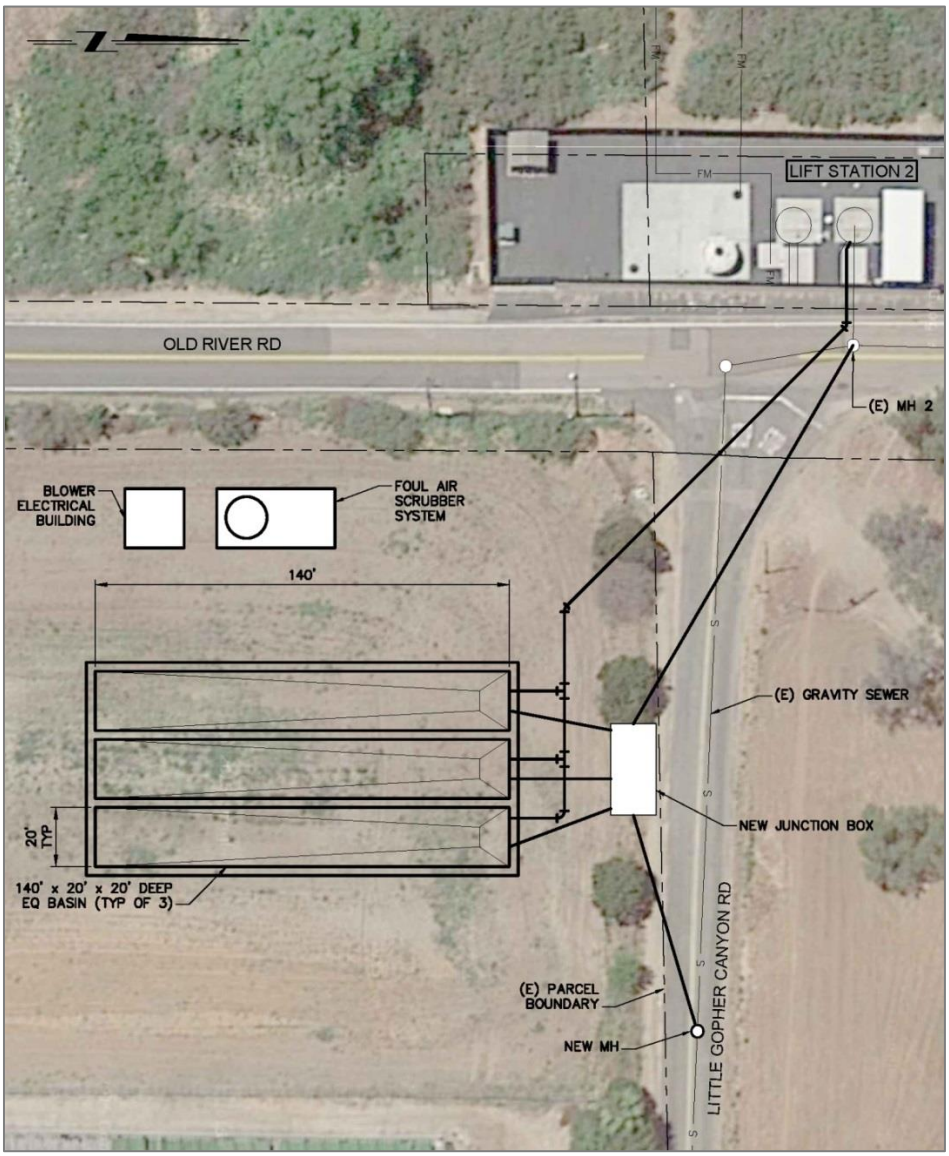
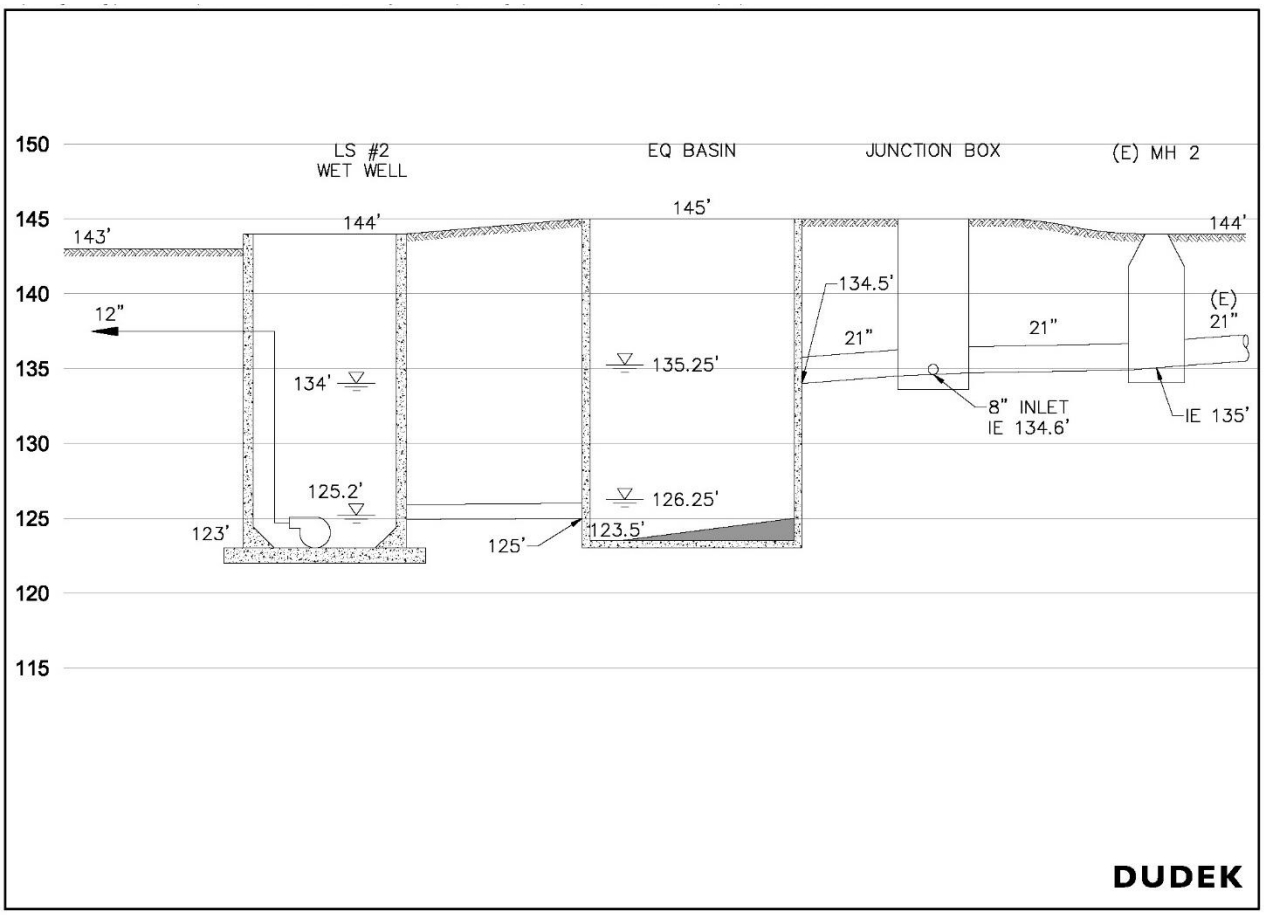


Figure 7-3: Equalization Basin Concept Hydraulic Profile



Significant considerations would be required during design of the equalization basin including the water level in the basin and the needs associated with cleaning the basin. The equalization basin would be a potential source of odor, and as such will require aeration (diffusers and blowers) to prevent septic conditions. Other considerations include the inlet and outlet piping, removable odor control covers, odor control scrubber system and foul air piping, as well as electrical and instrumentation associated with the basin. The District would also need to acquire land within the vicinity of Lift Station 2 to construct the equalization basin.

The exact site location of the proposed equalization basin is not identified for this analysis. The site shown in the conceptual plan above is south east of Lift Station 2, located within an existing 25-acre parcel. This illustration is an example representation of the potential site layout. In addition, as Lift Station 2 and the potential equalization basin are located adjacent to the San Luis Rey River, the following considerations will require considered in selection of the equalization basin site:

- Flood plain limitations
- Loose alluvium soils requiring over excavation and/or deep foundations
- High groundwater Impacts
- Proximity to Lift Station 2

8 ENVIRONMENTAL REQUIREMENTS

This section describes the recommended CEQA documentation, the reasoning behind the recommendation, and environmental permitting requirements. Compliance with CEQA occurs through two methods: (1) separate Negative Declarations or Mitigated Negative Declarations (MNDs) for each individual recommended project, or (2) completion of a program-level Environmental Impact Report for recommended projects, with tiering to supplemental CEQA analysis for individual projects, as necessary.

Based on the above assumptions and other known information of the alternatives described herein, Dudek recommends that an MND be prepared for the chosen alternative. The District is the lead agency responsible for the review and approval of the chosen alternative. As provided for by CEQA Section 21064.5, an MND may be prepared for a project subject to CEQA when an Initial Study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed Negative Declaration and Initial Study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur; and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment. In other words, preparation of an MND assumes that any potentially significant impact would be able to be mitigated to a less than significant level.

As our recommendation assumes that an MND would be prepared for the chosen alternative, draft project objectives have not been prepared, as they are not required for an MND per CEQA Guidelines Section 15071. Project objectives are required to be disclosed only in an EIR. However, for the purposes of discussion, draft project objectives, pending the chosen alternative, may include:

1. Provide a new recycled water source for the existing, planned, and projected demand within the District service area

2. Increase the District water supply independence by creating a new and beneficial local source of recycled water for irrigation

3. Create opportunities for economic benefit through reducing reliance on outside agency systems, introducing recycled water sales, and lowering operational costs

For both alternatives, the environmental issue areas of concern include, but are not limited to: biological resources, noise, hydrology and water quality, cultural resources, public services, and transportation. The following discussion assumes that potentially significant impacts are mitigated to a less than significant level and an MND is prepared. Note that the District may elect to pursue preparing an EIR for the chosen alternative. Reasons for pursuing an EIR may include potentially significant impacts that cannot be avoided or mitigated, and/or the anticipation of public controversy.

Additionally, it is understood that the District would most likely be pursuing federal funding from the Proposition 1 Water Recycling Funding Program (WRFP) and potentially State Revolving Fund (SRF) loans for the chosen alternative. These funding sources are partially funded by the U.S. Environmental Protection Agency. Therefore, projects seeking these funding resources are subject to federal environmental regulations, including the National Environmental Policy Act (NEPA). The WRFP and SRF funding programs require that projects undergo "CEQA-Plus" evaluations to comply with federal environmental regulations. Should the District decide to pursue WRFP funding or SRF funding for the chosen alternative, CEQA-Plus documentation consistent with State Water Resource Control Board (SWRCB) requirements would need to be prepared in conjunction with CEQA documentation. CEQA-Plus focuses on federal environmental issue areas including: cultural resources (National Historic Preservation Act Section 106), air quality (Clean Air Act), and biological resources (endangered species, Migratory Bird Treaty Act), Coastal Zone Management Act, Farmland Protection Policy Act, Floodplain Management, and Wild and Scenic Rivers Act.

8.1 ALTERNATIVE NO. 1 REQUIREMENTS

Alternative No. 1 would include a new, district-owned wastewater reclamation facility located in the vicinity of Lift Station 2. As the proposed facility would likely extend beyond the existing developed area of Lift Station 2, it may impact the adjacent riparian habitat within the San Luis Rey River floodplain. If these impacts occur, Clean Water Act Section 404 permits, Clean Water Act Section 401 permits, and Fish and Game Code Section 1602 permits (404/401/1602 permits) and associated focused surveys for sensitive wildlife species will apply, such as least Bell's vireo and arroyo toad (also in support of a Biological Resources Technical Report). Other potential impacts associated with the siting of the wastewater reclamation facility include visual effects, air quality (operational emissions and odors), flooding hazards, noise, and traffic generation. If the WRF is constructed outside the San Luis Rey floodplain, then fewer requirements would apply.

Under the assumption that the majority of the proposed recycled water pipeline distribution system is located within existing roadways and the proposed booster pump station is located in a previously disturbed/developed area, many potential impacts would likely be avoided.

Potential direct permanent and temporary impacts to biological resources would have the largest potential effect on cost, schedule, and overall CEQA approach. As stated previously, assuming use of trenchless construction methods that avoid direct impacts to riparian/jurisdictional resources (including San Luis Rey River and associated tributaries and culverts within roadways), 404/401/1602 permits would likely not be necessary. It is important to note that culverts that may be located within roadways can be considered jurisdictional resources. If riparian/jurisdictional resources are affected, and assuming relatively minor temporary impacts at certain crossings, then 404/401/1602 permits would be required. The 404 permit may require Endangered Species Act Section 7 consultation with U.S. Fish and Wildlife Service and National Historic Preservation Act Section 106 consultation with the State Historic Preservation Officer.

Other impacts resulting from this alternative would likely be limited to the construction phase. Construction of this alternative would likely result in temporary impacts related to biological resources (adjacency to sensitive wildlife, such as the California Coastal Gnatcatcher), noise (adjacency to noise sensitive land uses), cultural resources (excavation in previously undisturbed soils in culturally sensitive areas), and public services and transportation (temporary encroachment into public right-of-ways). It is likely that these impacts would be mitigated with various construction measures such as wildlife surveys, noise reduction measures, construction monitoring, and traffic control plans.

In support of the MND, required technical studies will likely include:

- Air Quality and Greenhouse Gas Emissions Report: this report would include criteria pollutant and greenhouse gas emissions modeling for the construction and operational phases and analysis relative to significance thresholds
- Biological Resources Technical Report: this report would include literature review, surveys, and analysis of potential effects to biological resources for the construction and operational phases
- Noise Technical Report: this report would include construction and operational noise modeling and analysis relative to applicable noise ordinances
- Phase I Archaeological Survey: this report would include a records search, pedestrian survey, and analysis of potential cultural resource significance.

While not required for the preparation of the MND, a Salt and Nutrient Management Plan may be required in the future to assess salt and nutrient loads of the recycled water. The assumptions and recommendations presented herein do not account for the preparation of a Salt and Nutrient Management Plan.

8.2 ALTERNATIVE NO. 2 REQUIREMENTS

Alternative No. 2 would be similar to that of Alternative No. 1, described above, but without the additional requirements posed by construction of a WRF. Similar supporting technical studies required of Alternative No. 1 would likely be required for Alternative No. 2.

8.3 AGENCY REVIEW AND PERMITTING REQUIREMENTS

A list of permits, agreements, or approvals that may be required by various affected cities, counties and agencies is provided in **Table 8-1** below. It should be noted, that the cost to obtain permits is highly variable and will be based on the result of the studies described in the previous sections.

Table 8-1: Permitting Requirements

Permit	Permitting Agency	Estimated Cost
Encroachment Permit	County of San Diego	$50,000
Encroachment Permit	San Diego County Water Authority	$15,000
401 Water Quality Certification	Regional Water Quality Control Board	$50,000
Section 404/Section 408	Army Corps of Engineers	$50,000
Streambed Alteration Agreement	California Department of Fish & Wildlife	$50,000
Drainage Easement Encroachment Permit	County of San Diego	$25,000
Project Review	California Department of Public Health	$5,000
General Permit for Discharges of Stormwater Associated with Construction	Regional Water Quality Control Board	$50,000
Underground Classification	Cal-OSHA	$5,000

9 PRELIMINARY OPINION OF PROBABLE COST

The following opinion of probable construction cost (cost opinion) serves to establish the order of magnitude cost for the subject project alternatives. The cost opinion is based on the quantities and unit price models developed from the preliminary design concepts and drawings (**Appendix A**), quotations from general contractors, vendor quotes, and existing site conditions. In addition, a project complexity factor is incorporated into the unit price to adjust for projected difficulties based on the construction site and work conditions. The complete cost opinion is included in **Appendix B**.

9.1 COST OPINION METHODOLOGY AND ASSUMPTIONS

For the purposes of this analysis, the cost opinion is considered to be a Class 4 Construction Cost Opinion, based on the preliminary design effort. The detail that has been incorporated into this cost opinion may represent a higher degree of accuracy than Class 4, yet is based on preliminary design efforts.

This cost opinion includes direct labor costs, bulk purchased materials, and construction equipment, as defined by the preliminary design, required for projected construction efforts, or provided on equipment data sheets. As this cost opinion is based on a preliminary design, cost opinions incorporate specific assumptions as to the means and methods predicted to be utilized during the construction process. Furthermore, the cost opinion incorporates the results of previous bid results from similar work completed on similar projects. Significant contingency factors are incorporated into this Class 4 cost opinion, consistent with Class 4 analysis standards.

9.2 OPINION OF PROBABLE CAPITAL COST

Based on the preliminary design, the opinion of probable capital cost for Alternative No. 1 is approximately $62.1M. The opinion of probable capital cost for Alternative No. 2 is approximately $56.2M. It is noted that these costs are calculated assuming that, for Alternative No. 1, the District recovers a portion of its investment in the SLRWRF for approximately $5 per gallon of capacity, resulting in a one-time recovery of $7,5000,000. It is currently unknown whether the District will recover any costs from the City for participation in the SLRWRF under the current agreement. Therefore, the capital costs were also calculated assuming the District does not recover participation in the SLRWRF. Accordingly, Alternative No. 2 capital costs remain the same and Alternative No. 1 costs increase to $72.5M under this alternate scenario. Capital costs for both alternatives are summarized in **Table 9-1** below.

Table 9-1: Capital Cost Summary

SLRWRF Sell Back Scenario	Alternative No. 1 – MBR WRF at LS2; Recycled Water from District WRF	Alternative No. 2a – Recycled Water from Oceanside; Upgrades to District WW System	Alternative No. 2b – Recycled Water from Oceanside; District EQ Basin Upgrades
$5 / gallon Recovery of SLRWRF System Capacity	$62,084,000	$56,166,000	$50,813,000
$0 / gallon Recovery of SLRWRF System Capacity	$72,546,000	$56,166,000	$50,813,000

9.3 OPINION OF PROBABLE ANNUAL COST

The District, in addition to the cost to construct the required facilities, is responsible for annual operation and maintenance (O&M) and replacement of the various facilities under each alternative. Operating costs for the proposed alternatives include energy and O&M costs for conveyance and pumping, as well as for annual treatment costs. The O&M costs are based on typical cost metrics from literature and previous projects. Energy costs are estimated using a unit price of $0.11 per kWh. Escalation of capital costs is included and estimated at 2.5 percent per year. Present Worth analyses are calculated at an assumed 3.5 percent annual interest rate over 30 years.

The Annual Cost of Alternative No. 1 is $2.5M per year. The Present Worth of the annual cost for Alternative No. 1 is $62.5M. Therefore, the Total Present Worth of Alternative No. 1, including capital costs, is estimated to be $124.6M.

The Annual Cost of Alternative No. 2 is $3.5M per year. The Present Worth of the annual cost for Alternative No. 2 is $89.4M. Therefore, the Total Present Worth of Alternative No. 2, including capital costs, is estimated to be $145.5M.

Annual costs and life cycle costs for both alternatives are summarized in **Table 9-2** below.

Table 9-2: Life Cycle Cost Summary

SLRWRF Sell Back Scenario	Alternative No. 1 – MBR WRF at LS2; Recycled Water from District WRF	Alternative No. 2a – Recycled Water from Oceanside; Upgrades to District WW System	Alternative No. 2b – Recycled Water from Oceanside; District EQ Basin Upgrades
Annual Costs $5/gpd Sell Back of SLRWRF System Capacity	$2,475,000	$3,536,000	$3,570,000
Annual Costs $0/gpd Sell Back of SLRWRF System Capacity	$2,475,000	$3,536,000	$3,570,000
Present Worth of Annual Costs $5/gpd Sell Back of SLRWRF System Capacity	$62,547,000	$89,360,000	$90,220,000
Present Worth of Annual Costs $0/gpd Sell Back of SLRWRF System Capacity	$62,547,000	$89,360,000	$90,220,000
Total Present Worth Costs $5/gpd Sell Back of SLRWRF System Capacity	**$124,631,000**	**$145,526,000**	**$141,033,000**
Total Present Worth Costs $0/gpd Sell Back of SLRWRF System Capacity	**$135,093,000**	**$145,526,000**	**$141,033,000**

From an economic viewpoint, although Alternative No. 1 has larger initial costs than Alternative No. 2, when annual costs are considered, Alternative No. 2 is more cost effective. It is noted that Alternative No. 1 costs are dependent on whether or not the District is able to recover its participation in the Oceanside facilities.

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10 POTENTIAL FUNDING CONCEPTS

Currently, two potential funding sources exist for implementing a proposed District recycled water program. These funding sources include the California State Water Resources Control Board (SWRCB) Water Recycling Funding Program (WRFP) and the California Department of Water Resources (CA DWR) Integrated Regional Water Management (IRWM) Program.

10.1 WATER RECYCLING FUNDING PROGRAM

The SWRCB Division of Financial Assistance has a Water Recycling Funding Program (WRFP) with two categories of projects that it funds: Planning and Construction. These two categories are described in further detail below.

The WRFP provides grants to assist public agencies and tribal entities in preparation of facilities planning studies to determine the feasibility of using recycled water to offset the use of potable water from state and/or local suppliers. The grant covers 50 percent of eligible costs up to a maximum of $75,000 or $150,000 for a complete feasibility study including a 50 percent requisite match by the receiving agency.

Facilities planning reports are required and must include analysis of the essential components of the recycled water project, including:

- Detailed evaluation of selected alternative for a water recycling project;
- Draft environmental documentation (as applicable);
- Draft construction financing plan; and
- Preliminary recycled water market assurances.

Disbursement of 50 percent of the total estimated grant is provided upon approval of the draft facilities plan, with final disbursement provided following SWRCB staff approval of the final Facilities Planning Report.

The WRFP also provides grants and low interest loans to public agencies and tribal entities to fund recycled water infrastructure and construction. This application is considerably more involved than the Planning application, and includes four requisite documents: General Attachment, Financial Attachment, Technical Attachment and Environmental Attachment. The application process for recycled water projects is currently underway for the current funding program. It is recommended that the District prepare an application for planning grants to potentially secure available funding, if available, and to position the District for future recycled water funding under the WRFP.

10.2 SAN DIEGO INTEGRATED REGIONAL WATER MANAGEMENT PLAN

If Alternative No. 2 is the preferred alternative, the District and the City may be eligible for funding from the San Diego Integrated Regional Water Management Plan (IRWMP). Alternative

No. 2 qualifies as inter-agency work/coordination, which the State is very interested in promoting. IRWM-related funding requires that the proposed project meet at least three of San Diego's IRWM Plan Objectives. Through a series of facilitated public workshops and facilitated Regional Advisory Committee (RAC) meetings, the Regional Water Management Group (RWMG), RAC, and regional stakeholders developed the following eleven specific IRWM Plan objectives:

- Objective A - Encourage integrated solutions to water management issues and conflicts
- Objective B - Maximize stakeholder and community involvement and stewardship
- Objective C - Effectively obtain, manage, and assess water resources data and information
- Objective D - Further the scientific and technical foundation of water management
- Objective E - Develop and maintain a diverse mix of water resources
- Objective F - Construct, operate, and maintain a reliable infrastructure system
- Objective G - Enhance natural hydrologic processes to reduce the negative effects of hydromodification and flooding
- Objective H - Effectively reduce sources of pollutants and environmental stressors
- Objective I - Protect, restore, and maintain habitat and open space
- Objective J - Optimize water-based recreational opportunities
- Objective K - Effectively address climate change through greenhouse gas reduction, adaptation, or mitigation

Projects to be considered for San Diego IRWM funding must include Objective B and C. Proposed projects must be entered into the San Diego IRWMP Database to be eligible for IRWMP funding. Eligible projects are evaluated with a multi-step review and selection process that relies heavily on stakeholder input. As the San Diego IRWMP project database is already being compiled, it is important to begin the application process as soon as possible. Therefore, selectin of the preferred alternative is critical to advancing toward potential funding mechanisms.

10.3 FUNDING RISK MANAGEMENT

As discussed in Section 4, funding of the District recycled water program through various available sources require the development of financial plans and preliminary recycled water market assessments. This document examines the recycled water markets within the District service area. As funding applications are developed, recycled water market assurances will become scrutinized. As discussed in this report, the initial recycled water program for the District is heavily dependent on demand from the avocado growers market sector. The status and stability of the market may impact funding acceptance. The District has a side range of available recycled water markets to pursue, of which the avocado industry is the largest at this time. Notwithstanding that fact, the District is recommended to secure recycled water commitment letters from avocado growers as evidence of the validity of recycled water customers. Also, the District is recommended to identify non-avocado industry customers that

can supplement or replace avocado customers, in the event that the industry loses stability. A waiting list of potential recycled water customers provides strong evidence of the District's ability to repay the cost of recycled water infrastructure funding.

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11 RECOMMENDED ALTERNATIVE

Identification of the recommended recycled water program for District implementation involves both monetary and non-monetary considerations. The following discussion provides a summary of the findings of this report to identify the program that is most advantageous to the District and its ratepayers.

11.1 MONETARY CONSIDERATIONS

As presented in Section 9, Alternatives No. 1 and 2 have very similar capital and annual costs. The primary reason for the similar overall cost is the fact that the recycled water distribution facilities within the District boundary are the same in both alternatives. The differentiation of the two alternatives is the recycled water source of supply. The cost differential between Alternatives No. 1 and 2 is between $10,000,000 and $20,000,000 on a present worth basis (Table 9-2). Alternative No. 1 has an annual cost approximately $1,000,000 less than Alternative No. 2. However, Alternative No. 2 has an initial cost that is between $8,000,000 and $18,000,000 less than Alternative No. 1.

Setting aside the common components of the two alternatives, the monetary decision hinges on the cost to construct a new recycled water facility versus constructing tertiary treatment at the SLRWRF. Alternative No. 1 requires reconstructing the secondary treatment facilities that the District has already purchased use of at the SLRWRF, which are not required in Alternative No. 2. Therefore, from a capital cost benefit, the District is better served by selecting Alternative No. 2. It is noted that cost recovery of past investment in SLRWRF capacity narrows the capital cost differential between the two alternatives. The current agreement between the City and District provides for the termination of the agreement and recovery of some portion of the District investment. However, the magnitude of that recovery is undefined, and has been assumed to be on the order of 0 to 5 percent in this analysis. The breakeven point of the analysis is approximately at a recovery rate of $7.50 per gallon of capacity.

Reviewing annual cost considerations, Alternative No. 1 has significant monetary advantages to Alternative No. 2, totaling approximately $1,000,000 per year, out of a total annual cost of between $2,500,000 and $3,500,000 depending on the alternative. Annual costs associated with Alternative No. 2 have been well documented over many years, ranging between $70,000 and $80,000 per month with current tributary flow of 0.7 mgd. It is projected that the annual cost will increase with tributary flow. In addition, annual capital replacement funding for equipment replacement and rehabilitation is charged to the District at a rate of 11.1 percent, and will increase to 12.0 percent once the District extends its ownership to meet its projected demand of 1.62 mgd.

Alternative No. 1 annual costs are lower as a result of the plant size and lower labor and power costs. Alternative No. 1 cost projections include an annual contribution of $300,000 to an annual replacement fund for equipment repair and replacement, which is less than the SLRWRF 11.1 percent contribution, as the equipment is smaller and less costly to repair or replace.

Table 11-1 and **Table 11-2** summarize monetary differences between the two alternatives. Considering both capital and annuals costs, Alternative No. 2 is approximately 17 percent more costly to District ratepayers then Alternative No. 1 on a total annual cost basis. As a result, Alternative No. 1 is the preferred alternative on a monetary basis.

Table 11-1: Capital Cost Summary

SLRWRF Recovery Scenario	Alternative No. 1 – MBR WRF at LS2; Recycled Water from District WRF	Alternative No. 2a – Recycled Water from Oceanside; Upgrades to District WW System	Alternative No. 2b – Recycled Water from Oceanside; District EQ Basin Upgrades
$0 / gallon Recovery	**$72,546,000**	**$56,166,000 (-23%)**	**$50,813,000 (-30%)**

Table 11-2: Annual Cost and Present Worth Summary

SLRWRF Recovery Scenario	Alternative No. 1 – MBR WRF at LS2; Recycled Water from District WRF	Alternative No. 2a – Recycled Water from Oceanside; Upgrades to District WW System	Alternative No. 2b – Recycled Water from Oceanside; District EQ Basin Upgrades
Annual Costs $0/gallon Recovery	$2,475,000	$3,536,000 (+43%)	$3,570,000 (+44%)
Present Worth of Annual Costs $0/gallon Recovery	$62,547,000	$89,360,000 (+43%)	$90,220,000 (+44%)
Total Present Worth Costs $0/gallon Recovery	**$135,093,000**	**$145,526,000 (+8%)**	**$141,033,000 (+4%)**
Total Annual Cost at $0/gallon Recovery	**$6,776,000**	**$7,912,000 (+17%)**	**$7,668,000 (+13%)**

11.2 NON-MONETARY CONSIDERATIONS

In evaluating the advantages and disadvantage of the two recycled water project alternatives, non-monetary factors must be considered. A considerable number of non-monetary considerations have been presented in this report. **Table 11-3** is a summary of the non-monetary considerations, including risk factors, impacting the District's decision making process.

Table 11-3: Non-Monetary Considerations

Non-Monetary Considerations	Alternative No. 1	Alternative No. 2a	Alternative No. 2b
Development of a local, drought-tolerant water supply	+	+	+
Targeting potable water supplies to highest, most beneficial use	+	+	+
Increasing District control over impacts of long-term regulatory impacts (i.e. ocean discharge restrictions, IPR, DPR, among others)	+	-	-
Reducing risk associated with assurance of adequate recycled water demand for wastewater effluent disposal	-	+	+
Development of new District revenue source	+	+	+
Reducing risk associated with downstream infrastructure replacement and rehabilitation expenditures	+	-	-
Reducing risk of customer markets on District recycled water operations at system implementation	-	+	+
Reducing risk of customer markets on District recycled water operations in the future	+	-	-
Recycled water program expansion capability and accommodation of new user markets	+	-	-
District control over recycled water program management and implementation	+	-	-
Increasing potential success for State and local grant funding opportunities, based on current funding environment	-	+	+
Environmental documentation of required facilities, and potential for environmental constraints and roadblocks	+	+	+
Effluent Disposal Flexibility and Reliability	-	+	+
Salinity reduction impact (i.e. brine disposal, demineralization facilities, and regulatory challenges)	-	+	+
Recycled water monitoring and reporting (annual monitoring and reporting requirements)	-	-	-

Water Reclamation Plant and Recycled Water Distribution System

Non-Monetary Considerations	Alternative No. 1	Alternative No. 2a	Alternative No. 2b
Staffing requirements of recycled water treatment and distribution systems (certifications of required staff)	-	+	+
Wastewater treatment operator requirements (requiring hiring of additional staff to meet regulations)	-	+	+
Brine disposal availability (negotiation of brine disposal agreements)	-	+	+
Required renegotiation of current wastewater agreement with City of Oceanside	+	-	-
District Board of Directors goals and objective regarding recycled water as a service to District ratepayers	+	+	+
Coordination of recycled water program with other District projects (i.e. Groundwater Project)	+	-	-
Accommodation of future new development to provide recycled water service	+	+	+
Construction impacts within the District service area	-	-	-
Construction impacts external to the District service area	+	-	-
Permitting, operation and maintenance of recycled water treatment facilities	-	+	+
Ability to obtain and serve recycled water in excess of existing and future wastewater volumes	-	+	+
Managing risk associated with recycled water distribution system phasing and user markets	-	+	+
Disposal of wastewater treatment byproducts (i.e. biosolids)	-	+	+
Land acquisition and treatment facility siting challenges	-	+	+
Reductions in energy consumption and greenhouse gas production	+	-	-
Rehabilitation and usefulness of Beck Reservoir and Morro Tanks	+	+	+

Non-Monetary Considerations	Alternative No. 1	Alternative No. 2a	Alternative No. 2b
Operational reliability and control of recycled water supply and delivery to District customers	+	-	-
Disposal or storage of off-specification or seasonal discharge limitations (winter rainy season effluent disposal)	-	+	+
Odor control and community acceptability of required treatment facilities	-	+	+
Effluent treatment requirements (WDR) to meet Basin Plan requirements	+	-	-
Recycled water program control	+	-	-

As shown in Table 11-3, non-monetary considerations can favor one or both of the alternatives, depending on the issue in question. In general, Alternative No. 2 provides the District more flexibility and does not require the District to hire and train new staff to manage, operate, and maintain the new treatment facility. The SLRWRF is an established regional treatment facility with a proven record of successful operation and maintenance. The regulatory agencies have already permitted the facility and the District has been operating without it own treatment facility for many years. Alternative No. 2 is just easier to implement and more flexible with regard to recycled water production and delivery.

One of the most compelling non-monetary considerations for Alternative No. 2 is that the District is not faced with a situation of limited effluent disposal opportunities. Under Alternative No. 1, the District is responsible for disposal of effluent at all times, seasonally, rain or shine, every day, 365 days per year. Recycled water demand users and markets exist that accommodate this requirement, but District staff has never had the responsibility to assure sustainable effluent disposal. The SLRWRF has the ability to discharge secondary effluent to the ocean in the event that recycled water demand is low, thereby saving money by not operating tertiary equipment and avoiding potential WDR violations. This challenge would be new to District staff.

The most compelling non-monetary consideration for Alternative No. 1 is self-reliance. The District is liable, through the current agreement with Oceanside, for 11.1 percent of any and all improvements to the SLRWRF, as well as the land and ocean outfall system. Replacement or rehabilitation of these facilities is costly, and the City has the sole discretion to determine these needs, without District input. Under Alternative No. 1, the District is solely responsible to its Board of Directors and ratepayers for management, operations and maintenance of the recycled water program.

Based on non-monetary concerns alone, identification of the preferred alternative is highly subjective. However, one of the overriding factors leading completion of this study was the District Board of Directors' objective to provide a recycled water resource to District ratepayers. As stated previously, the primary differentiation between the two alternatives is recycled water supply. Under Alternative No. 2, the District is not responsible for production of recycled water or effluent disposal during low demand periods that would be handled at the SLRWRF by the City. Yet, the District remains responsible for the distribution, monitoring and reporting of recycled water use within its service area.

Based on the identifiable non-monetary considerations, Alternative No. 2 is considered to maintain a slight advantage over Alternative No. 1 as a result of the increased flexibility and reduction in effluent disposal challenges during low demand periods.

11.3 RECOMMENDATION

Based on the monetary and non-monetary considerations, Alternative No. 1 is recommended as the preferred recycled water program alternative. The decreased cost to the District ratepayers is considered to be more compelling than the challenges in operation and maintenance of the proposed recycled water system. Many agencies have successful recycled water programs, with similar operational challenges. The rural nature of the District service area is conducive to identifying and maintaining long-term recycled water service agreements with multiple user markets, in excess of the required effluent disposal requirements.

Regardless of the Alternative selected, the District will be responsible for operation and maintenance of the entire recycled water distribution system. The treatment facility will require either a contract operations agreement or hiring of Grade III and V operations personnel. Recent changes in the operator certification requirements require that personnel work under the supervision of a certified Grade V operator. As a result, without hiring, existing District staff would have limited opportunity to become certified. Contract operations are a typical method for an agency to meet operator requirements.

Sections 5 and 6 provide definition of the Alternative No. 1 system, and are not repeated in this section. Ongoing negotiations with the City regarding critical aspects of recycled water program implementation will continue to define specific implementation requirements that require negotiation between the City and District. The City is highly interested in retaining the District as a regional partner in wastewater collection and treatment, as well as recycled water production and distribution. Under either alternative, the District attains its objective relative to providing a new drought-tolerant water supply for its ratepayers.

APPENDIX A

Preliminary Drawings

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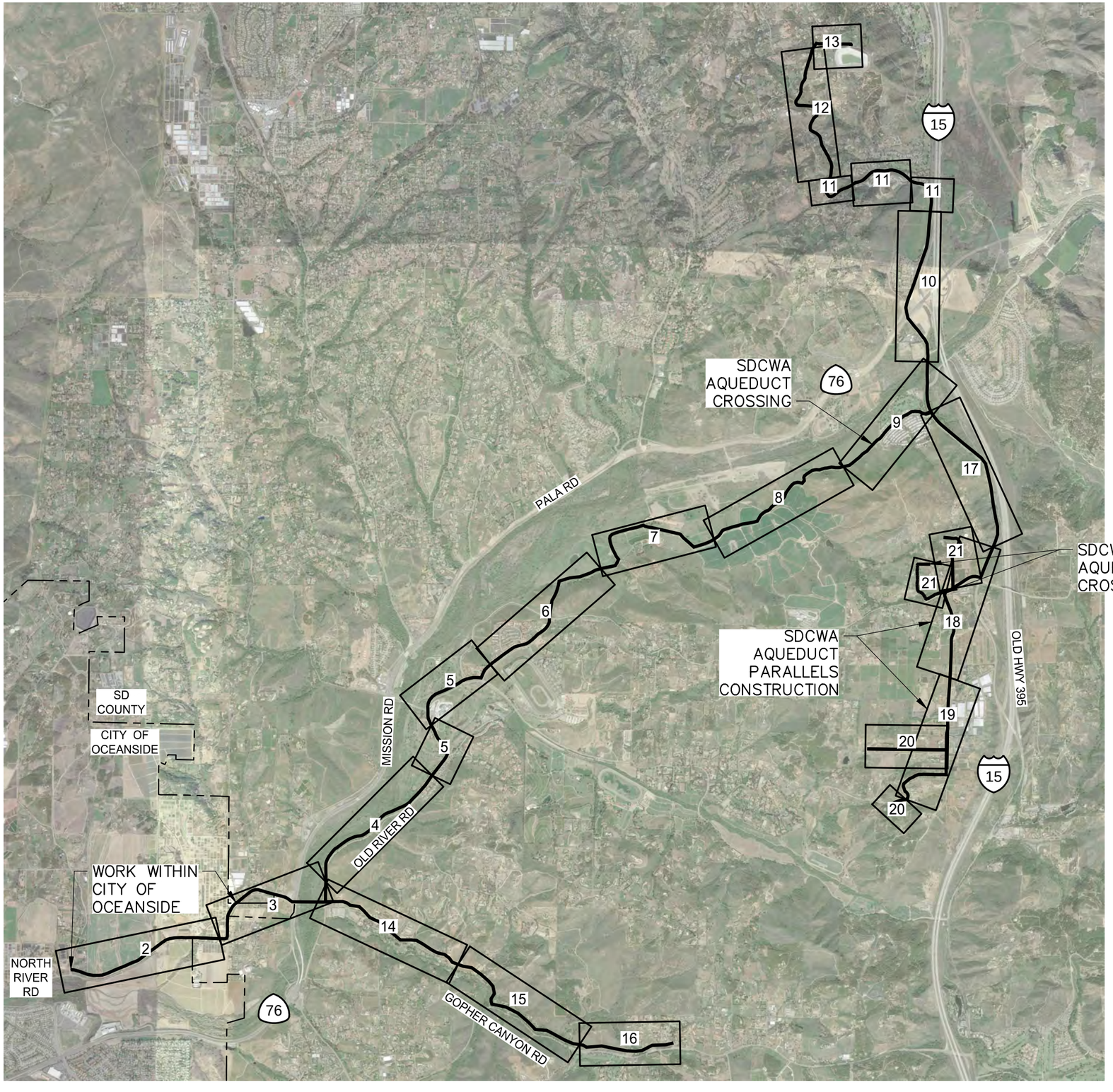

RAINBOW MUNICIPAL WATER DISTRICT
WATER RECLAMATION PLANT
RECYCLED WATER DISTRIBUTION
SYSTEM PREDESIGN REPORT

JUNE, 2016

NOT FOR CONSTRUCTION

LEGEND

2	=	FIGURE NO.
RW	=	RECYCLED WATER

FIGURE 1
KEY MAP

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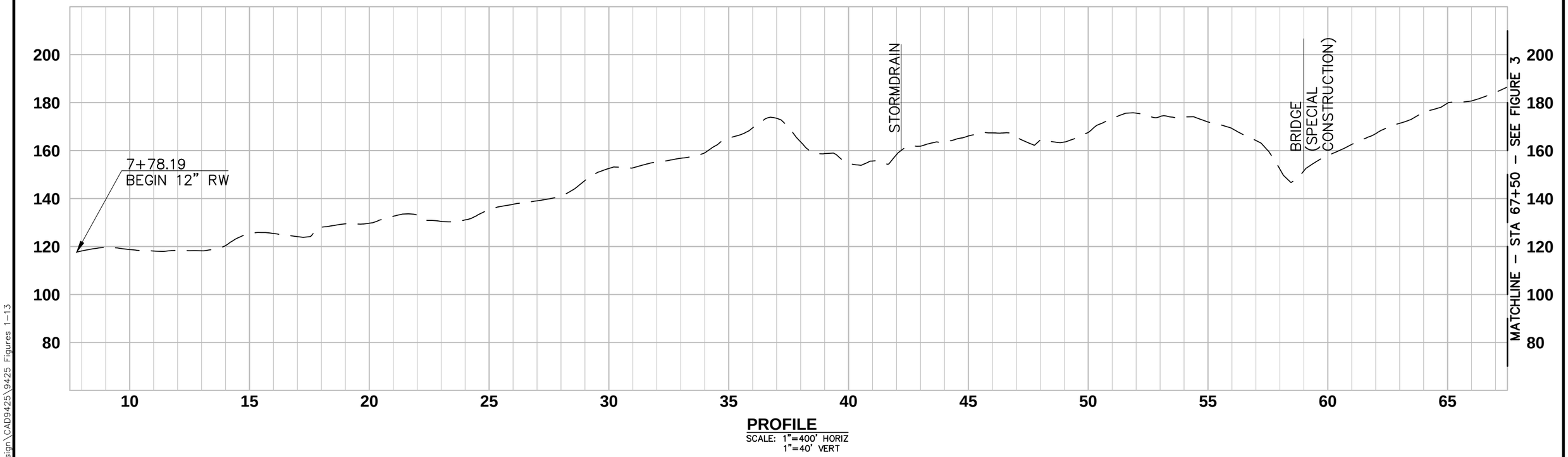

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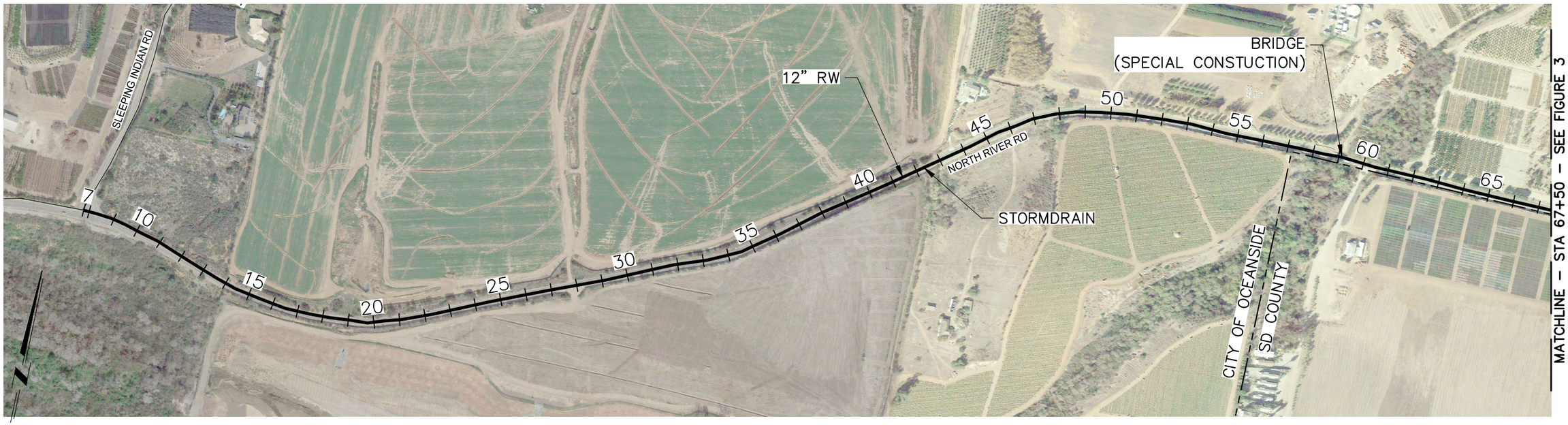

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FIGURE 2

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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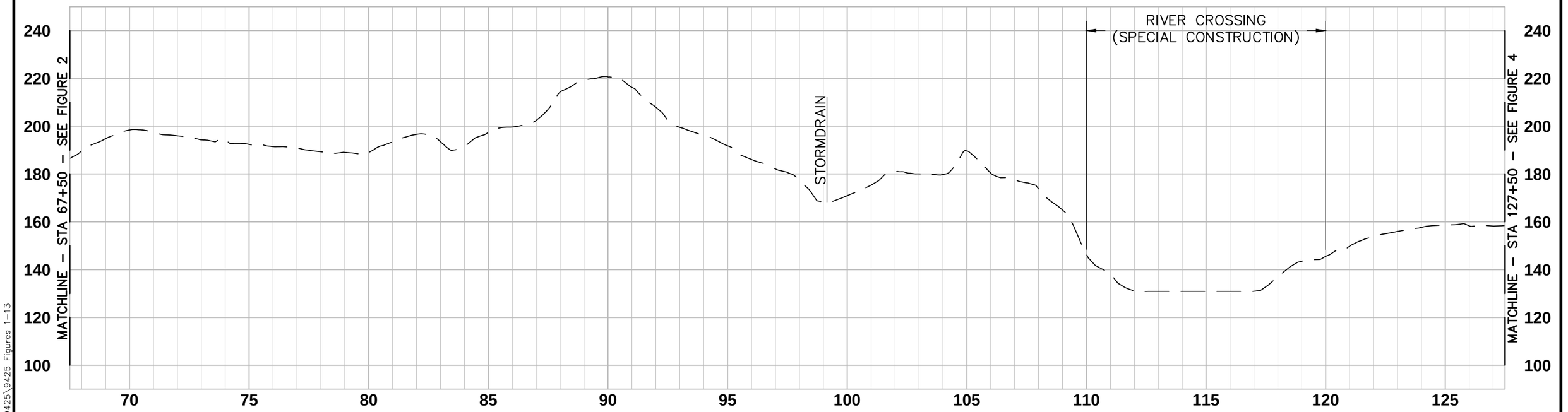

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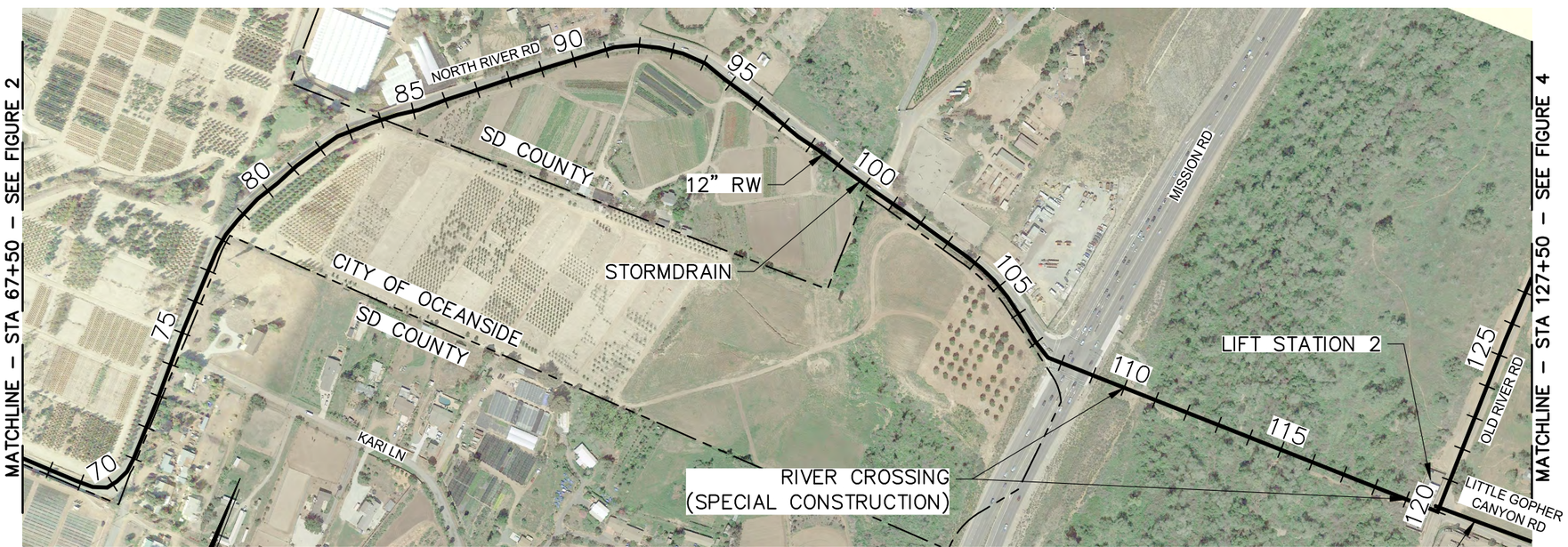

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FIGURE 3

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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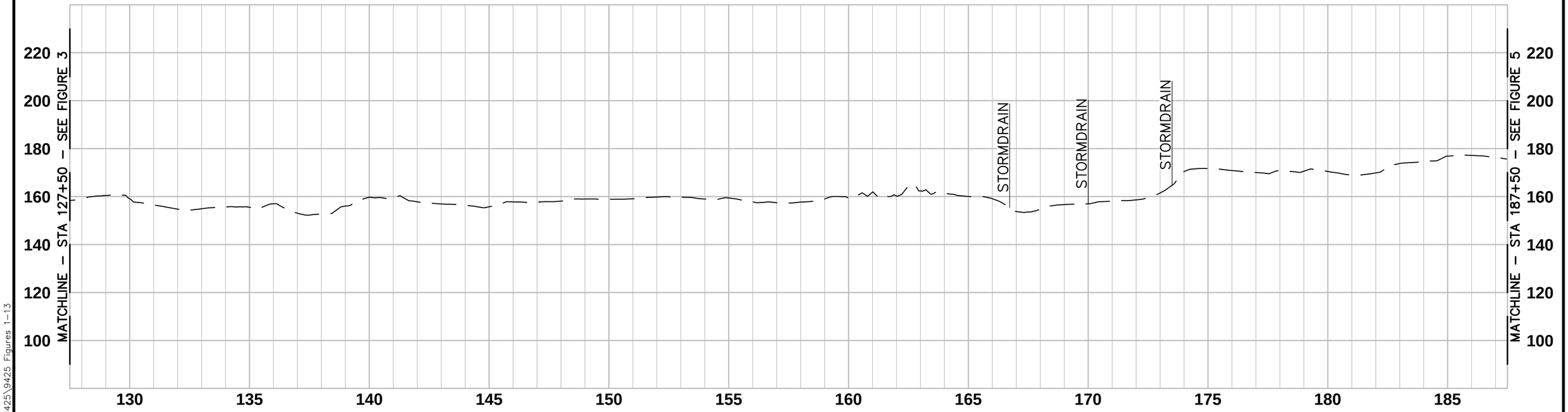

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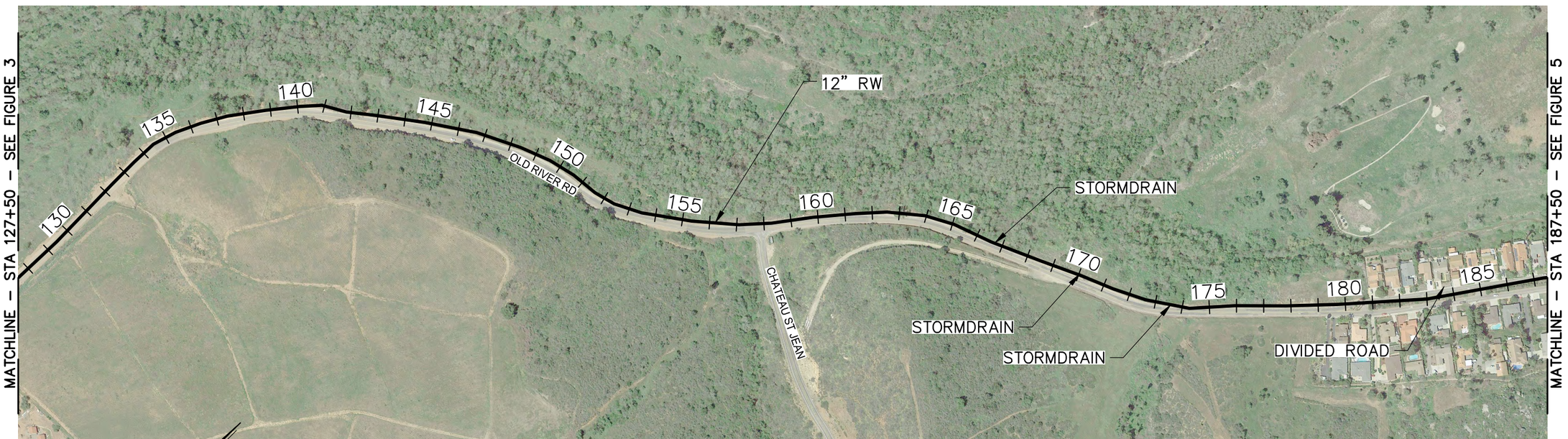

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FIGURE 4

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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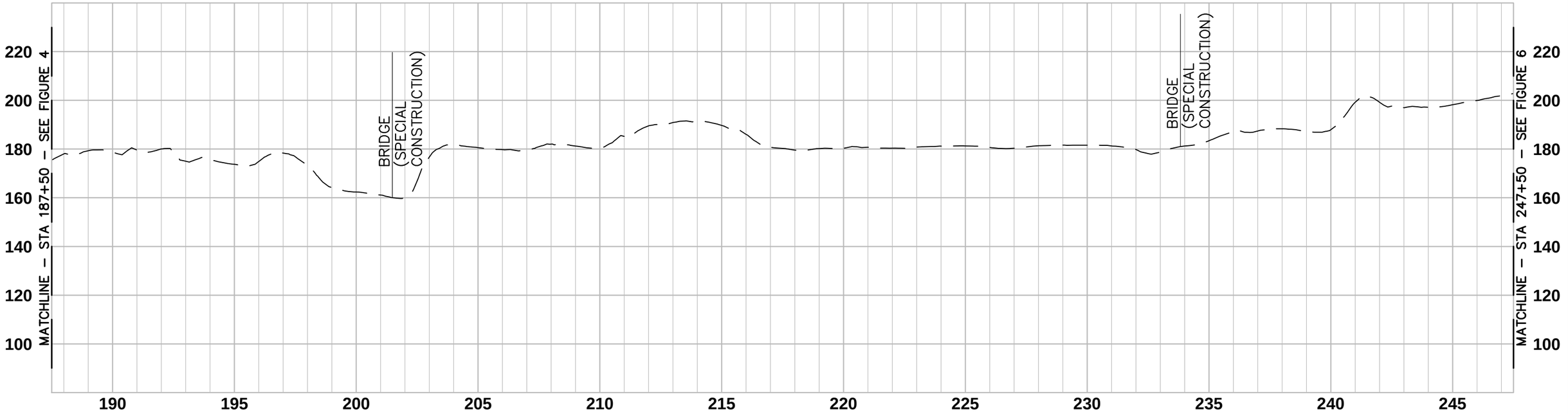

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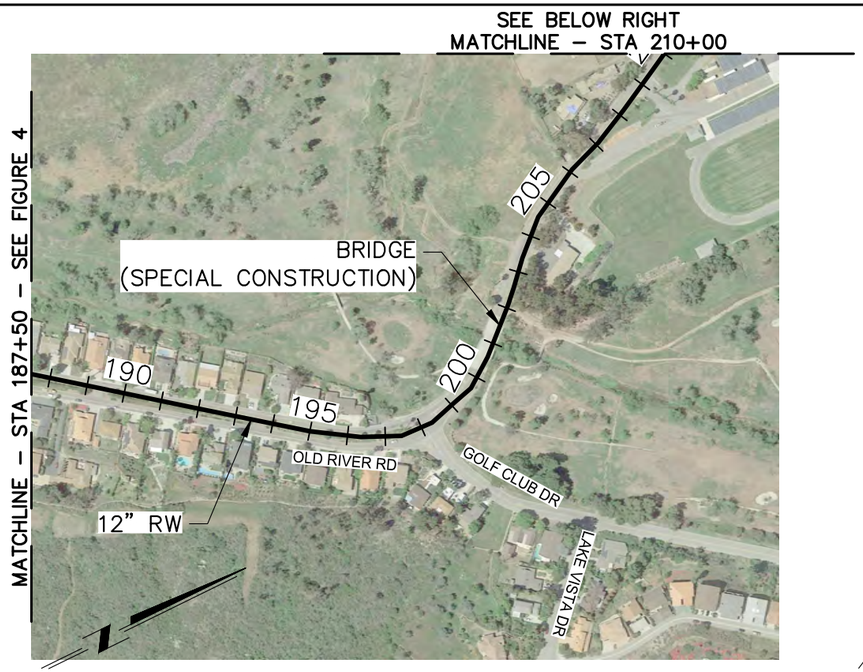

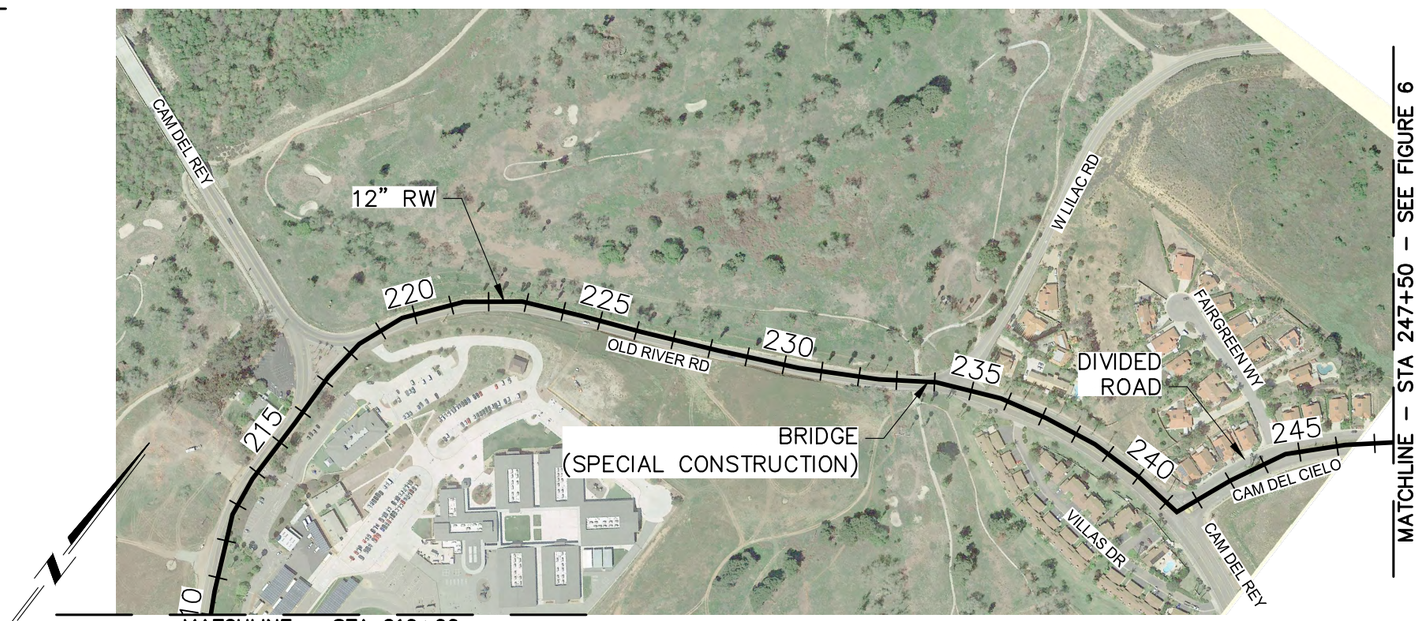

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FIGURE 5

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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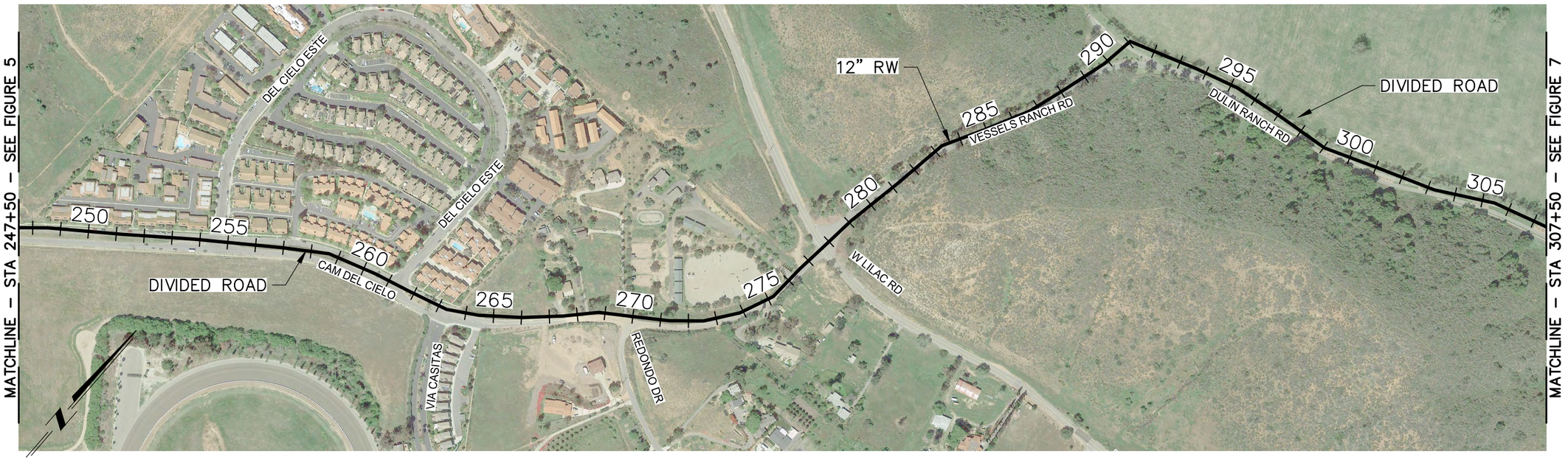

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FIGURE 6

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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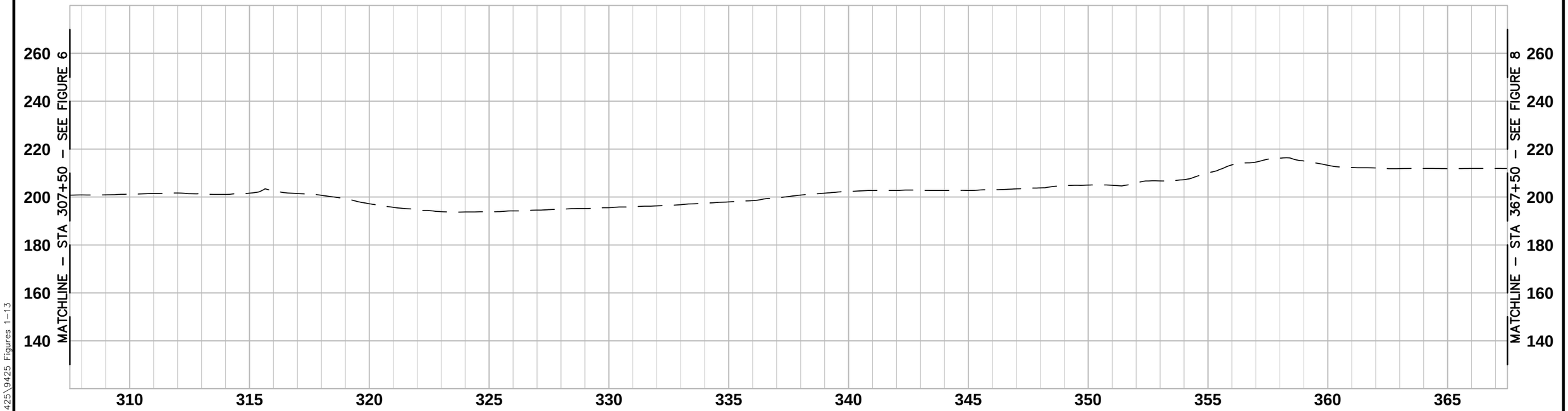

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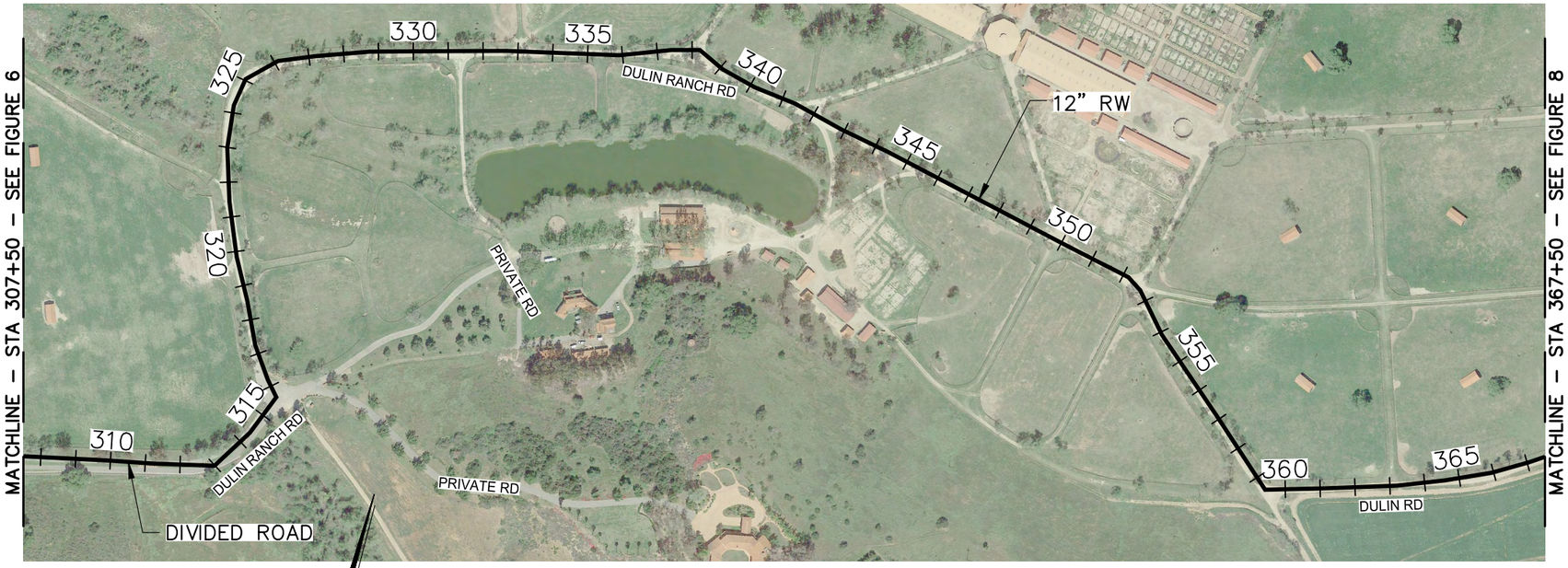

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FIGURE 7

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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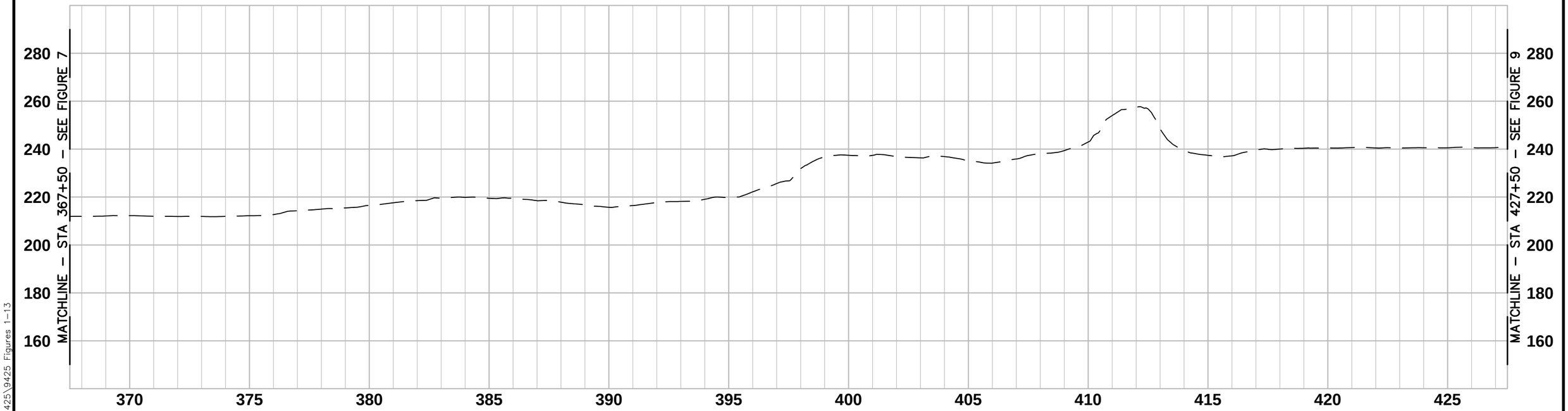

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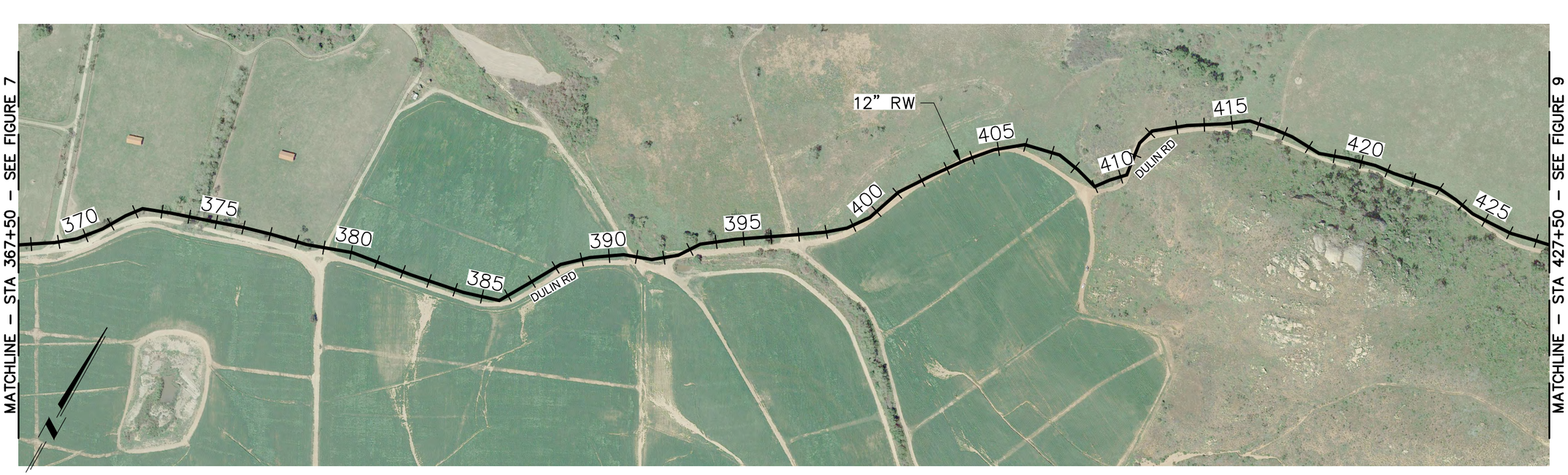

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FIGURE 8

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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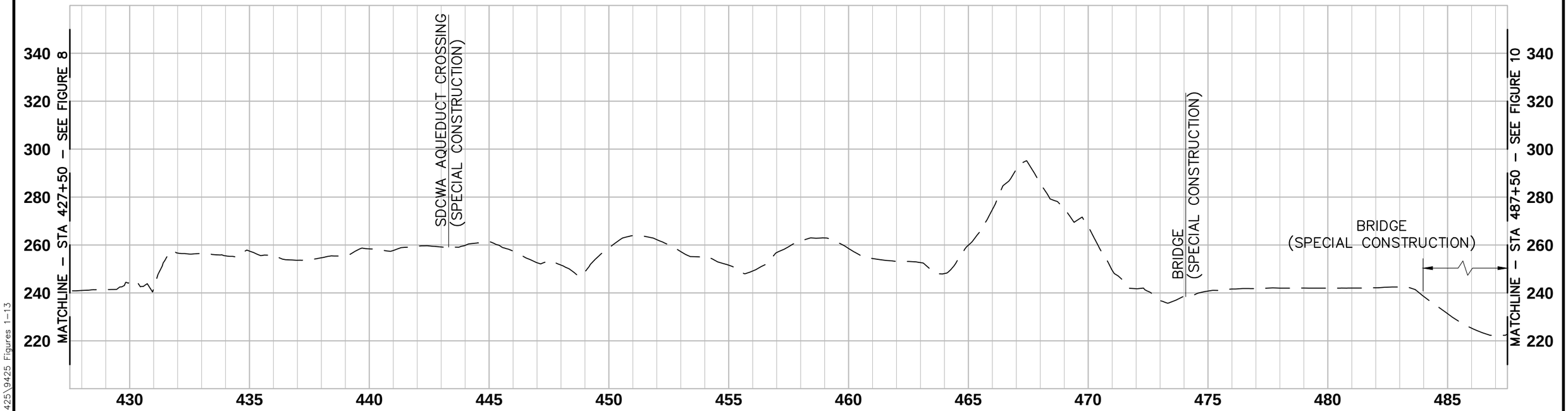

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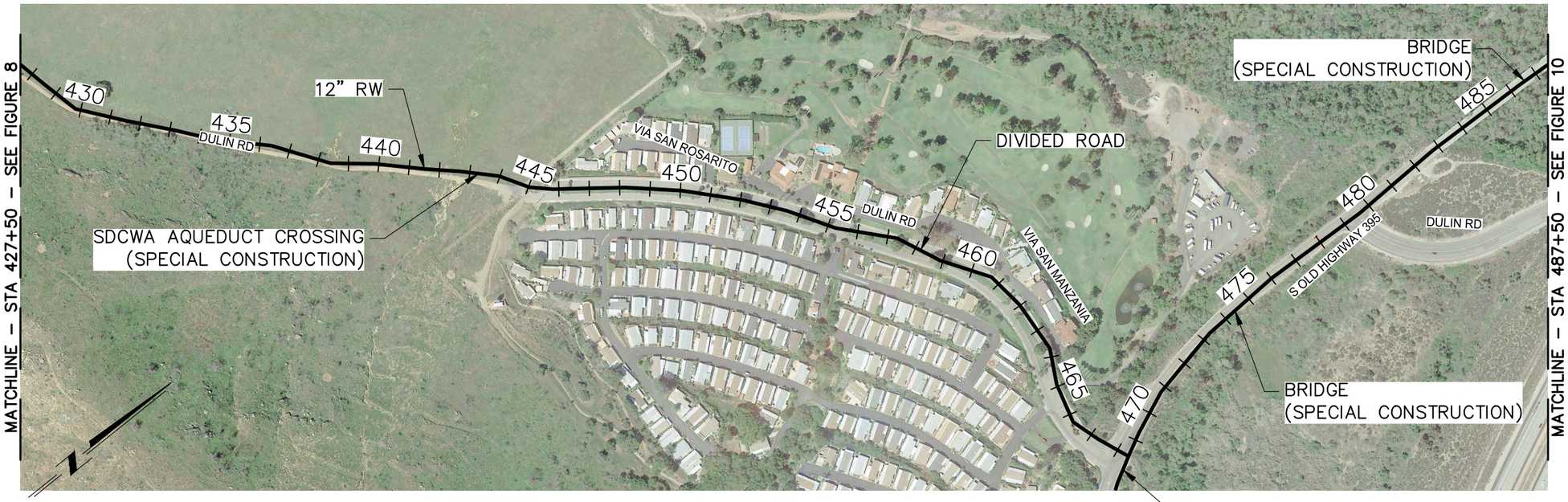

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FIGURE 9

PRIMARY RECYCLED WATER ALIGNMENT
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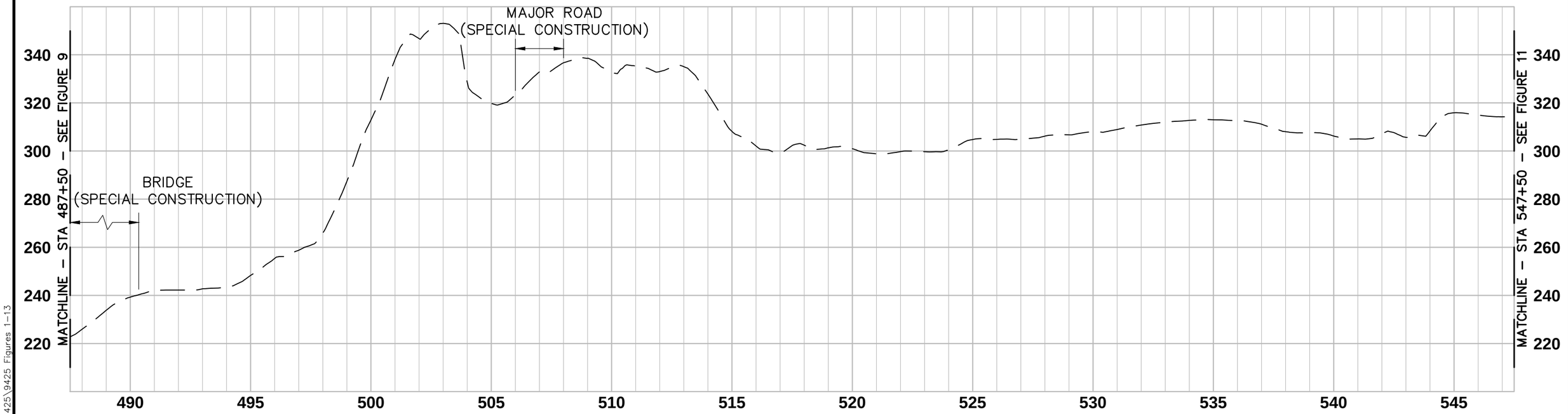

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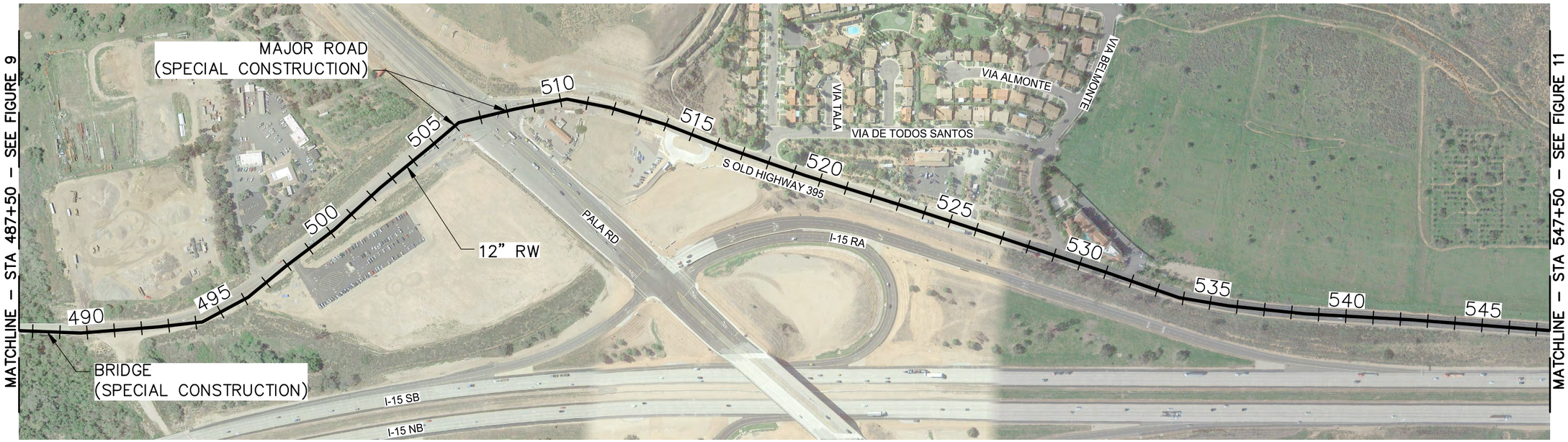

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FIGURE 10

PRIMARY RECYCLED WATER ALIGNMENT
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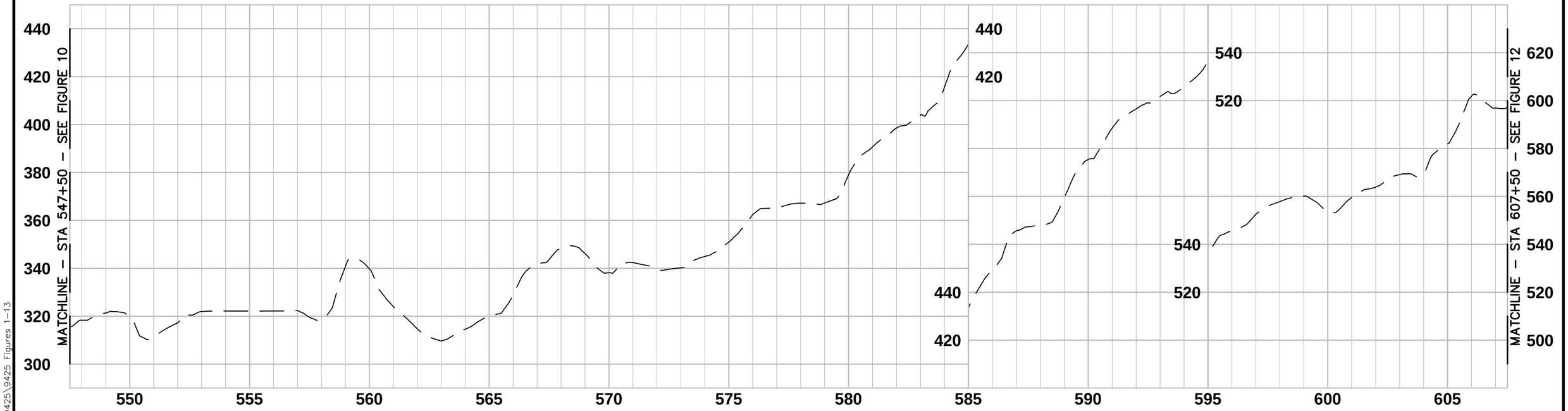

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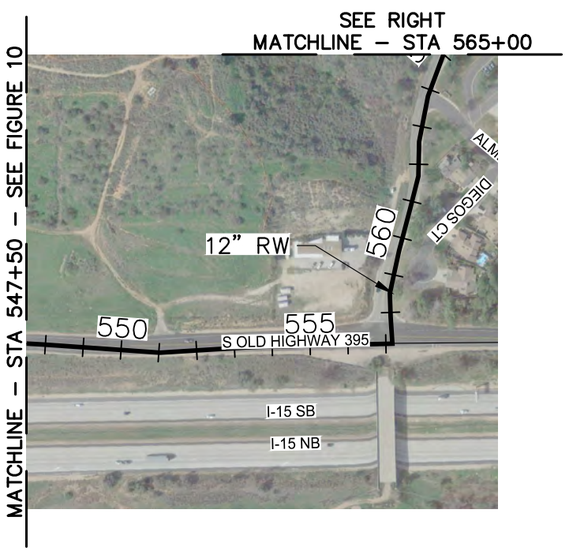

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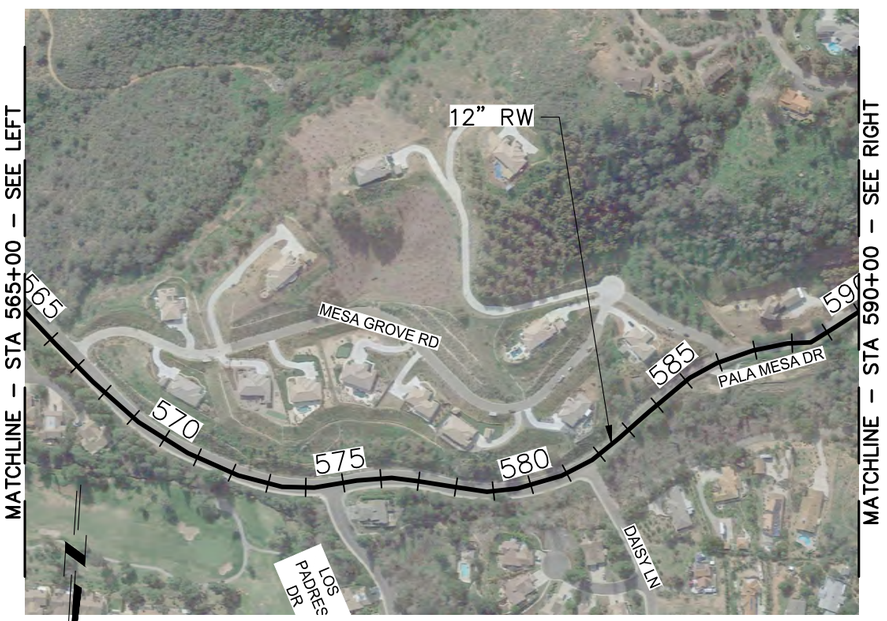

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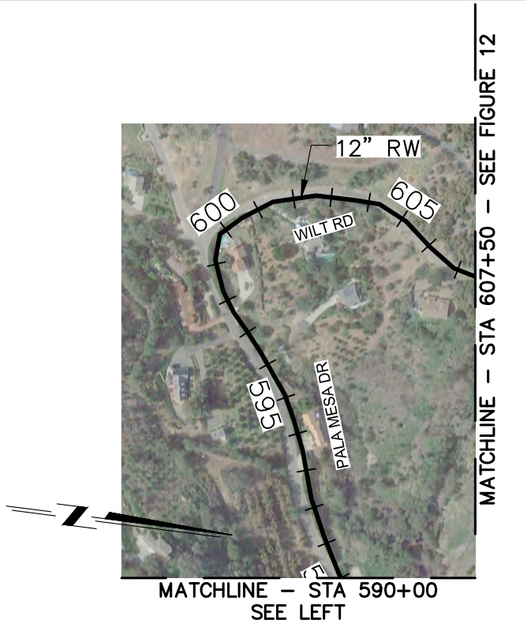

FIGURE 11

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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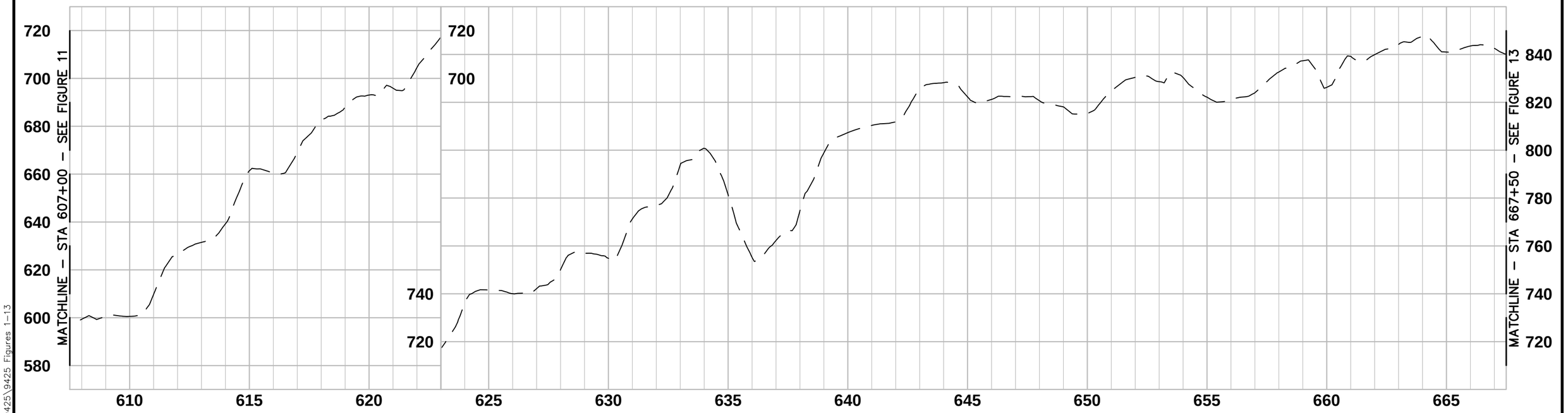

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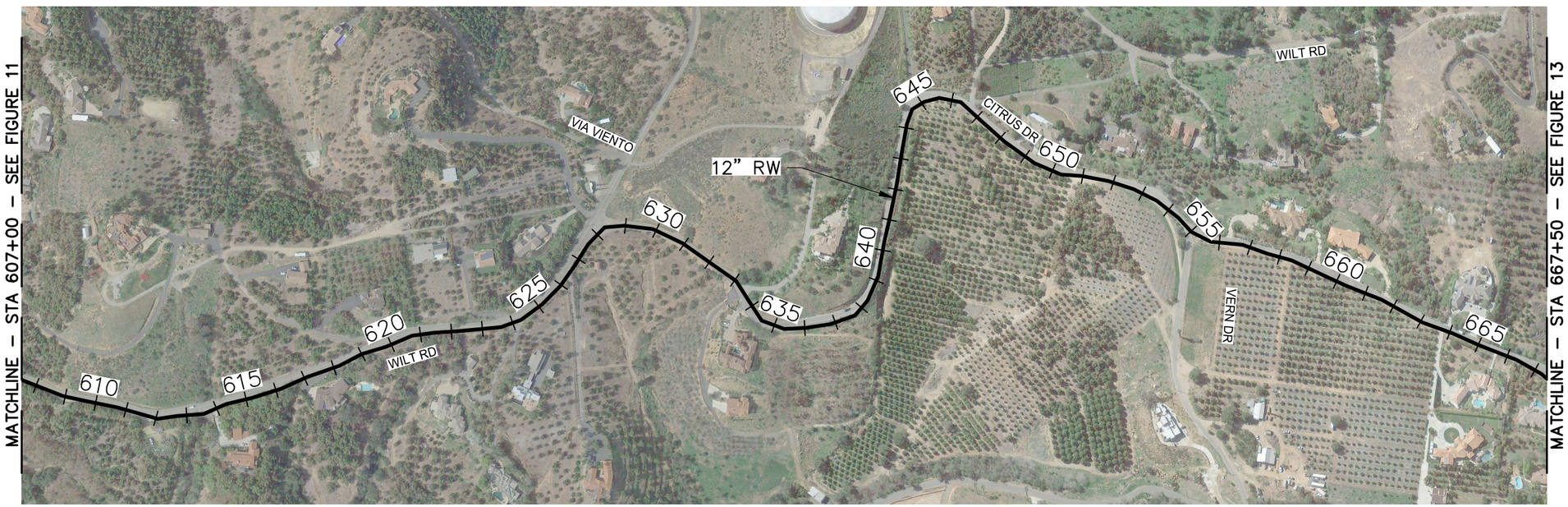

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FIGURE 12

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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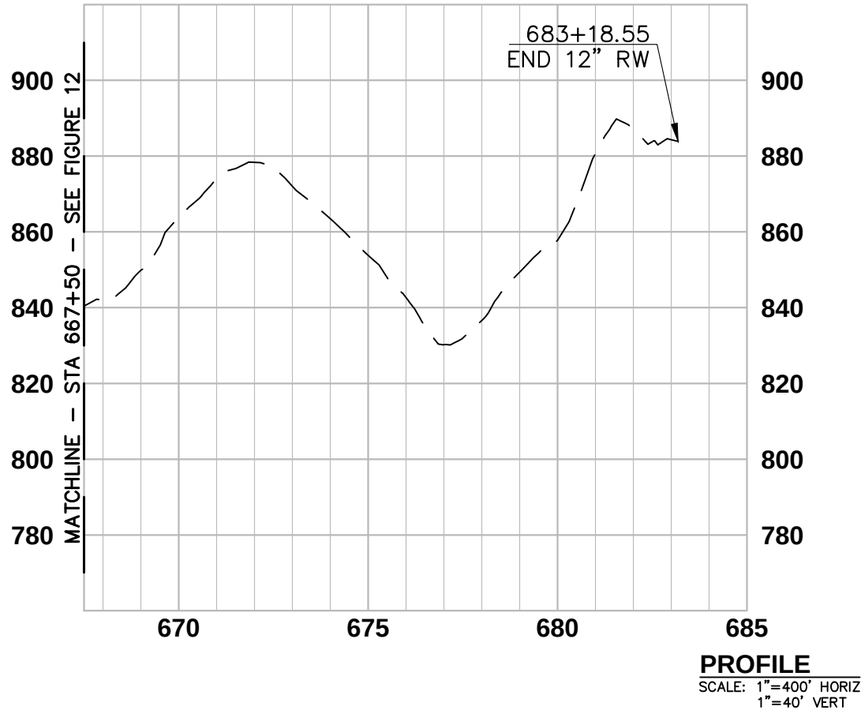
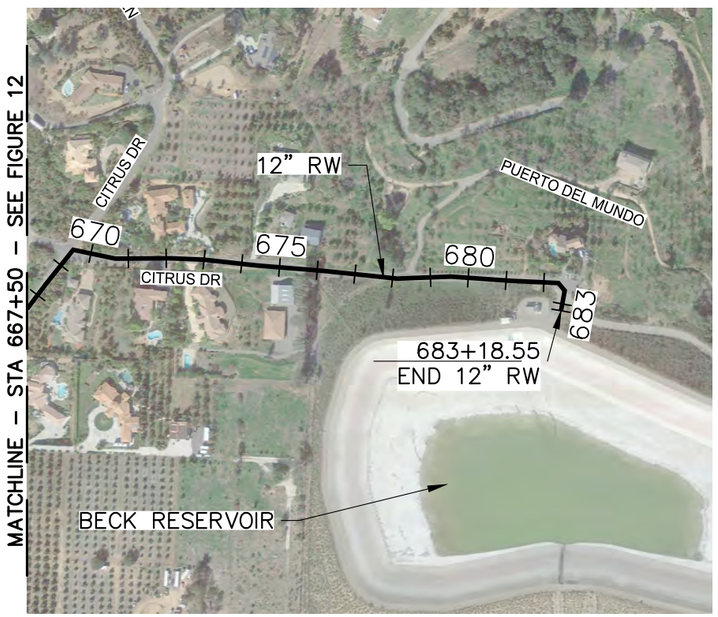


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



PLAN
SCALE: 1"=400'

GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

FIGURE 13

PRIMARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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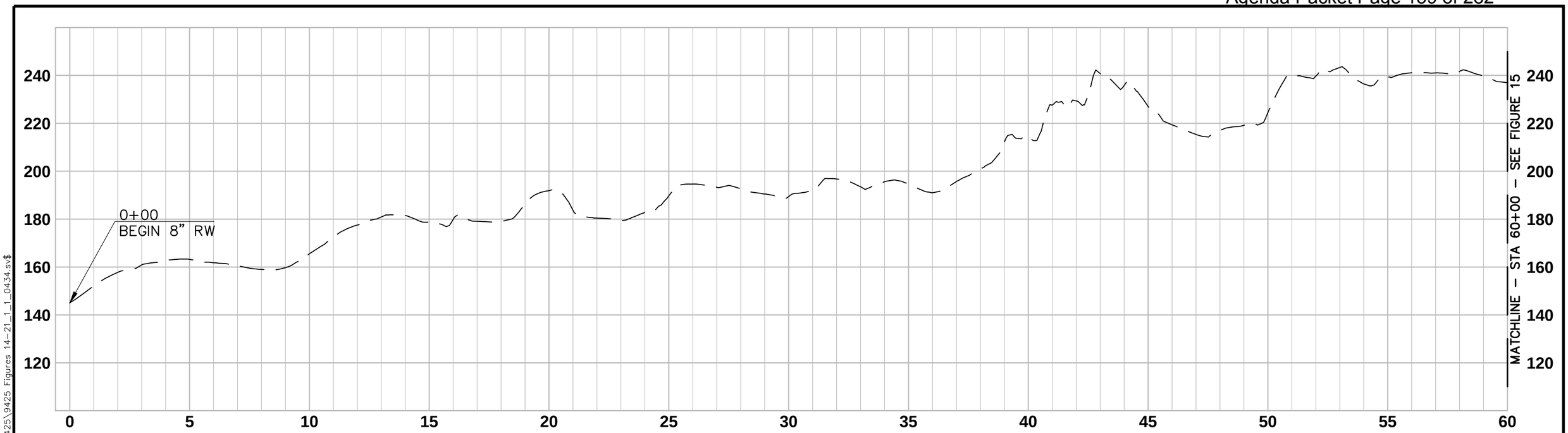
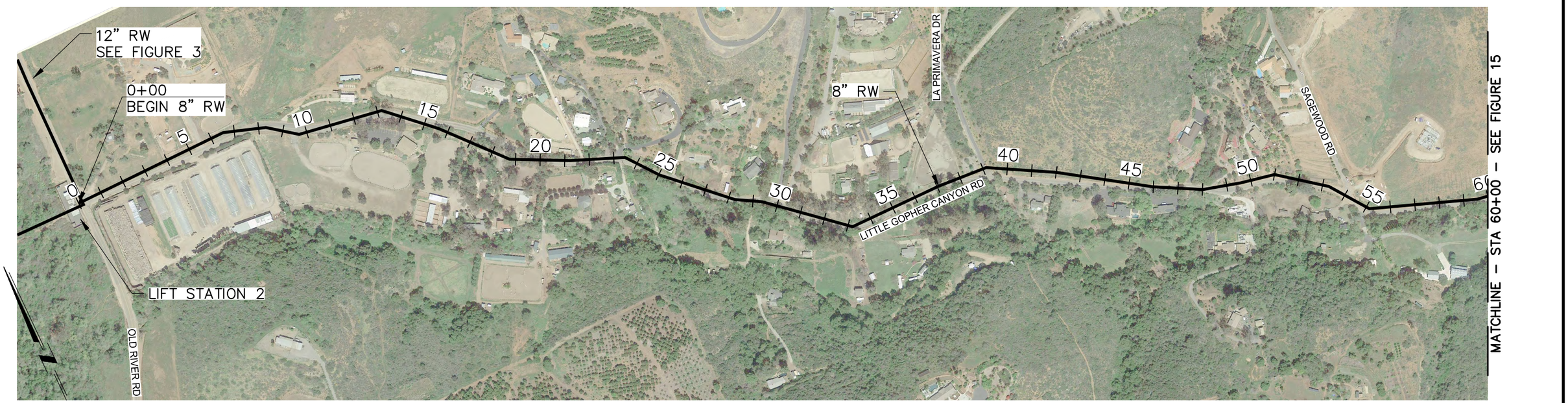


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



PLAN
SCALE: 1"=400'

GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

FIGURE 14

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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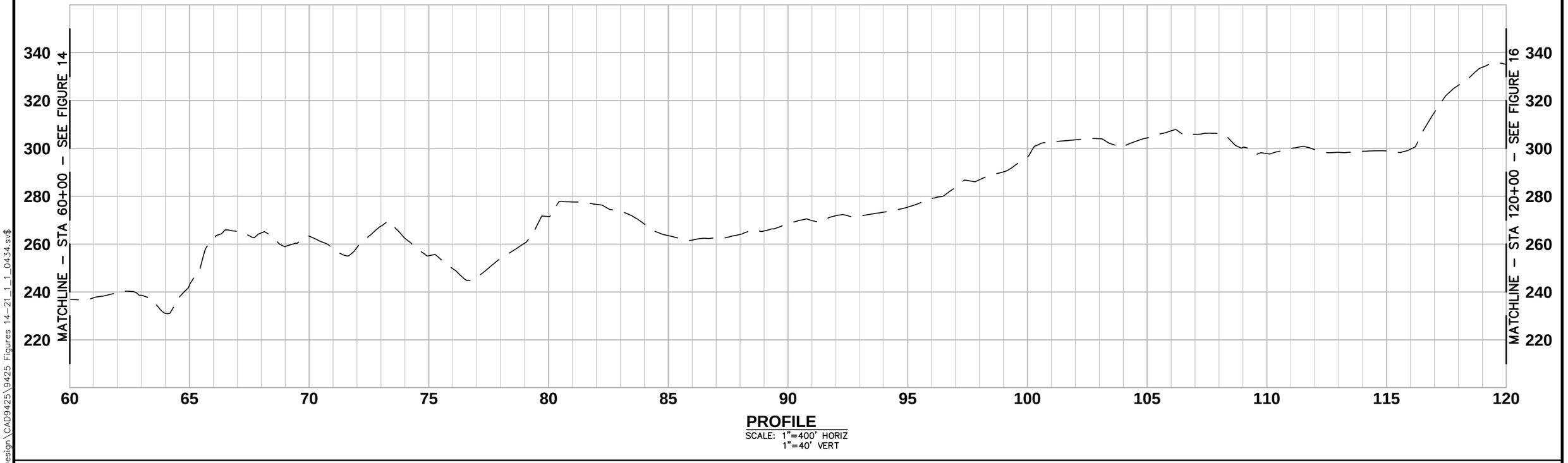
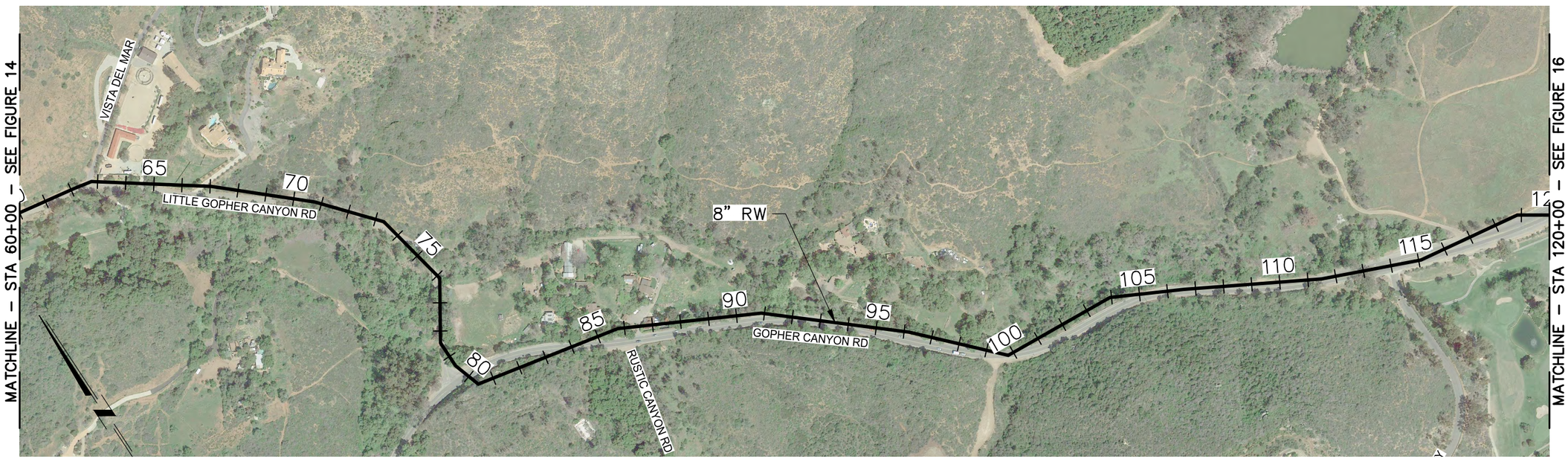


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

PLAN
SCALE: 1"=400'

FIGURE 15

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

DUDEK

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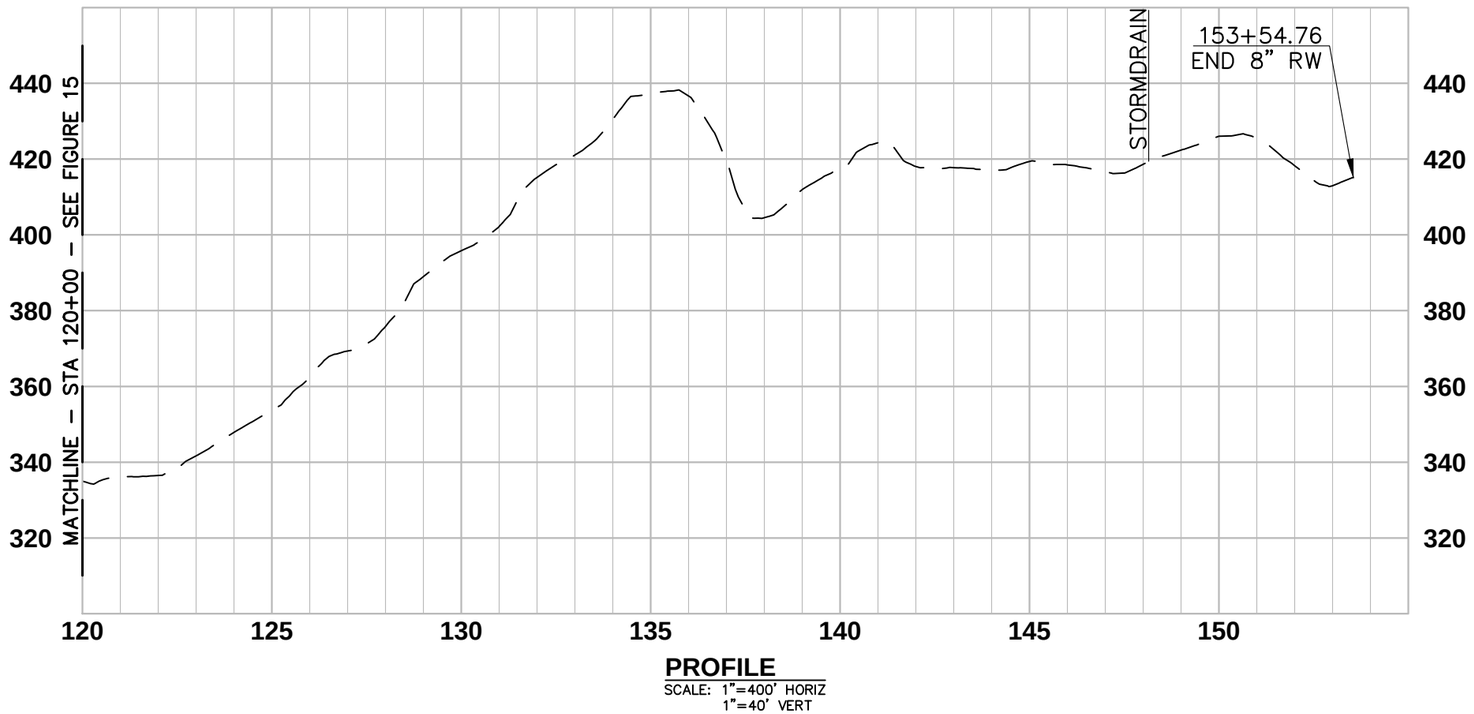
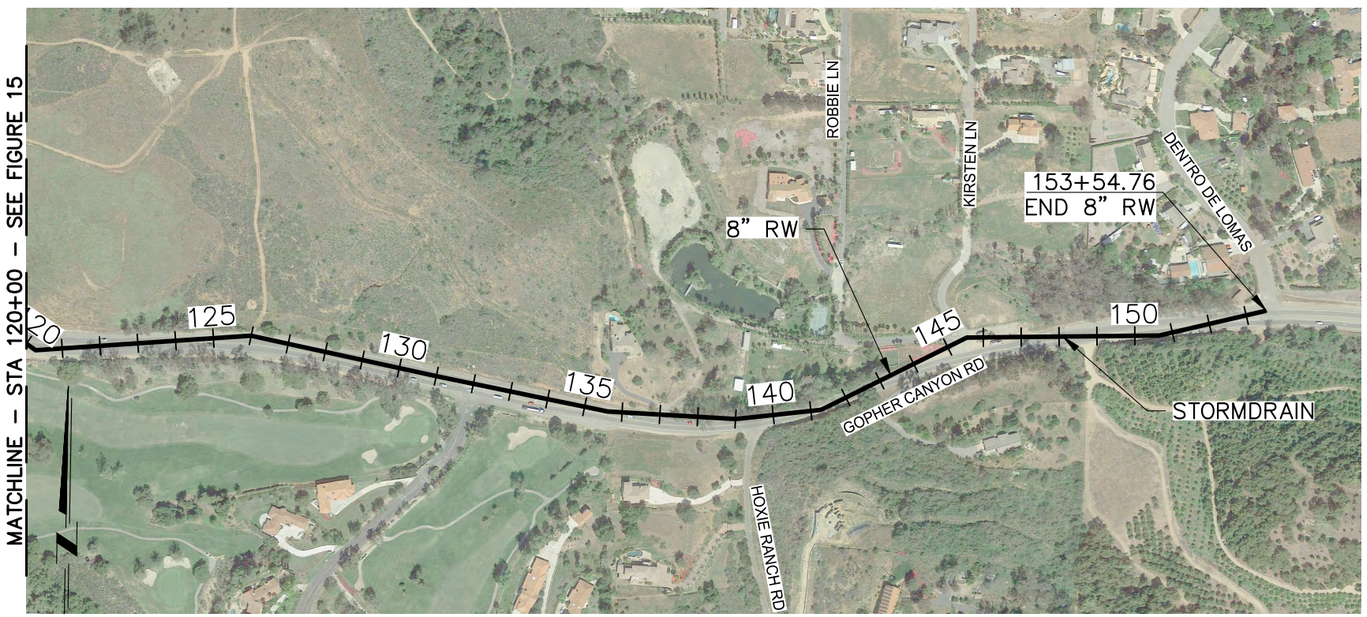


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

PLAN
SCALE: 1"=400'

FIGURE 16

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

DUDEK

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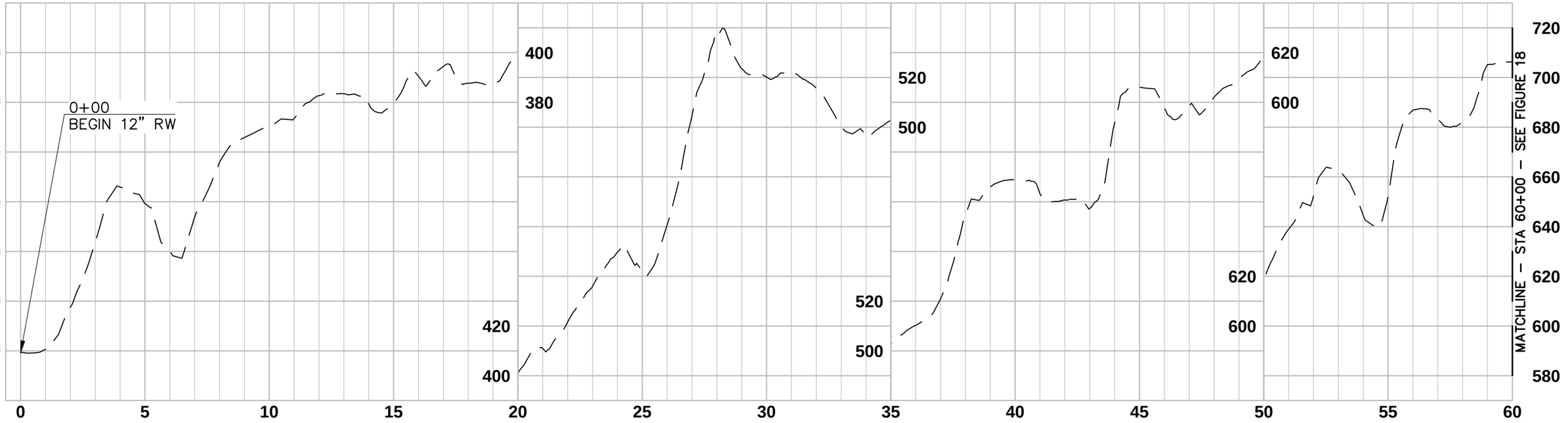
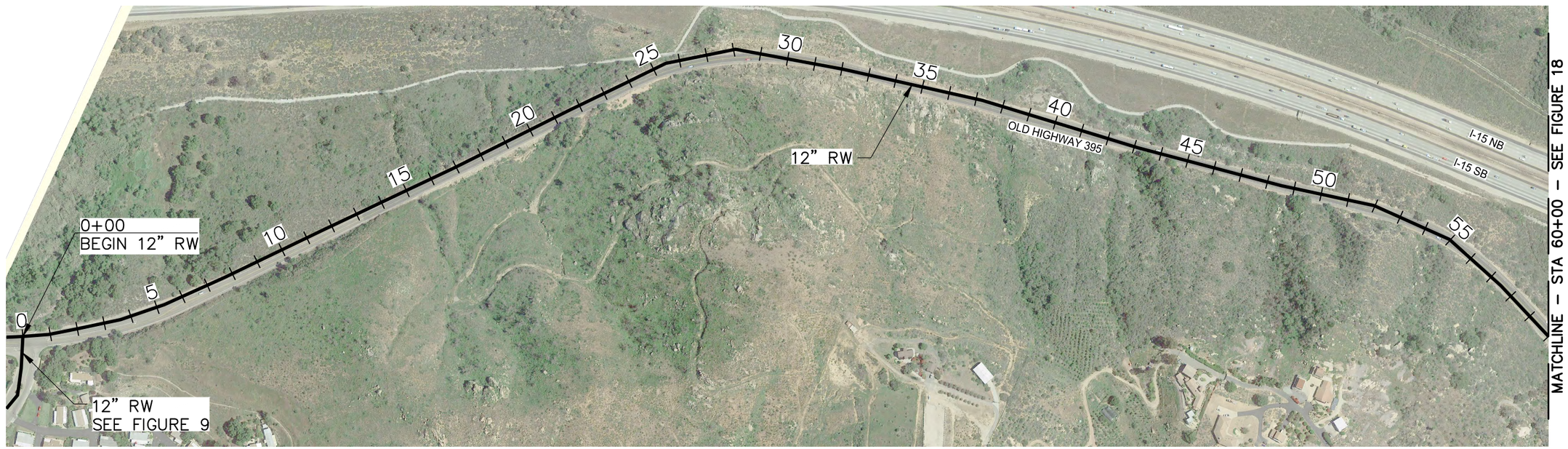


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

PLAN
SCALE: 1"=400'

FIGURE 17

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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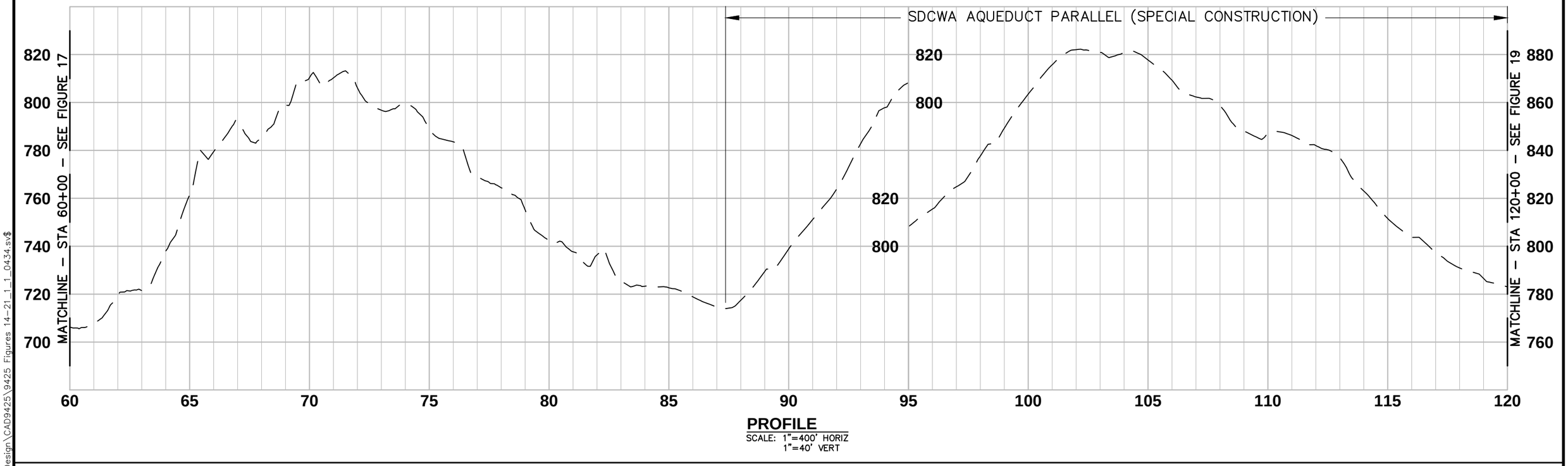
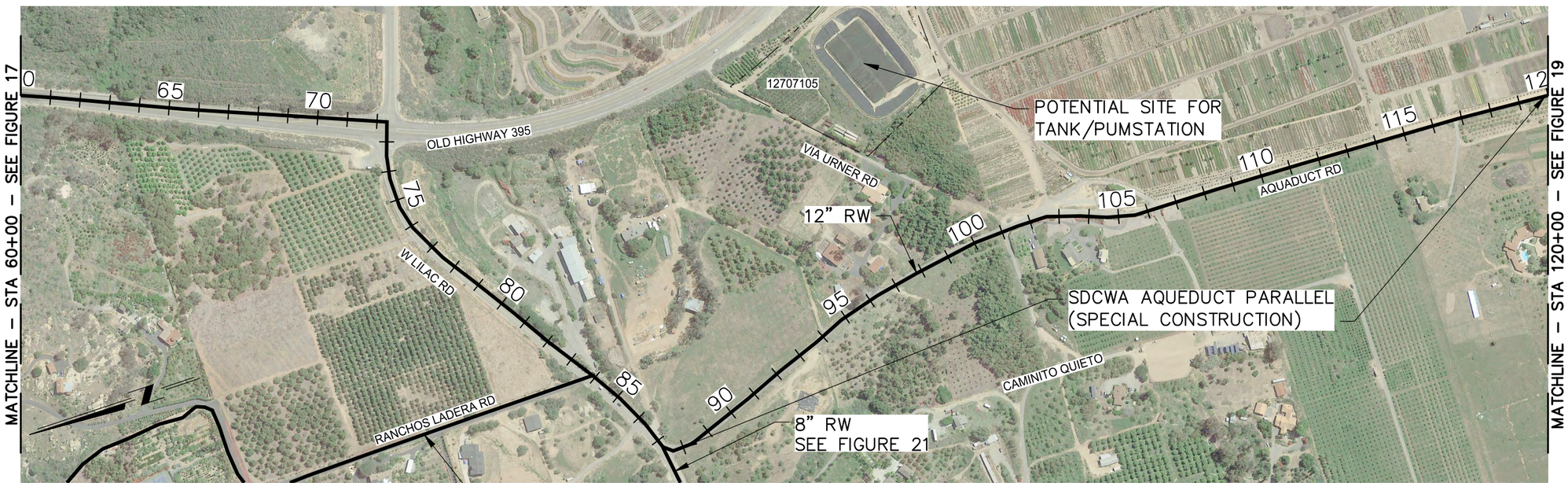


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



PLAN
SCALE: 1"=400'

GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

FIGURE 18

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

DUDEK

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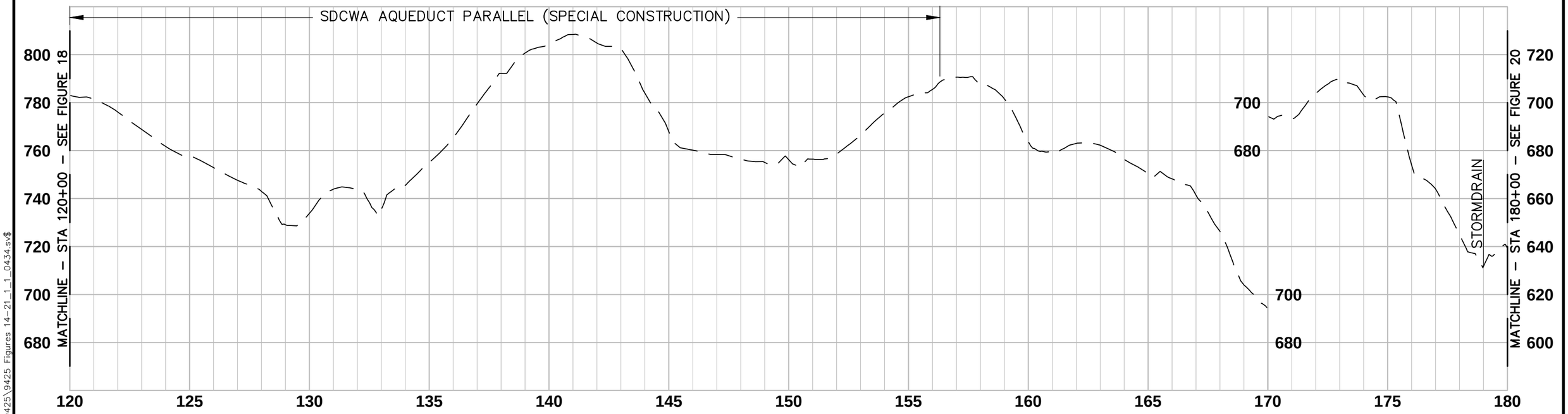
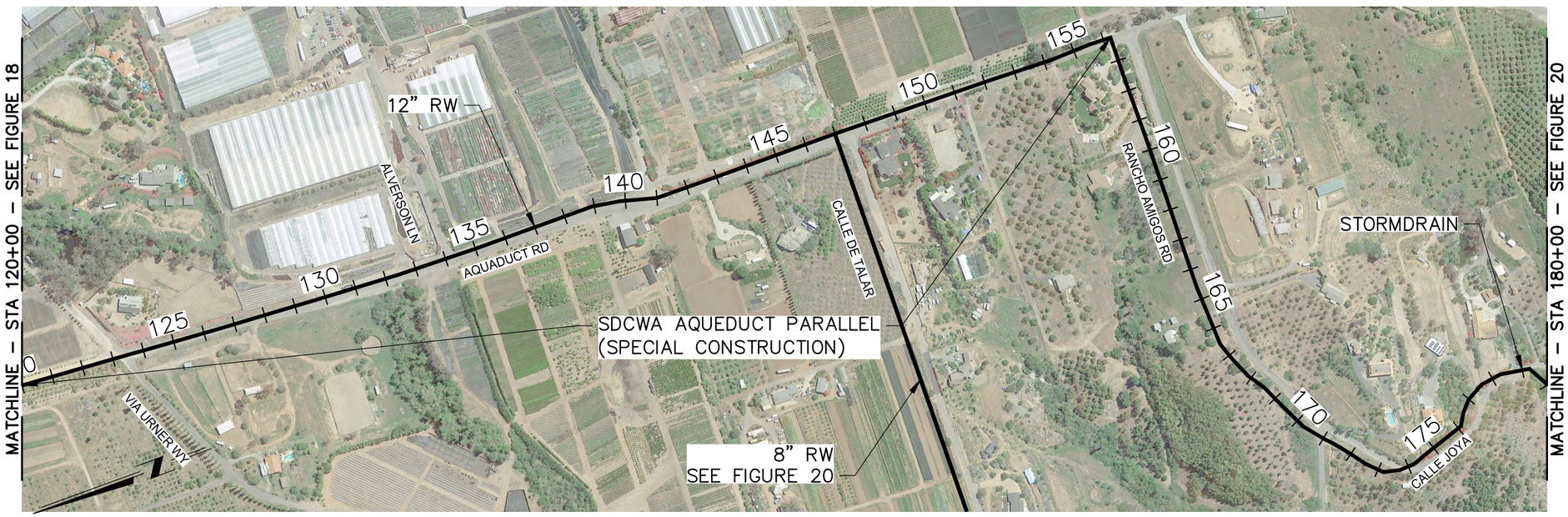


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

PLAN
SCALE: 1"=400'

FIGURE 19

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

DUDEK

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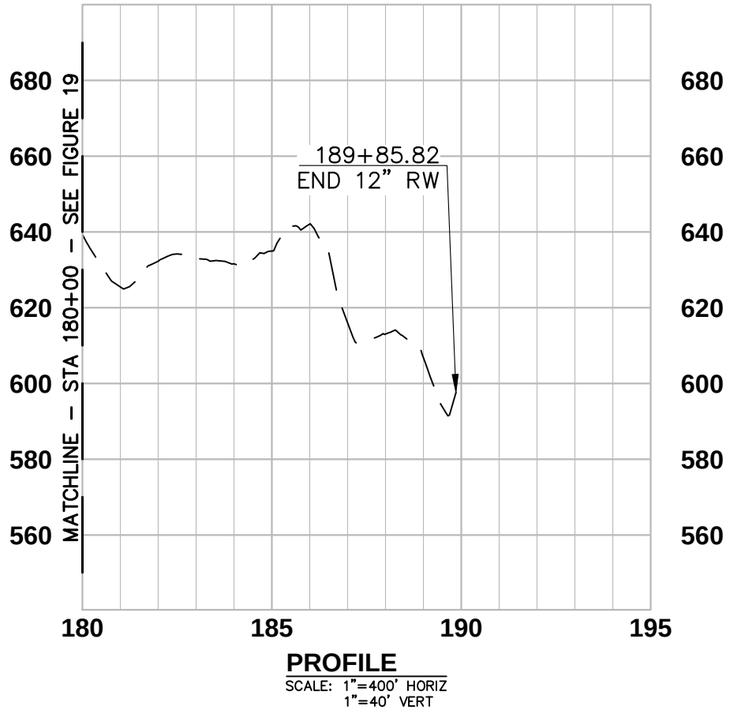
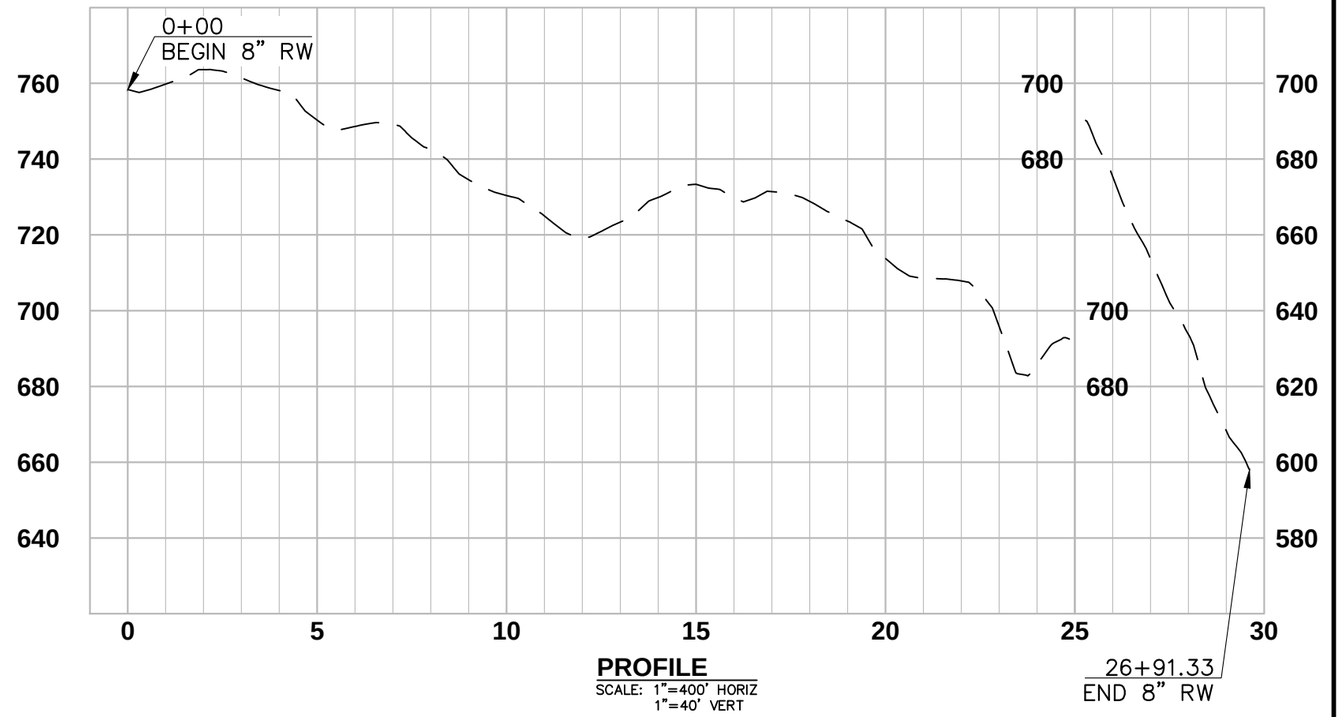
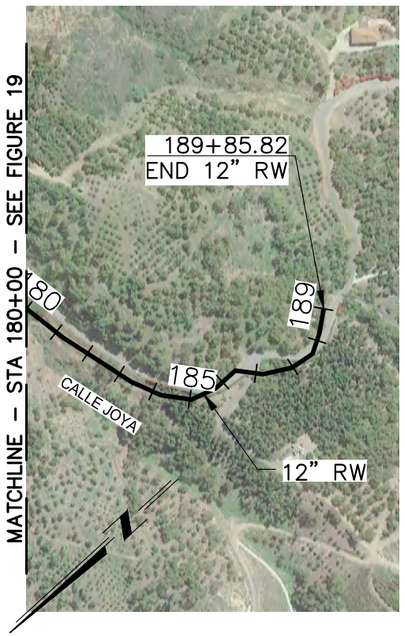


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



GRAPHIC SCALE
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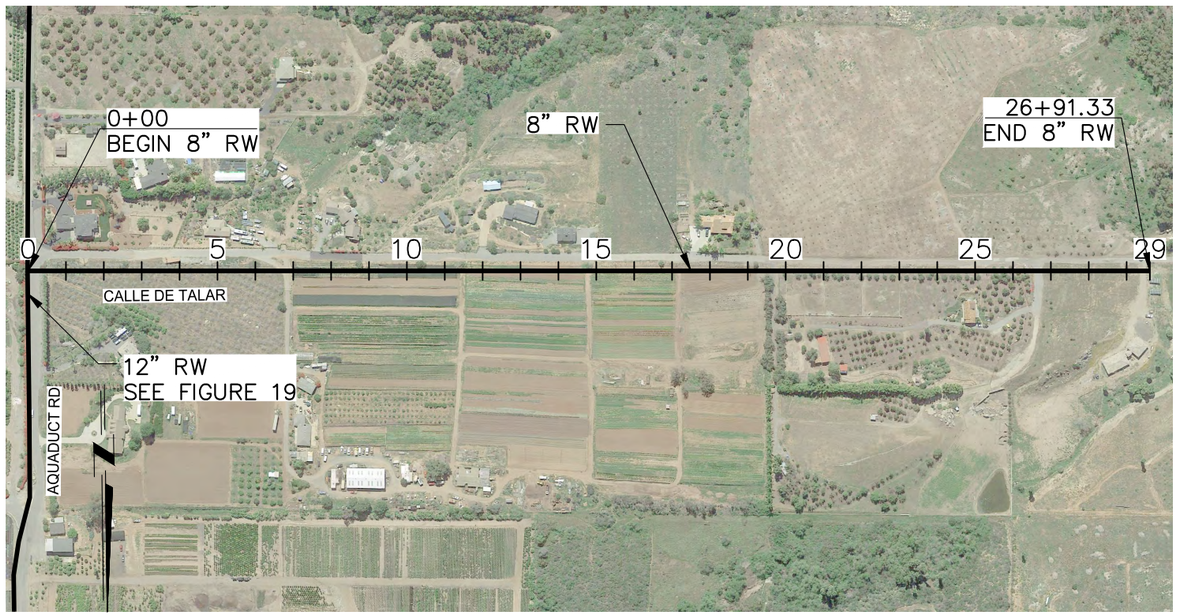
SCALE: 1" = 400'

PLAN
SCALE: 1"=400'



PLAN
SCALE: 1"=400'

FIGURE 20

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

DUDEK

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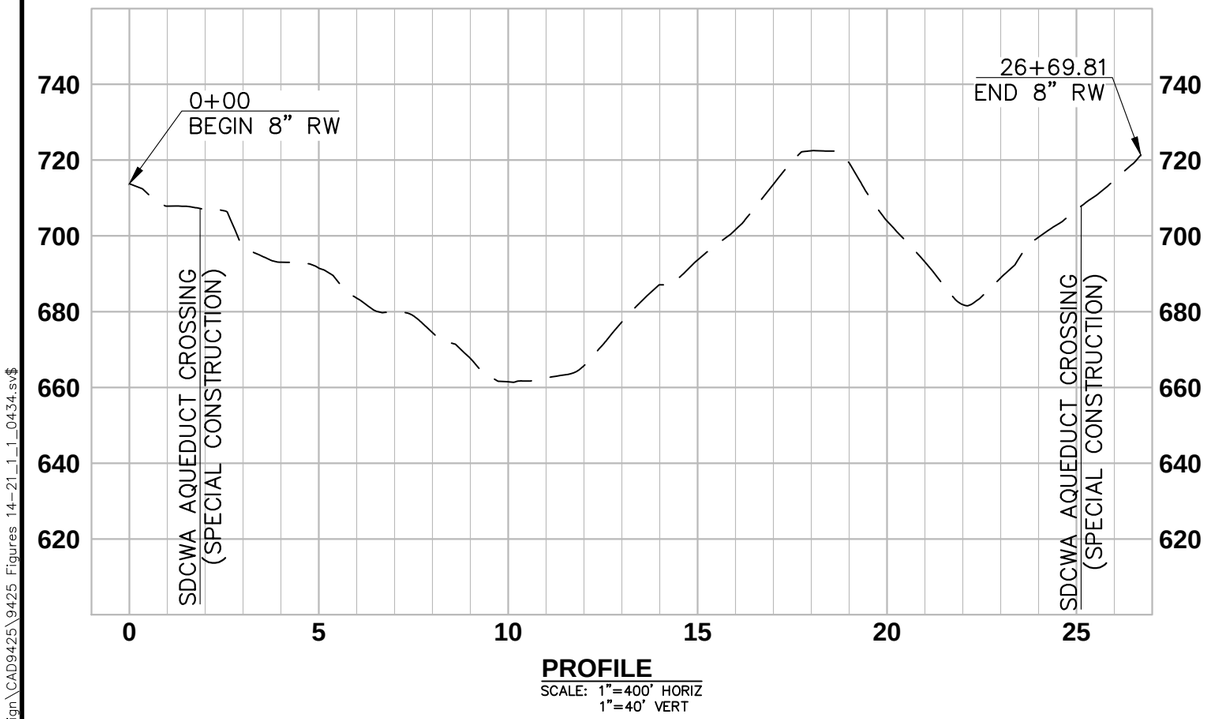
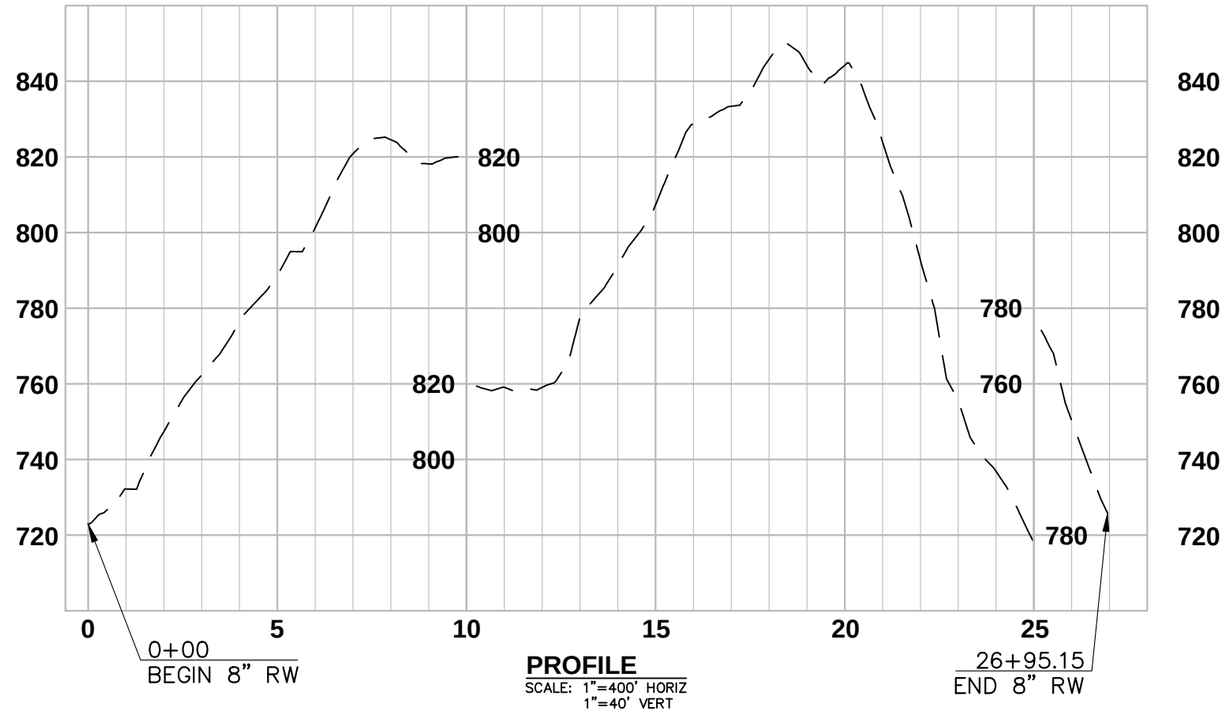
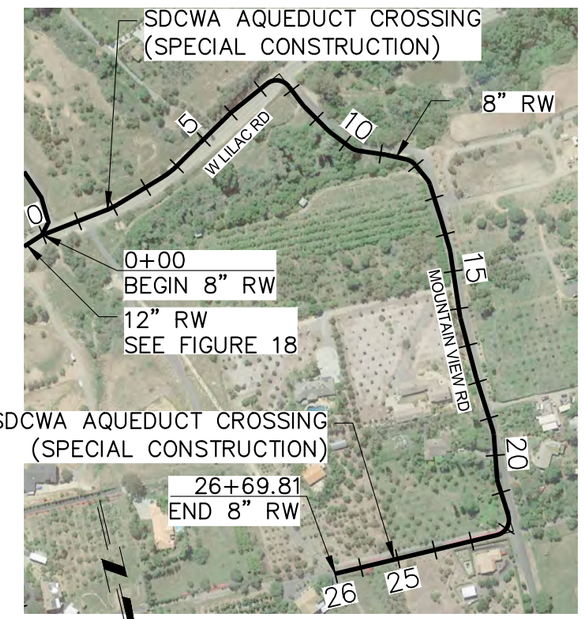


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT

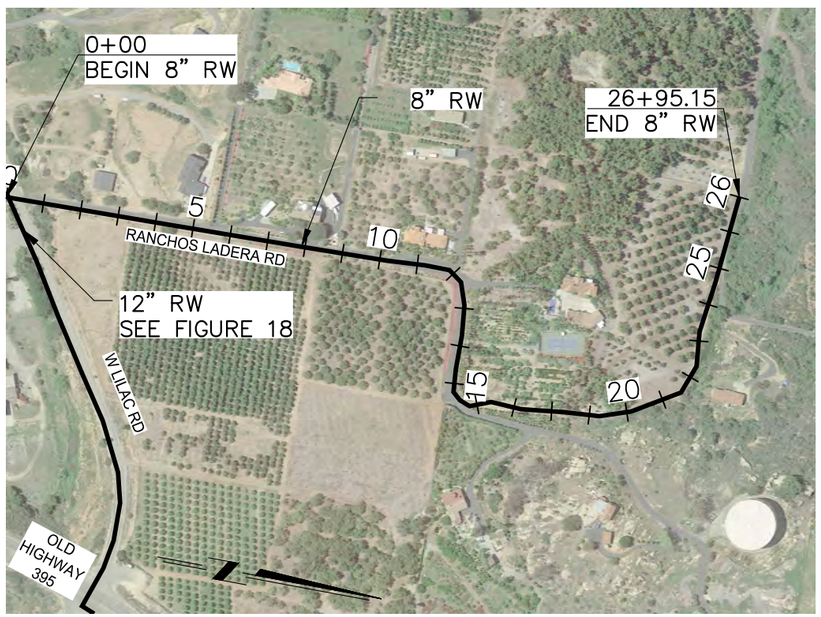


PROFILE
SCALE: 1"=400' HORIZ
1"=40' VERT



GRAPHIC SCALE
0 400'
SCALE: 1" = 400'

PLAN
SCALE: 1"=400'



PLAN
SCALE: 1"=400'

FIGURE 21

SECONDARY RECYCLED WATER ALIGNMENT
PRELIMINARY PLAN & PROFILE

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APPENDIX B

Opinion of Probable Cost

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Rainbow Municipal Water District

Water Reclamation Plant Recycled Water Distribution System Pre-Design Report Cost Analysis

Assumption/Parameters								
Total Wastewater Flow, 2030 (MGD)		1.62	mgd					
RW Conveyance (MGD)		1.62	mgd					
Cost of Power	$	0.11	per kWh					
				Alternative 1 - MBR WRF at LS2; RW from LS2		**Alternative 2a - All flow to Oceanside; RW from Oceanside; WW Upgrades**		**Alternative 2b - All flow to Oceanside; RW from Oceanside; EQ Basin Upgrades**
Capital Costs								
Wastewater Collection System								
Collection System Upgrades Upstream at LS2				$	-	$	650,000	$ 650,000
Upsize Outfall LS2 to Stallion MS				$	-	$	8,530,000	$ -
Repair Outfall LS2 to Stallion MS				$	-	$	-	$ 500,000
Equalization Basin				$	-	$	-	$ 4,192,800
Purchase of Additional SLR Capacity		0.12	mgd	$	-	$	2,400,000	$ 2,400,000
Sell-Back of SLR System Capacity (1.50 mgd)	$	5	gpd	**$**	**(7,500,000)**	$	-	$ -
Tertiary Treatment								
MBR Treatment Plant (includes demineralization)				$	30,406,300	$	-	$ -
Tertiary Treatment at SLR		$2		$	-	$	3,240,000	$ 3,240,000
Demineralization Treatment at SLR				$	-	$	1,600,000	$ 1,600,000
Recycled Water Distribution								
RW Pump Station at SLR (200 Add'l Hp)		$3,000	Hp	$	-	$	600,000	$ 600,000
RW Pump Station @ LS 2				incl. in WRF cost		$	-	$ -
RW Pipeline SLR to LS 2 (add'l capacity in O-side)				$	-	$	1,669,000	$ 1,669,000
RW Distribution Pipelines				$	13,184,000	$	13,184,000	$ 13,184,000
RW Booster Pump Station (20 Hp)		$5,000	hp	$	100,000	$	100,000	$ 100,000
RW Storage Tank (2 MG)		$1.50	gal	$	3,000,000	$	3,000,000	$ 3,000,000
Beck Reservoir Upgrades				$	1,500,000	$	1,500,000	$ 1,500,000
Environmental Documentation/Permitting				$	625,000	$	600,000	$ 600,000
Capital Cost SUBTOTAL				$	41,315,300	$	37,073,000	$ 33,235,800
Project Contingency		20%		*$*	*8,263,060*	*$*	*7,414,600*	*$ 6,647,160*
Insurance		1.5%		*$*	*620,000*	*$*	*556,000*	*$ 499,000*
Overhead & Profit		15%		*$*	*6,197,295*	*$*	*5,560,950*	*$ 4,985,370*
Bond		3%		*$*	*1,239,459*	*$*	*1,112,190*	*$ 997,074*
Soft Costs (Engineering, CM, Inspection, Admin)		12%		*$*	*4,448,760*	*$*	*4,448,760*	*$ 4,448,760*
CAPITAL COST TOTAL				**$**	**62,084,000**	**$**	**56,166,000**	**$ 50,813,000**
Annual Costs								
Annual O&M Service - WRF				$	868,000	$	-	$ -
EQ Basin O&M Service				$	-	$	-	$ 34,300
San Luis Rey O&M		$1,500	mn/mgd	$	-	$	130,760	$ 130,760
Maintenance/Replacment Fund (New WRF)		1%	cc WRF	$	304,000	$	-	$ -
Sludge Hauling				$	23,000	$	-	$ -
Power								
RW Pump, SLR to DB		750	TDH	$	-	$	199,600	$ 199,600
LS2 Pump to SLR		120	TDH	$	-	$	31,900	$ 31,900
RW Pump @ LS 2		750	TDH	incl. in WRF cost		$	-	$ -
RW Booster Pump		150	TDH	$	39,900	$	39,900	$ 39,900
Monthly SLR Usage Charge per Agreement (1.5 MGD)		$85,000	/ month	$	-	$	1,020,000	$ 1,020,000
Annual SLR System Maint/Replace Fund, RMWD Share								
WWTP, as % of Construction Cost		1.25%		$	-	$	543,750	$ 543,750
Outfalls, as % of Construction Cost		1%		$	-	$	60,000	$ 60,000
District Pipeline/Pump Station O&M Staffing				$	200,000	$	200,000	$ 200,000
Annual Potable Water Revenue Loss								
Annual Potable Water Revenues		-		*$*	*24,124,400*	*$*	*24,124,400*	*$ 24,124,400*
Annual Potable Water Purchase Cost		-		*$*	*21,295,300*	*$*	*21,295,300*	*$ 21,295,300*
Lost Revenue in Potable Water Sales				$	2,829,100	$	2,829,100	$ 2,829,100
Annual Projected Recycled Water Sales		$1,000	AF	$	(1,789,300)	$	(1,789,300)	$ (1,789,300)
Annual Recycled Water Purchased from O-side (135 af		$2,000	AF	$	-	$	270,000	$ 270,000
ANNUAL COSTS TOTAL				**$**	**2,475,000**	**$**	**3,536,000**	**$ 3,570,000**
Life Cycle Cost Analysis								
Time Frame (n)		30						
Escalation Factor (j)		2.50%						
i (%/year)		3.50%						
Amoritization Factor (A/P, i, n)		0.054						
Capitalization Factor (P/A)		25.3						
PRESENT WORTH OF ANNUAL COST				$	62,547,000	$	89,360,000	$ 90,220,000
TOTAL PRESENT WORTH COST				**$**	**124,631,000**	**$**	**145,526,000**	**$ 141,033,000**
EQUIVALENT ANNUAL COST				**$**	**6,776,000**	**$**	**7,912,000**	**$ 7,668,000**

Rainbow Municipal Water District

Water Reclamation Plant Recycled Water Distribution System Pre-Design Report Cost Analysis

Assumption/Parameters								
Total Wastewater Flow, 2030 (MGD)		1.62	mgd					
RW Conveyance (MGD)		1.62	mgd					
Cost of Power	$	0.11	per kWh					
				Alternative 1 - MBR WRF at LS2; RW from LS2		**Alternative 2a - All flow to Oceanside; RW from Oceanside; WW Upgrades**		**Alternative 2b - All flow to Oceanside; RW from Oceanside; EQ Basin Upgrades**
Capital Costs								
Wastewater Collection System								
Collection System Upgrades Upstream at LS2				$	-	$	650,000	$ 650,000
Upsize Outfall LS2 to Stallion MS				$	-	$	8,530,000	$ -
Repair Outfall LS2 to Stallion MS				$	-	$	-	$ 500,000
Equalization Basin				$	-	$	-	$ 4,192,800
Purchase of Additional SLR Capacity		0.12	mgd	$	-	$	2,400,000	$ 2,400,000
Sell-Back of SLR System Capacity (1.50 mgd)	$	-	gpd	**$**	-	$	-	$ -
Tertiary Treatment								
MBR Treatment Plant (includes demineralization)				$	30,406,300	$	-	$ -
Tertiary Treatment at SLR		$2		$	-	$	3,240,000	$ 3,240,000
Demineralization Treatment at SLR				$	-	$	1,600,000	$ 1,600,000
Recycled Water Distribution								
RW Pump Station at SLR (200 Add'l Hp)	$3,000	Hp		$	-	$	600,000	$ 600,000
RW Pump Station @ LS 2				incl. in WRF cost		$	-	$ -
RW Pipeline SLR to LS 2 (add'l capacity in O-side)				$	-	$	1,669,000	$ 1,669,000
RW Distribution Pipelines				$	13,184,000	$	13,184,000	$ 13,184,000
RW Booster Pump Station (20 Hp)	$5,000	hp		$	100,000	$	100,000	$ 100,000
RW Storage Tank (2 MG)	$1.50	gal		$	3,000,000	$	3,000,000	$ 3,000,000
Beck Reservoir Upgrades				$	1,500,000	$	1,500,000	$ 1,500,000
Environmental Documentation/Permitting				$	625,000	$	600,000	$ 600,000
Capital Cost SUBTOTAL				$	48,815,300	$	37,073,000	$ 33,235,800
Project Contingency	20%			*$*	*9,763,060*	*$*	*7,414,600*	*$ 6,647,160*
Insurance	1.5%			*$*	*732,000*	*$*	*556,000*	*$ 499,000*
Overhead & Profit	15%			*$*	*7,322,295*	*$*	*5,560,950*	*$ 4,985,370*
Bond	3%			*$*	*1,464,459*	*$*	*1,112,190*	*$ 997,074*
Soft Costs (Engineering, CM, Inspection, Admin)	12%			*$*	*4,448,760*	*$*	*4,448,760*	*$ 4,448,760*
CAPITAL COST TOTAL				**$**	**72,546,000**	**$**	**56,166,000**	**$ 50,813,000**
Annual Costs								
Annual O&M Service - WRF				$	868,000	$	-	$ -
EQ Basin O&M Service				$	-	$	-	$ 34,300
San Luis Rey O&M	$1,500	mn/mgd		$	-	$	130,760	$ 130,760
Maintenance/Replacment Fund (New WRF)	1%	cc WRF		$	304,000	$	-	$ -
Sludge Hauling				$	23,000	$	-	$ -
Power								
RW Pump, SLR to DB		750	TDH	$	-	$	199,600	$ 199,600
LS2 Pump to SLR		120	TDH	$	-	$	31,900	$ 31,900
RW Pump @ LS 2		750	TDH	incl. in WRF cost		$	-	$ -
RW Booster Pump		150	TDH	$	39,900	$	39,900	$ 39,900
Monthly SLR Usage Charge per Agreement (1.5 MGD)	$85,000	/ month		$	-	$	1,020,000	$ 1,020,000
Annual SLR System Maint/Replace Fund, RMWD Share								
WWTP, as % of Construction Cost	1.25%			$	-	$	543,750	$ 543,750
Outfalls, as % of Construction Cost	1%			$	-	$	60,000	$ 60,000
District Pipeline/Pump Station O&M Staffing				$	200,000	$	200,000	$ 200,000
Annual Potable Water Revenue Loss								
Annual Potable Water Revenues	-			*$*	*24,124,400*	*$*	*24,124,400*	*$ 24,124,400*
Annual Potable Water Purchase Cost	-			*$*	*21,295,300*	*$*	*21,295,300*	*$ 21,295,300*
Lost Revenue in Potable Water Sales				$	2,829,100	$	2,829,100	$ 2,829,100
Annual Projected Recycled Water Sales	$1,000	AF		$	(1,789,300)	$	(1,789,300)	$ (1,789,300)
Annual Recycled Water Purchased from O-side (135 af	$2,000	AF		$	-	$	270,000	$ 270,000
ANNUAL COSTS TOTAL				**$**	**2,475,000**	**$**	**3,536,000**	**$ 3,570,000**
Life Cycle Cost Analysis								
Time Frame (n)	30							
Escalation Factor (j)	2.50%							
i (%/year)	3.50%							
Amoritization Factor (A/P, i, n)	0.054							
Capitalization Factor (P/A)	25.3							
PRESENT WORTH OF ANNUAL COST				$	62,547,000	$	89,360,000	$ 90,220,000
TOTAL PRESENT WORTH COST				**$**	**135,093,000**	**$**	**145,526,000**	**$ 141,033,000**
EQUIVALENT ANNUAL COST				**$**	**7,345,000**	**$**	**7,912,000**	**$ 7,668,000**

APPENDIX C

Oceanside Agreement

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OCEANSIDE AGREEMENT ANALYSIS

As part of the preliminary design report effort, Dudek completed a review of the existing agreement between the City of Oceanside (City) and the Rainbow Municipal Water District (District). The *Agreement between the City of Oceanside, California and the Rainbow Municipal Water District for the Construction, Use, Maintenance and Operation of Wastewater, Transmission, Treatment and Disposal Facilities* (Agreement) was prepared and signed in February 2002, and has remained unchanged since that time. The following discussions compare and contrast the Agreement with similar inter-agency agreements currently being used by other North San Diego County agencies. The intent of this evaluation is to make recommendations for revision of the Agreement to better reflect a potential ongoing wastewater and recycled water relationship between the City and the District.

For the purposes of this evaluation, Dudek reviewed existing inter-agency agreements from the Encina Joint Powers Authority and San Elijo Joint Powers Authority. Each of these agencies participate with other local agencies in the collection, treatment and recycling of wastewater from its joint power members. As such, the agreements by which these agencies manage and control their respective systems are directly comparable to potential revision to the Oceanside/Rainbow Agreement.

Existing Oceanside-Rainbow Agreement

The District has rights to 1.5 mgd of sewer treatment and disposal capacity at the SLRWRF, a plant owned and operated by the City of Oceanside. The purpose of that agreement is to provide for the construction, operation, maintenance and replacement of the wastewater system serving the respective parties, and to define financial obligations of the two parties relative to those capital and annual costs.

The City of Oceanside is the defined owner of the wastewater facilities, including any future additions or other facilities constructed as a result of the agreement. Decisions with respect to planning, design, construction, operation and maintenance of the facilities are under the sole purview of the City. The District only retains the contractual right to use the system in accordance with the agreement. The City is obligated to operate the facilities in an economical and efficient manner, maintain the facilities in good repair, and comply with existing and future regulatory requirements.

At present, the District has rights to 1.5 mgd of the 13.5 mgd plant capacity (11.1 percent). As such, the District is responsible for 11.1 percent of the City's construction cost for plant improvements and betterment, including the collection system, pump stations, land outfall, and ocean outfall associated with the plant. The defined 1.5 mgd capacity right applies to treatment facilities equally. Within the collection system, there are a series of reaches with defined capacity rights based on tributary flow. The District maintains rights to 10 percent of the first reach and 58.25 percent of the second reach. The District has rights to 100 percent of the third reach. The Stallion Metering Station is the point of delivery between the District and City collection systems. Infiltration and inflow is contractually required to be controlled and

stormwater cannot be discharged to the collection system. The District cannot exceed 1,500,000 gallons per day for ten or more days in three consecutive months.

The agreement defines the limitations on the type and quality of wastewater that can be discharged to the SLRWRF and associated facilities. In general, these limitations include a Biological Oxygen Demand of less than 250 mg/L, Total Dissolved Solids of less than 1,200 mg/L, and Total Suspended Solids of less than 250 mg/L. Discharge of volatile organic compounds, heavy metals and other chemical constituents are also limited by the agreement. The quantity of wastewater is limited to a maximum of 1.5 million gallons in a 24-hour period, as measured over a ten day or more period for any three consecutive calendar days. The District is required to pay a penalty of 7.5 times the current unit cost for capacity, transmission and treatment if flows exceed the agreement limitations.

The agreement defines the various means and methods used to compute District cost on a monthly basis. The costs include both fixed and variable cost components. Billing to the District is projected at the beginning of each year based on the City's projected capital and operational costs. The District pays these costs on a monthly basis, with a reconciliation based on actual costs at the end of each fiscal year. In most years, the District receives a credit at the end of the year for overpayment of cost based on the initial cost projections. However, in the event of unforeseen cost events, the District is obligated to participate in all costs incurred at the end of the fiscal year. Interest charges are accrued at a rate of 10 percent per year on any unpaid balance. The City also charges the District an administrative cost of 2.7 percent of the District's identified charges. Recent annual cost to the District for wastewater treatment and disposal at the SLRWRF is approximately $70,000 to $80,000 per month ($850,000 to $1,000,000 per year). The existing agreement required the financial statements and records, and makes those records available to the District to review.

Regulatory actions and penalties are defined to be attributable to the offending agency, at the City's determination, or shared in accordance with wastewater strength and flow. Additional treatment required beyond that installed at the SLRWRF is at the cost of the party requiring the treatment facilities. The District cannot discharge wastewater from any area outside its service area, without prior City approval. City monitoring and reporting of the flow and strength of the District's wastewater must be maintained for District review. The City may transfer ownership of the plant at any time, with the District bound to the existing agreement.

Inter-agency Agreement Comparison

In review of the District's existing wastewater agreement, Dudek compared the agreement to other local agency agreements, including the Encina Joint Powers Authority and San Elijo Joint Powers Agreements. Each of these agreements contains language involving various contractual elements, and the three agency agreements primarily cover the same topics of discussion. The Encina JPA and San Elijo JPA agreements are considerably more recent agreements, each being amended most recently in 2014. The Encina JPA agreement is better suited for comparison to the District agreement. The following discusses comparisons between the Encina JPA (Encina) and Oceanside-Rainbow (District) Agreements.

- **Joint System Concept**. A considerable departure from the District and City agreement is the concept of a Joint System. The Encina agreement defines a joint system in which participating agencies have ownership within the joint system. The existing District agreement maintains a concept of City ownership of system facilities, with the District having capacity rights within the joint system. Both concepts are valid. Defining facilities under the agreement as a Joint System is considered to be more appropriate for an inter-agency agreement. This topic needs to be discussed further between the parties to develop a common understanding for a new agreement.

- **Definitions**. The Encina and District agreements provide detailed definition of agreement terminology, which are required to be updated based on a new agreement.

- **Service Area**. The District agreement does not provide a comprehensive description of the limits of the service area. The Encina agreement has considerably more information, outlining the service area, potential revisions to the service area, and prohibitions of discharges from outside the service area. It is recommended that a new agreement include a Service Area description similar to that of the Encina agreement.

- **Enlargement of the Joint System**. The Encina Agreement addresses the potential enlargement of the joint system facilities, particularly associated with the enlargement of the wastewater collection system. It is recommended that a new District agreement include discussion of this topic, as the existing sewer service area is considerably smaller than the District boundary area, resulting in potential for additional conveyance to the SLRWRF in the future.

- **Joint System Protection & Source Control**. The existing District agreement defines limitations on the types and condition of wastewater that can be discharged to the Joint System. Similarly, the Encina agreement addresses these same concepts. In general, these discussions assure that the participating agencies control infiltration/inflow, quality of discharges and other regulatory concerns relative to inter-agency wastewater transfers, and must remain in a new revised agreement.

- **Capacity and Capacity Use (Capacity Infringement)**. Both agreements address the issues of conveyance and treatment capacity, its use and the consequences of exceeding the available capacity. A new agreement is recommended to more thoroughly address the issue of capacity infringement. Also, the issue of capacity acquisition and sale of excess capacity is recommended to be further defined. It is possible that the District may have different capacity rights for the collection system, the treatment processes, and potential disposal options.

- **Capacity and Strength Monitoring**. The existing District agreement addresses the issue of flow and strength monitoring. It is anticipated that this language can be kept with updates for current conditions.

- **Capacity Reserves**. The Encina agreement includes a discussion on capacity reserves, where the conveyance, treatment and other processes include a reserve to allow time for potential future facility expansion, if necessary. It may be reasonable to address this concern in a new District agreement.

- **Recycling Rights**. The reviewed agreements provide each agency the right to recycle its own collected wastewater. Depending on the result of the alternative analysis relative to a District-owned treatment facility or connecting to the Oceanside recycled water system, it will be necessary to expand the recycled water discussion in the proposed new agreement to address return of recycled water from Oceanside to the District. Additionally, it will be necessary to include discussions regarding the wholesaling of recycled water by the City in the event that the District purchases recycled water beyond its contributed wastewater generation.

- **System Charges and Accounting**. The existing District agreement has an extensive discussion of the methods by which conveyance, treatment and other costs are apportioned. The City would be the operator and administrator for the Joint System facilities under the agreement. Annual operation and maintenance costs are apportioned based on wastewater flow and strength. Furthermore, it is necessary to apportion other Joint System costs, particularly O&M and capital expenses. Capital expansions may or may not be attributable to specific parties. It will be necessary to address future capital expenditures relative to ocean outfall facilities, particularly in light of recent political efforts to eliminate ocean disposal completely. Annual payment procedures, year-end adjustments, interest, and other monetary concerns must be fully addressed.

- **Joint Advisory Committee**. Most inter-agency agreements form an inter-agency committee to review and advise the parties and the Operator/Administrator with respect to Joint System facilities, including annual O&M, facility expansion, and associated cost review. The existing District agreement does not provide for such a committee, and it is projected that the City and District could benefit from its formation.

Drafting of a new District agreement will be required, regardless of the alternative analysis outcome. As a result, it is recommended that the District continue to engage the City with regard to recycled water collaboration, and in regards to updating the Oceanside agreement to reflect the current and future wastewater and recycled water conversation.

APPENDIX D

Recycled Water Market Analysis Results - Potential Recycled Water Customers

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Table D-1: Potential Recycled Water Customers 500 LF from proposed recycled water distribution system

Map ID	Acreage	Existing Land Use	Demand (gpm)	Demand (mgd)	Distance from Recycled Water System (LF)	Junction Number within Hydraulic Model
1	10.75	Avocado	67.25	0.10	500	J38
2	110.61	Landscape Irrigation	48.15	0.07	500	J124
3	18.91	Avocado	45.39	0.07	500	J38
4	12.06	Avocado	31.70	0.05	500	J30
5	21.24	Avocado	27.01	0.04	500	J114
6	5.89	Avocado	13.02	0.02	500	J88
7	3.96	Avocado	12.58	0.02	500	J28
8	3.68	Avocado	10.86	0.02	500	J108
9	19.00	Row Crops	10.49	0.02	500	J34
10	5.68	Avocado	9.84	0.01	500	J126
11	5.33	Avocado	7.41	0.01	500	J90
12	8.06	Avocado	7.21	0.01	500	J108
13	5.57	Avocado	6.77	0.01	500	J94
14	52.67	Landscape Irrigation	6.62	0.01	500	J124
15	5.12	Avocado	6.50	0.01	500	J50
16	4.02	Avocado	6.45	0.01	500	J98
17	5.04	Avocado	5.65	0.01	500	J26
18	2.31	Avocado	5.40	0.01	500	J104
19	8.06	Avocado	4.98	0.01	500	J28
20	8.79	Avocado	4.87	0.01	500	J126
21	3.12	Avocado	4.86	0.01	500	J114
22	2.83	Avocado	4.83	0.01	500	J50
23	4.31	Avocado	4.78	0.01	500	J94
24	2.45	Landscape Irrigation	4.75	0.01	500	J102
25	2.50	Avocado	4.53	0.01	500	J30
26	2.52	Avocado	3.93	0.01	500	J30
27	7.29	Avocado	3.87	0.01	500	J106
28	4.00	Avocado	3.69	0.01	500	J102

Table D-2: Potential Recycled Water Customers 1000 LF from proposed recycled water distribution system (not included in hydraulic analysis)

Map ID	Acreage	Existing Land Use	Demand (gpm)	Demand (mgd)	Distance from Recycled Water System (LF)
N/A	77.59	Avocado	114.42	0.16	1000
N/A	38.37	Ornamental Plants	76.82	0.11	1000
N/A	49.17	Ornamental Plants	38.23	0.06	1000
N/A	33.79	Row Crops	24.51	0.04	1000
N/A	10.05	Avocado	21.78	0.03	1000
N/A	10.92	Avocado	19.28	0.03	1000
N/A	11.96	Avocado	12.95	0.02	1000
N/A	5.38	Avocado	11.40	0.02	1000
N/A	8.82	Citrus	10.95	0.02	1000
N/A	11.69	Citrus	10.01	0.01	1000
N/A	5.86	Ornamental Plants	9.44	0.01	1000
N/A	0.00	Landscape Irrigation	7.38	0.01	1000
N/A	8.17	Ornamental Plants	6.88	0.01	1000
N/A	2.94	Avocado	6.48	0.01	1000
N/A	3.63	Avocado	5.88	0.01	1000
N/A	7.01	Avocado	5.26	0.01	1000
N/A	5.07	Avocado	4.81	0.01	1000
N/A	10.04	Row Crops	4.70	0.01	1000
N/A	3.08	Citrus	4.36	0.01	1000
N/A	20.91	Landscape Irrigation	4.27	0.01	1000
N/A	3.08	Avocado	4.14	0.01	1000
N/A	3.10	Landscape Irrigation	3.79	0.01	1000
N/A	3.27	Avocado	3.70	0.01	1000
N/A	5.39	Avocado	3.63	0.01	1000
N/A	2.00	Avocado	3.56	0.01	1000

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD ACTION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

DISCUSSION AND POSSIBLE ACTION TO AWARD A PROFESSIONAL SERVICES CONTRACT TO PROVIDE DESIGN SERVICES FOR THE PUMP STATION #1 NATURAL GAS MOTOR REPLACEMENTS PROJECT

BACKGROUND

Pump Station #1 is the largest of the District's 7 pump stations. Pump Station #1 pumps water from the North Zone to the Rainbow Heights Tank. The Rainbow Heights Tank stores 4 million gallons and has a high water level of 1,967 feet. The Rainbow Heights Zone extends north to Pump Station #7 and the Magee Zone, and is separated from the Gomez Zone to the east and south by closed valves. The Rainbow Heights Zone is the sole supply to the Magee Zone and serves as an emergency supply for the Gomez, Vallecitos, and North Zones. Demands in the Rainbow Heights Zone are approximately 0.54 MGD and are a mix of domestic and agriculture use.

Pump Station #1 consists of 2- 250 horse power (HP) pumps, 1 – 300 HP pump and 1 – 290 HP pump, with a total capacity of 3,509 gpm. The two natural gas engines, with 300 HP and 290 HP respectively, need to be replaced with electric motors due to Air Pollution Control Board permitting, age, and maintenance costs for the natural gas engines.

The intent of the design services will be to prepare a full set of plans and specifications suitable for bidding by a public agency along with multiple options to improve the pump station. The improvements will include removal of the two natural gas engines and replacement with electric drives and soft start motor control centers. In addition, the motor control centers for the two existing electric motors will be replaced with soft start control panels. Also, the main incoming electrical panel for the station will be replaced and an emergency backup natural gas powered generator with automatic transfer switch will be included in the design.

DESCRIPTION

The District conducted a search and issued a Request for Proposals on June 14, 2016. Two firms responded with proposals by July 13, 2016; PSOMAS and IEC. Staff reviewed the proposals and evaluated them based on the executive summary, project description, identification of the consultant, project organization and experience, past performance, firms local experience, and creative alternatives. This is a professional services contract - this is not a low bid process. While cost is a factor, it is not the determining factor in the selection. The staff evaluation found that while both firms were capable of doing the work, staff selected IEC for this project with a Not-To-Exceed project cost of $107,493.

POLICY

N/A

BOARD OPTIONS/FISCAL IMPACTS

1) Authorize staff to award a Professional services contract to IEC to provide design services for the Pump Station #1 Natural Gas Motor Replacements Project. The project is included in the District's CIP budget, with $800,000 total in expenditures expected in years 2016-2018.
2) Provide other direction to staff.

STAFF RECOMMENDATION

Staff recommends Option 1, Authorize staff to award a Professional services contract to IEC.

Michael Powers
Engineering Manager

August 23, 2016

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD ACTION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

DISCUSSION AND POSSIBLE ACTION TO ADOPT RESOLUTION NO. 16-18, APPROVING A LETTER OF UNDERSTANDING BETWEEN THE RAINBOW MUNICIPAL WATER DISTRICT AND THE RAINBOW EMPLOYEES ASSOCIATION

BACKGROUND

Historically, Systems Operators in the Water Operations Department have been assigned to an alternate work schedule while on Patrol Duty that included full shifts every day, including weekends and holidays. After a review of the operational needs of the District's water transmission and water treatment facilities, the District has determined that Patrol Duty for System's Operators is no longer required because operational needs can be met through remote monitoring and maintenance of the SCADA telemetry system.

DESCRIPTION

The current Rainbow Employees Association (REA) Memorandum of Understanding (MOU) includes Article 8 (Compensation), Section 7 (Standby Duty) and Section 8 (Patrol Duty).

The proposed Letter of Understanding (LOU) would amend Article 8 (Compensation), Section 7 (Standby Duty), and eliminate Article 8 (Compensation), Section 8 (Patrol Duty). All other Articles and Sections of the current MOU would remain unchanged.

The proposed LOU would remain in effect through the expiration date of the existing MOU, which is June 30, 2017.

POLICY/STRATEGIC PLAN KEY FOCUS AREA

NA

BOARD OPTIONS/FISCAL IMPACTS

The Board may approve the proposed LOU as written, approve the proposed LOU with revisions, or reject the proposed LOU.

The fiscal impact of this change is not expected to be significant. The exact fiscal impact is unknown, as it will depend upon the volume of future after-hours call-outs and overtime hours worked.

STAFF RECOMMENDATION

Staff recommends the Board adopt Resolution No. 16-18

Karleen Harp

Karleen Harp August 23, 2016
Human Resources Manager

RESOLUTION NO. 16-18

RESOLUTION OF THE BOARD OF DIRECTORS OF THE RAINBOW MUNICIPAL WATER DISTRICT APPROVING A LETTER OF UNDERSTANDING WITH THE RAINBOW EMPLOYEES ASSOCIATION TO MODIFY THE CURRENT MEMORANDUM OF UNDERSTANDING

WHEREAS, the Rainbow Employees Association has met and conferred with the Board of Directors through the General Manager to negotiate limited changes to the Memorandum of Understanding; and

WHEREAS, the employees and Board have reached agreement on terms of employment; and

WHEREAS, the modified terms have been included in the Letter of Understanding; and

WHEREAS, all other sections of the MOU covering the term of August 15, 2014 through June 30, 2017 remain in effect for the remainder of the contract;

NOW, THEREFORE, IT IS HEREBY RESOLVED, DETERMINED AND ORDERED that the Board of Directors of Rainbow Municipal Water District adopts Resolution 16-18, approving the Letter of Understanding with the Rainbow Employees Association for the remainder of the MOU term that ends on June 30, 2017.

PASSED AND ADOPTED at a regular meeting of the Board of Directors of Rainbow Municipal Water District held on the 23rd day of August, 2016 by the following vote, to wit:

AYES:
NOES:
ABSENT:
ABSTENTIONS:

_____
Dennis Sanford, Board President

ATTEST:

_____
Dawn Washburn, Board Secretary

The Rainbow Employee Association (REA) and Rainbow Municipal Water District have met and conferred and agree to this Letter of Understanding that is in effect from July 1, 2016 through the end of the current REA Memorandum of Understanding (MOU) term that ends on June 30, 2017. The parties have agreed to the following:

AMENDMENT TO REA MOU

The REA Memorandum of Understanding (MOU) effective August 15, 2014 to June 30, 2017, is hereby revised to reflect changes in the District's Standard Operating Procedures due to changes in operational needs. The new language for Article 8, Sections 7 and 8 are amended as follows:

Article 8 – Compensation

SECTION 7 STANDBY DUTY

a. Standby Duty Pay

When an employee is assigned to Standby Duty, a weekly stipend of $250 will be paid. The stipend pay is consideration for performing daily Standby Duties of an incidental nature and increment of time ("Incidental time").

Incidental time includes, but is not limited to short phone calls, and reading or responding to email or text messages or filling out required paperwork that take five (5) minutes or less of the employee's time. Incidental time included in the stipend is not eligible for additional pay unless the cumulative incidental time for the workweek collectively exceeds one hour. However, incidental time which exceeds one hour in a workweek will be compensated.

b. Holiday Pay

Employees on Standby Duty who work overtime on a District recognized holiday or Easter Sunday will be paid according to the holiday pay provisions in Article 8, Section 5-A, Overtime Rate.

c. Pay for Time Worked Outside of Regular Hours

Employees will be paid for the actual time worked outside of the employee's regular hours when responding to an alarm or call at the applicable rate of pay. Employees on Standby Duty will not be compensated if the employee does not perform any work. Compensatory time is not accruable for overtime hours worked while assigned to standby duty.

d. Water Operations Standby Duty

For employees assigned to Water Operations Standby Duty, approved time allowed to perform the routine daily Standby Duty tasks after the System Operator's regular working hours associated with monitoring the system and perform daily flow changes will be as follows:

- Up to 1 hour per day on regular work days, paid at the applicable rate of pay.
- Up to an additional 1 hour per day on Fridays off and weekends at the applicable rate of pay.

When the Operator can't resolve an issue remotely and has to drive in to perform work, he/she will be compensated for roundtrip travel time to and from the site location to resolve the issue. The Operator will not be compensated for non-business related travel time at any time.

While on a call-out, if the Operator receives the second call-out, the Operator will be paid for actual time spent traveling to the second call, resolving that call-out and for the travel time to his/her residence. Time for the previous call-out will end when the Operator starts response to the second call-out.

When alarms or calls occur between 11:00 PM and 5:00 AM, the Systems Operator will be paid for a minimum of 30 minutes to respond.

Operators may not accrue compensatory time during the weeks they are assigned to Water Operations Standby Duty.

SECTION 8 PATROL DUTY

As Patrol Duty has been eliminated, Article 8, Section 8 of this Memorandum of Understanding is no longer in effect.

Approved by the Board of Directors of Rainbow Municipal Water District on August 23, 2016.

RAINBOW MUNICPAL WATER DISTRICT	RAINBOW EMPLOYEES ASSOCIATION
_____	_____
Dennis Sanford, Board President	Stephen Coffey, REA President
_____	_____
Date	Date

MEMORANDUM OF UNDERSTANDING

Between the

RAINBOW MUNICIPAL WATER DISTRICT

and the

RAINBOW EMPLOYEES ASSOCIATION

August 15, 2014 to June 30, 2017

Preamble

This Agreement made and entered into this 26th day of August, 2014, to be effective the beginning of the August 15, 2014 pay period and between Rainbow Municipal Water District, hereinafter referred to as the District, and the Rainbow Association of Employees, hereinafter referred to as the Association.

Witnesseth:

WHEREAS, the District has voluntarily endorsed the practices and procedures of collective negotiations as a fair and orderly way of conducting its relations with its employees insofar as such practices and procedures are appropriate to the functions and obligations of the District to retain the right to operate the District effectively in a responsible and efficient manner; and

WHEREAS, it is the intent and purpose of the parties to set forth herein their entire Agreement covering rates of pay; wages, hours of employment, and other conditions of employment; to increase the efficiency and productivity of employees in the District; and to provide for prompt and fair settlement of grievances without an interruption of or other interference with the operation of the District;

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties do mutually covenant and agree as follows:

Both parties mutually agree that their objective is for the good and welfare of the District and Association members alike. Both parties further agree that in the interest of collective bargaining and harmonious relations they will at all times abide by the terms and conditions as hereafter set forth and agree upon. The District and Association regard all personnel as public employees who are to be governed by high ideals of honor and integrity in all public and personal conduct so as to merit the trust and confidence of the general public and fellow employees.

Article 1 Recognition

The District recognizes the Rainbow Employees Association as representative of the representation unit set forth below, if said Association represents a simple majority of the District's non-management, maintenance and operations employees. The District agrees to meet and confer with said Association on all matters relating to the scope of representation pertaining to the employees of said representation unit, as required by the Meyers Milias Brown Act and other laws. The recognized representation unit shall consist of all non-supervisory and non-confidential employees of the District, with the exception of confidential employees who are affiliated with the Association.

Article 2 Implementation

It is agreed that this Memorandum of Understanding shall not be effective until the District Board of Directors:

1. Acts, by majority vote, formally to approve and adopt said Memorandum of Understanding;

2. Acts to budget the necessary funds required to implement the provisions of the Memorandum of Understanding which require funding;
3. Agrees to work under provisions of existing Memorandum of Understanding until a successor agreement is reached; and

4. Agreement is signed by the designated District Board of Director and Association representative.

Article 3 Term

The term of this Memorandum shall commence on August 26, 2014 with an effective date of August 15, 2014 and shall expire and otherwise be fully terminated at 12:00 midnight on June 30, 2017.

Article 4 Renegotiation

In the event that the Association and the District desires to negotiate the provisions of a successor Memorandum of Understanding, said party shall serve upon the other not later than February 15, 2017 its written request to commence negotiations. Upon receipt of such written notice, meet and confer shall begin no later than March 15, 2017 unless written notice is given by either party and agreed to by the other party prior to February 15, 2017 agreeing to an alternate starting date. Target date for completion of negotiations is June 14, 2017.

Article 5 Non-Discrimination

The District and the Association mutually agree that there will be no discrimination against any employee in the application of the terms of this Agreement by reason of race, sex, age, physical or mental disability, religion or any other category protected by applicable federal, state or local law. The District and Association agree that the District is permitted to take all actions necessary to comply with all applicable federal, state and local laws and regulations, including but not limited to the Americans with Disabilities Act, and including all new laws and regulations enacted during the term of this Agreement, regardless of any provisions of this Agreement. The parties recognize and agree fully to protect the rights of all employees covered hereby to join and not join and participate in Association activities.

Article 6 Me-Too Clause

During the term of this MOU, if the District provides any other bargaining units a COLA adjustment different from this Agreement then the District shall adjust the difference contained in this Agreement so that they are equal to the percentage salary granted to employees in the other bargaining units. Such adjustments shall be effective at the time the salary adjustment is granted to the employees in the other bargaining units. In addition, the District shall adjust the Medical Insurance provisions contained in this Agreement so that they are equal to the Medical Insurance provisions contained in the other bargaining units' agreement.

Article 7 Probationary Employees

The probationary period of 2080 work hours shall be regarded as part of the examination process, and shall be utilized for closely observing the employee's work, and for securing the most effective adjustment of the employee to the position.

Intent: Work hours are defined as regularly scheduled work hours.

The discipline or discharge of an employee who is in the probationary status shall not be a violation of this Agreement, and the employee and Association shall not have recourse to the grievance process.

Probationary employees will be given a performance evaluation at the completion of 700, 1400, and 2080 work hours during their probation. All probationary employees shall be subject to a probationary period of 2080 work hours. During the probationary period an employee may be rejected at any time by Management staff without right of appeal. A rejection during the probationary period shall be effected when Management files a termination notice with Human Resources, stating the reason for the rejection, and the effective date, which shall not be later than the last day of the probationary period.

All probationary employees will accrue Paid Time Off beginning the first day of employment; however, these hours will be granted after the completion of 90 days of full-time employment.

All probationary employees will be paid for overtime per the Overtime Policy and are not eligible to accrue compensatory time until successful completion of their probationary period.

Article 8 – Compensation

SECTION 1 WAGES

Effective the beginning of the August 15, 2014 pay period, employees will receive a 1.5% Cost of Living Adjustment (COLA). A 2% COLA will be effective the beginning of the July 3, 2015 and the July 1, 2016 pay periods.

Salary ranges are established in the Rainbow Municipal Water District Salary Range Table Hourly Rates.

The resulting salary tables are adopted by a separate action of the Board of Directors and are included in the following pages as reference only.

SECTION 2 DEFERRED COMPENSATION MATCHING PROGRAM

Beginning the first pay period of August 15, 2014 the District will provide a matching program of up to $100.00 per pay period per employee. The District's contribution would only be required if an employee contributes a like amount or more to the deferred compensation program.

SECTION 3 MERIT INCREASES

All employees shall be eligible for a merit increase after satisfactorily completing their probationary period and each year thereafter. Employees shall receive a 2.5% annual merit increase for a satisfactory overall performance evaluation or a 5% annual merit increase for an above satisfactory or more overall performance evaluation until the employee has reached that classification's top step. Each employee will be eligible to earn up to a maximum of a 5% increase in a one year period.

If an employee's performance evaluation is fifteen (15) working days or more overdue the employee may petition the General Manager—verbally or in writing—to intervene in ensuring the evaluation is completed in a timely manner. The General Manager will, within fifteen (15) working days, see to it the employee's evaluation is completed and reviewed with the employee.

SECTION 4 ONE-TIME MERIT AWARD

When an employee has been at the top step of his/her classification for a year or more, the employee will be eligible for a 2 ½% merit award as a lump sum payment at his/her next annual evaluation with an overall rating of above satisfactory or better. Employees will be eligible for this award once during this 3 year MOU.

SECTION 5 OVERTIME

A. Rate

Except as otherwise provided in this Agreement, employees covered by this Agreement shall be paid at the rate of one and one-half times their regular rate of pay for all authorized hours of work in excess of nine (9) hours per day Monday through Thursday and eight (8) hours per day on Fridays or 40 hours per week. Employees will be paid at a rate of double their regular rate of pay for all authorized hours of work in excess of twelve (12) hours per day or in excess of eight (8) hours on the seventh (7^{th}) straight day on any given week.

If an employee's overtime work period extends beyond eight (8) consecutive hours and the work period extends past 6:30 a.m. between Monday through Thursday and 7:00 a.m. on Friday, the employee will be paid at the overtime rate until they are released to go home.

Overtime worked on a holiday as listed in the Employee Handbook and Easter Sunday will be paid at two times the regular rate of pay for standby and call back.

Department Heads, Superintendents and Supervisors will make every attempt to release employees as soon as practical.

B. Scheduling

Overtime shall be distributed as equally as practical among the employees within the divisions of the District, except where emergencies or other existing conditions make equalization impractical or inefficient for the division.

C. Holiday Call Out Pay

In order to ensure response to potential emergency call backs on holidays and holiday weekends, a Department Head may request an employee or employees to be available for call out or to standby. The employee(s) will receive two (2) hours pay at overtime rates (per Section 5 Overtime, Item "A" Rate) for the evening of the work day prior to the holiday or holiday weekend and for each non-work day during the holiday and/or holiday weekend. If the employee(s) is called out to work they will receive additional pay for hours worked in accordance with the current overtime rate.\

Intent:
Holiday weekend where holiday falls on Monday: Two (2) hours standby pay each day Friday through Monday = a total of 8 hours.

Thanksgiving holiday weekend: Two (2) hours standby pay each day Wednesday through Sunday = a total of 10 hours.

If a holiday falls on Tuesday: Two (2) hours standby pay Monday and Tuesday = a total of 4 hours.

If holiday falls on Wednesday and Thursday: Two (2) hours standby pay Tuesday, Wednesday and Thursday = a total of 6 hours.

SECTION 6 CALL BACK

A. Definition

Call back pay work is defined as time required of an employee who, following the completion of the employee's normal work day and departure from the district, is ordered to report back to duty to perform necessary work. If an employee is called and the call back situation can be resolved by telephone without the employee actually returning to the district, the employee shall record the actual time spent resolving the matter on their time sheet. An employee will be paid for hours worked as specified in the Overtime Section.

B. Minimum Hours for a Call Back

Employees responding to a call back shall record the actual number of hours worked on the call back, with two (2) hours of time being the minimum number of hours recorded on their time sheet for the work performed. In addition to the two (2) hour minimum, if an employee is called back and performs actual work, he/she will be compensated for up to a total of one (1) additional hour travel time. Travel time is based on the actual time required to return to and from work with a maximum of 30 minutes each way.

Intent: Actual work means physical work at a job site or at the District = 2 hours
Travel time example: 10 minutes each way = 20 minutes
45 minutes each way = 60 minutes (1 hour)

SECTION 7 STANDBY DUTY

Article 7, Compensation; Section 7 Standby and Section 8 Patrol will be eliminated and replaced with the Water Standby Duty Standard Operating Procedure, Wastewater Standby Duty Standard Operating Procedure and the Water Operations Patrol Standard Operating Procedure. However Section 7, Item E - Standby Duty Pay and Section 8, Item C – Patrol Duty Pay and Section 8, Item D – Holiday Pay will remain in the Memorandum of Understanding as a negotiable item.

Standby Duty Pay

When an employee is assigned standby duty, a weekly stipend shall be given. The amount of the stipend shall be $250.00 per week. An employee will be paid for hours worked as specified in the Overtime Section and may not accrue as compensatory time.

Intent: Compensatory time is not accruable in order to maximize available work time during regular work hours.

SECTION 8 PATROL DUTY

Article 7, Compensation; Section 7 Standby and Section 8 Patrol will be eliminated and replaced with the Water Standby Duty Standard Operating Procedure, Wastewater Standby Duty Standard Operating Procedure and the Water Operations Patrol Standard Operating Procedure. However Section 7, Item E - Standby Duty Pay and Section 8, Item C – Patrol Duty Pay and Section 8, Item D – Holiday Pay will remain in the Memorandum of Understanding as a negotiable item.

Patrol Duty Pay

When an employee is assigned patrol duty, a weekly stipend shall be given. The amount of the stipend shall be $250.00. An employee will be paid for hours worked as specified in the Overtime Section and may not accrue as compensatory time.

Intent: Compensatory time is not accruable in order to maximize available work time during regular work hours.

Holiday Pay

Employees on Patrol who work on any approved holidays as listed in the Employee Handbook, or on Easter Sunday, shall be paid the following premium rates in addition to their regular holiday pay: (1) For the first nine (9) hours worked Monday through Thursday or eight (8) hours worked on Friday: time and one-half; and (2) for all hours worked in excess of nine (9) hours Monday through Thursday or eight (8) hours Friday: double-time.

SECTION 9 SAFETY HOURS

A. Definition

A minimum amount of non-work hours following an emergency or scheduled work shift. Emergency work is when notification to work is provided with less than 24-hour advance notice. Scheduled work is when notification to work is provided with at least 24-hour advance notice.

B. Required Time Off

Safety hours are non-working hours to allow employee adequate rest after working long overtime shifts. Safety hours are considered hours worked for purposes of PERS and IRS reporting.

In the event an employee works at least 12 hours in a work day and his/her overtime work ends between the hours of 3:00 a.m. and 6:30 a.m. Monday through Thursday or 7:00 am on Friday, the employee will be granted nine (9) safety hours Monday through Thursday or eight (8) safety hours on Friday provided it is a consecutive work day.

EXAMPLE: An employee ends his/her regular work shift at 4:00 p.m. but continues to work on emergency overtime until midnight. Safety hours do not apply because he/she did not end his/her shift between 3:00 a.m. and 6:30 a.m. Monday through Thursday or 7:00 a.m. on Friday.

EXAMPLE: An employee ends his/her shift at 4:00 p.m. and is called back at 11:00 p.m. and works until 3:30 a.m. Safety hours apply because the employee worked at least 12 hours in a work day and worked until 3:30 a.m. (which falls between the hours of 3:00 a.m. and 6:30 a.m. Monday through Thursday or 7:00 a.m. on Friday.)

EXAMPLE: An employee works Saturday from 5:00 p.m. until Sunday at 6:00 a.m. Safety hours do not apply because Sunday is not a normal work day.

If an employee has worked at least 12 hours in the work day and his/her overtime extends past 6:30 a.m. Monday through Thursday or 7:00 a.m on Friday. the next scheduled work day, the employee will be paid over time for the hours worked and the remaining hours under safety hours to equal a normal work day.

EXAMPLE: An employee works until 9:00 a.m. and is released to go home. The employee will receive two and one-half (2 ½) hours overtime and six and one-half 6 1/2) safety hours Monday through Thursday or two (2) hours overtime and six (6) hours safety hours on Friday.

In addition to the above, supervisors have the discretion to assign safety hours to an employee or to require an employee to take other leave if the supervisor has observed/determined the safety hours are needed after the employee has worked a long overtime shift, or the employee has approached the supervisor of his/her concerns to work safely due to fatigue resulting from a long overtime shift.

SECTION 10 COMPENSATORY TIME

When any employee works overtime, the employee may be compensated by the use of compensatory time at a rate, either one and one-half or double his/her regular rate of pay as specified in the Overtime Section, except for Standby Duty or Patrol Duty.

Probationary employees are not eligible to accrue compensatory time during their 2080 work hour probationary period.

No employee shall be allowed to accumulate over 50 hours of compensatory time without written permission of the department head. Any time over 50 hours shall not be eligible for accumulation and shall be included as hours paid in the employee's paycheck for the period earned. Compensatory time shall be granted at such times and in such time blocks as are mutually agreed upon between the involved employee and his/her supervisor; permission to utilize compensatory time off shall not be unreasonably denied by the supervisor if operating requirements will not be adversely affected.

All unused compensatory time will be paid out on the last pay day in June if not used prior to that time.

Upon separation from the District employees shall be reimbursed for 100% of their accumulated compensatory time balance at their present rate of pay.

SECTION 11 OUT OF CLASS PAY

Full Responsibility

An employee specifically assigned in writing to perform the duties of the higher level position for 31 or more days shall be compensated for lead responsibility at 10% of the employee's current rate of pay.

Intent: Leaves of 31 days or more, military leave, long-term disability.

Lead Responsibility

An employee specifically assigned in writing to perform a portion of the duties of a higher level position for 11 through 30 days shall be compensated for lead responsibility at 7.5% of the employee's current rate of pay.

District shall refrain from rotating staff assignments for the sole purpose of avoiding paying out of class pay; however, the District may rotate employees for training, scheduling, performance or other management rights purposes.

At the conclusion of such an assignment, the employee shall be restored to the employee's former classification regardless of the time involved.

Article 9 – Paid Time Off

SECTION 1 ACCRUAL RATE

Paid Time Off shall be granted to each employee and shall be accrued on a daily basis prorated as follows:

Period of Service	PTO Hours per Year	Maximum Accrual
0 through completed 4th year	200 hours	400 hours
Start of 5th year through completed 9th year	240 hours	480 hours
Start of 10th year and on	280 hours	560 hours

Employees may accumulate Paid Time Off up to a maximum of two times the employee's annual entitlement. Upon reaching the maximum, accrual will cease. If a General Leave request has been previously approved by the District, and through no fault of the employee the leave request is cancelled by the District and an employee reaches the maximum accrual then the District will compensate the employee for additional hours accumulated beyond the maximum accrual until the requested leave can be granted.

SECTION 2 SEPARATION FROM DISTRICT EMPLOYMENT

Paid Time Off

Upon separation from the District an employee shall be reimbursed for 100% of their accumulated paid time off at their present rate of pay.

SECTION 3 PAID TIME OFF BUY BACK

Employees may cash out accrued paid time off (PTO) of a minimum of 40 hours once per year with the following stipulations:

- An IRREVOCABLE request must be completed and submitted during the month of December for cashing out PTO in the following calendar year.
- The irrevocable request must state which month of the following calendar year the PTO cash out is to occur. The cash out will be paid on the last day payday
- The irrevocable request may not exceed one year's PTO accrual (200, 240, 280 hours).
- Employee must have taken at least ten days cumulative leave (PTO) within the previous twelve-month period.
- Employee must maintain a minimum balance of 120 hours of accrued PTO.
- A request to cash out accrued PTO due to reasons of hardship may be made at any time. The hardship request must be approved by the general manager and is subject to the unforeseeable emergency definitions of the internal revenue code. (Title 26, section 1.409a-3).

This language will remain in effect as long as the IRS makes no other changes or the district and associations negotiate to eliminate the PTO buy back option.

Article 10 – Other Leaves of Absence

SECTION 1 JURY DUTY

Any employee who is called for jury duty will receive up to ten (10) working days of jury duty pay per calendar year, providing the employee submits written proof of actual jury duty service. ***The intent of the written proof is to show the employee was actually called in to jury duty and was not merely "on call" for jury duty. Being called in for a jury pool is considered jury duty.***

SECTION 2 WORKERS' COMP FOLLOW-UP MEDICAL VISITS

Any employee who requires medical care for a job-related injury or illness shall receive regular pay while obtaining medical care on the day the injury or illness is first reported, assuming such medical care occurs during regular work hours.

However, any follow-up and/or additional treatment appointments will be scheduled as late in the day as possible and employees will be required to use PTO or any other leave time on accrual. If no leave time is available, the time from work will be unpaid.

SECTION 3 HOLIDAYS

The District will provide 12 paid holidays as defined in the Employee Handbook.

Whenever a designated holiday falls on a Sunday, the holiday will be observed on the following Monday. Whenever a designated holiday falls on a Saturday, the holiday will be observed on the preceding Friday. An employee is eligible for holiday pay if they work the day before and the day after the holiday or are absent with approved leave.

Article 11 – Uniforms

The District shall provide up to eleven (11) uniform (shirts and pants) changes biweekly to employees who are required to wear uniforms and where customer recognition as a District employee is required. The District shall reserve the right to select the style and color of the work clothing. Employees wishing more than eleven changes of uniform shirts or pants biweekly may obtain additional changes from the District's supplier at the employee's expense. The District shall provide one (1) jacket every other year to field employees.

Safety Shoes

Employees with the majority of the workday spent in the field performing construction, maintenance, or operations functions including mechanical work, shop work, warehouse and other functions which are predominately outdoors are eligible for reimbursement not to exceed $150.00 per fiscal year as long as the safety boots meet the approved ANSI standards for the steel/composite toe protection. If an eligible employee needs another pair before the fiscal year ends, due to heavy wear and tear, with approval from the Human Resources Manager or designee, they can be reimbursed for another pair to ensure they are protected. Employees must submit a receipt of purchase and proof of ANSI compliance to be eligible for reimbursement.

Article 12 – Health, Welfare and Retirement Benefits

SECTION 1 MEDICAL, DENTAL AND VISION INSURANCE

The District shall pay for employees' individual and dependent group health and hospitalization, dental and vision insurance as follows:

Dental and Vision:

The District will cover 100 percent of the premium for employees and dependents.

Medical Health Care Insurance:

The District will cover 100 percent of the premium for employees.

The District will freeze its current contribution rates for dependent insurance as follows:

PPO one dependent	$660.23 monthly
PPO family	$841.98 monthly
HMO one dependent	$476.20 monthly
HMO family	$842.89 monthly

If an employee desires to participate in dependent insurance, they will be required to pay any increase in insurance premium rates for the duration of this agreement.

SECTION 2 RETIREMENT HEALTH CARE CONTRIBUTION

Upon retirement at age 50 or older and with a minimum of ten (10) years of continuous service with the District the District agrees to assist retired employees and their retired spouses with health and dental insurance plans. Effective August 15, 2014, the District's contribution for the basic plan or premium plan will be $363.00 per month for the retired employee and $726.00 per month for the retired employee and retired spouse until each reach their respective ages for full Medicare coverage. If the retired employee or retired spouse reaches the eligible age first, the premium for the retired employee or retired spouse will be $363.00 per month until reaching the eligible age. The assistance period for either will be for a maximum of ten (10) years

SECTION 3 LIFE AND DISABILITY

The District shall pay for employees' life, short and long term disability, unemployment, and workers compensation insurance.

SECTION 4 PUBLIC EMPLOYEES' RETIREMENT SYSTEM

The District participates in the California Public Retirement System (CalPERS). All employees hired at the District before January 1, 2013 are under the CalPERS miscellaneous formula of 2.5% @ 55 with the one (1) year final compensation period used to calculate retirements and the employees contribute the 8% of their annual salary.

A full time new employee hired on or after January 1, 2013 will be subject to the Public Employees Pension Reform Act (PEPRA)

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A new employee who is also a "New Member" to CalPERS will participate under the mandatory miscellaneous formula of 2% @ 62 with the three (3) year final compensation period used to calculate retirements and the employee contributes 50% of the normal cost established by CalPERS as outlined in the Public Employees' Pension Reform Act of 2013 (PEPRA).
Pursuant to the PEPRA, a "New Member" is defined as:

1. An individual who is hired on or after January 1, 2013 and has no prior membership in any California public retirement system
2. An individual who is rehired by a different CalPERS employer on or after January 1, 2013 after a break in service greater than six (6) months
3. An individual who is brought into CalPERS membership for the first time on or after January 1, 2013 and who is not eligible for reciprocity with another California public retirement system

If a former CalPERS eligible employee of the District has a break in service of more than six (6) months but returns to service with the same District, the former employee **will not** be considered a new member pursuant to PEPRA.

Article 13 – Tuition Reimbursement Program

The District will refund tuition fees and educational material costs incurred by regular employees for approved courses of study and completion with a "C" grade or higher. A "pass" will be accepted for classes where a pass/fail grading system is used. The amount of reimbursement will be as follows:

- During the employee's initial 1040 hours of employment they will only be eligible to receive tuition reimbursement for courses directly related to obtaining job-required water distribution, water treatment, or collection system maintenance certifications to a maximum of $400.

- For employees who have worked more than 1040 hours, but less than 6240 hours (three years) employees may be reimbursed up to $800 per year.

- For employees who have worked three years or more the District will reimburse employees up to $2,400 per year for attendance at an accredited college or institution, providing the employee is pursuing a course of study leading to attainment of a degree or accreditation, and providing the course of study is pertinent to the employee's employment with the District. The employee must submit the course syllabus to HR for approval prior to being eligible for reimbursement.

For the purpose of determining employee eligibility the end date of the class will determine as to how long the employee has been employed by RMWD.

Employees are required to submit applications to their immediate supervisor and get approval from the Department Head before starting courses for which educational assistance is requested.

If an employee leaves District employment before completion of the approved course, the District will not reimburse the employee for the course.

No assistance will be made until after the completion of the course and no assistance will be made if the employee utilizes other sources (i.e. GI Bill) to pay for the course or portions of the course.

Article 14 – Grievance Procedure

The Rainbow Employees Association and the District wish to work together to make every reasonable effort to resolve grievances, as defined in this grievance procedure, as near as possible to the point of origin.

A. Definitions

1. Grievance. A grievance is an alleged violation, misinterpretation or misapplication of a specific provision of the Memorandum of Understanding ("MOU"); the District's Administration Code, Title 4, Personnel Rules and Regulations; the District's Employee Handbook; or other written District policy, rule, or regulation, which affects the employee's wages, hours, or other terms and conditions of employment. A grievance does not include the release or termination of a probationary employee.

2. Grievant. A grievant is any employee of the bargaining unit who alleges he/she is personally adversely affected by an alleged violation, misinterpretation or misapplication of a specific provision of the MOU; the District's Administration Code, Title 4, Personnel Rules and Regulations, the District's Employee Handbook or other written District policy, rule, or regulation, which affects the employee's wages, hours, or other terms and conditions of employment. A grievant does not include a probationary employee who is released or terminated.

3. Business Day. A business day is any day on which the District is open for business.

4. Immediate Supervisor. The immediate supervisor is the lowest level administrator who has been designated to adjust grievances and who has immediate jurisdiction over the grievant. Any questions as to whom constitutes the grievant's immediate supervisor should be addressed to the District's Human Resources Department.

B. Steps of the Grievance Process

1. Informal Process. A grievant shall orally notify his/her immediate supervisor that he/she has a grievance and of the general nature of the grievance, within seven (7) business days of the event resulting in the grievance. Within seven (7) business days thereafter, the grievant shall meet with his/her immediate supervisor and orally discuss the grievance in detail. It is the intent of this Informal Resolution process that at least one personal conference where the grievance is orally discussed in detail be held between the grievant and his/her immediate supervisor. Failure to do so will render the grievance null and void and the grievant will not be entitled to proceed to the next level of the grievance procedure. If the grievance is resolved, the immediate supervisor shall prepare a memorandum documenting the resolution, and shall send that memorandum to the grievant and the District's Human Resources Department.

2. Formal Process. If the grievance is not settled to the grievant's satisfaction during the Informal Process and the grievant wishes to pursue the grievance, the grievant shall present his/her grievance in writing pursuant to the steps and timelines specified below. The grievance shall be typed or legibly hand-written and include the following information:

a. A statement of the specific provision of the applicable MOU; the District's Administration Code, Title 4, Personnel Rules and Regulations; the District's Employee Handbook or other written District policy, rule, or regulation that was allegedly violated, misinterpreted, or misapplied;

b. A full statement of the facts and events involved in the matter, including the date or dates on which the violation, misinterpretation or misapplication allegedly occurred;

c. The documents, witnesses, or other evidence that support the grievance;

d. An explanation of how the employee is/was adversely affected by a specific act or omission which gave rise to the alleged violation, misinterpretation, or misapplication;

e. A statement of the corrective action requested and the reason the corrective action is appropriate; and

f. The grievant's signature and the date the grievance was submitted.

g. The date the grievance was presented to and discussed with the grievant's immediate supervisor.

No grievance will be accepted for processing unless all of the information listed above is provided by the grievant.

Step 1- Department Head

The grievant must present the written grievance to the Department Head within seven (7) business days after the date the grievant is required to present his/her grievance to his/her immediate supervisor pursuant to the Informal Process. Within seven (7) business days after the grievant presents his/her written grievance, the Department Head may, in his/her discretion, schedule a meeting with the grievant for the parties to work at resolving the grievance. The Department Head will provide a written response to the grievant within seven (7) business days after receipt of the written grievance or within seven (7) business days after any scheduled meeting or meeting that is held, whichever occurs later.

Step 2 - Appeal to the General Manager

If the grievance is not settled to the grievant's satisfaction at Step 1 and the grievant wishes to pursue the grievance, the grievant must present the written grievance to the General Manager within seven (7) business days after the date of the written response of the Department Head at Step 1. Within seven (7) business days after the grievant presents his/her written grievance, the General Manager may, at his/her discretion, schedule a meeting with the grievant to discuss the matter. After consideration of the facts and an investigation, if the General Manager deems one necessary, he/she will provide a written decision to the grievant.

In the event the subject of the grievance is challenging a final notice of any of the following disciplinary actions (1) suspension without pay; (2) salary step reduction; (3) demotion; or (4) termination of a non-probationary employee ("disciplinary actions") , the grievant will bypass the Informal Process and Step One of the formal process and commence with Step two of the formal process, by appealing directly to the General Manager. The grievant must submit any grievance appeal challenging these specified disciplinary actions within seven (7) business days of receipt of the final notice of the disciplinary action. Upon receipt of a timely appeal of the specified disciplinary actions, the General Manager will schedule and hold an evidentiary hearing in accordance with due process and other applicable legal requirements. The General Manager may provide the parties the opportunity to submit written briefs after conclusion of the hearing, and within a timeline specified by the General Manager. After consideration of the evidence presented at the hearing, the General Manager shall issue his/her findings and decision to the grievant.

The General Manager's decision will be limited as follows:

1. The decision shall neither add to, detract from, nor modify the language of the applicable MOU.

2. The decision shall be confined to the precise issue(s) the grievance has raised and that the grievant has submitted.

3. Any monetary award in favor of the grievant may not exceed wages or benefits that the grievant has actually lost as a result of the matters alleged in the grievance. In no event shall any grievance award include any other types of damages or attorneys' fees.

The General Manager may delegate non-involved Department Heads, other management-level employees, or non-District employees to act on his/her behalf at any level of the grievance process. The findings and recommendations any such individual renders shall be advisory to the General Manager, who may accept, reject, or modify that individual's recommendation, and who shall issue a determination within seven (7) business days.

Step 3: Appeal to Board of Directors

If the grievance is not settled in Step 2 and the employee desires to appeal, it shall be referred by the employee in writing to the Board of Directors within seven (7) business days after the General Manager has given his/her decision. A hearing with the Board of Directors and the employee with his/her Association representative shall be held at the next regular Board meeting.

The Board of Directors shall give their answer in writing to the employee within seven (7) business days following the meeting. The Board of Directors decision shall be final and binding.

C. Additional Rules Applicable To The Grievance Procedure

1. Representation. Either the District or the grievant may be represented at any step of the grievance procedure by an individual of the party's choice.
2. Withdrawal. A grievant may withdraw any grievance at any time, by giving written notice to the District representative who last took action on the grievance, and by providing a copy of the notice to the District's Human Resources Department.
3. Resolution. If the grievant does not present the grievance to the next level within the time limits for each step, the grievance shall be considered resolved on the basis of the response at the last level.
4. Waiver. The grievance is deemed waived by grievant for all purposes if grievant does not process the grievance within the time frames set forth in this grievance procedure.
5. Deemed Denied. If the District does not respond to a grievance within the time frames set forth for each step, the grievant may elect to treat the grievance as denied at that step and immediately appeal the grievance to the next step.

6. Written Agreement To Extend Time. In the event of extenuating circumstances, the parties may mutually agree in writing to extend time at each step. The time extension will only be effective for the amount of the time extension agreed to in writing and for the step that it applies to as agreed in writing.
7. Grievance Meetings. Grievance meetings will be held during regularly scheduled work hours of the grievant and the individual to whom the grievance is presented, unless otherwise mutually agreed.

D. Retaliation

No party to a grievance shall be subject to retaliation for utilizing the provisions of this grievance procedure.

Article 15 – Modifications, Waiver

No agreement, alteration, understanding, variation, waiver or modification of any of the terms or provisions contained herein shall in any manner be binding upon the parties hereto unless made and executed in writing by all parties hereto and, if required, approved and implemented by the District's Board of Directors. The waiver of any breach, term or condition of the Memorandum of Understanding by either part shall not constitute a precedent in the future enforcement of all its terms and provisions.

Article 16 – Provisions of Law

This Memorandum of Understanding is subject to all current and future applicable federal, state and local laws. If any part or provision of the Memorandum of Understanding is in conflict or inconsistent with such applicable provisions of federal, state or local laws or regulations, or is otherwise held to be invalid or unenforceable by a tribunal of competent jurisdiction, such applicable law or regulations, and the remainder of the Memorandum of Understanding shall not be affected thereby.

Article 17 – District Rights

It is understood and agreed that the District possesses the sole right and authority to operate and direct the employees of the District and its various departments in all aspects, including, but not limited to, all rights and authority exercised by the District prior to the execution of this Agreement. These rights include, but are not limited to:

1. The right to determine its mission, policies, and to set forth all standards of service offered to the public;

2. To plan, direct, control and determine the operations or services to be conducted by employees of the District;

3. To determine the methods, means, number of personnel needed to carry out the District's mission;

4. To direct the working forces;

5. To hire and assign or to transfer employees within the departments;

6. To promote, suspend, discipline or discharge;

7. To lay off or to relieve employees due to lack of work or funds or for other legitimate reasons;

8. To make, publish and enforce rules and regulations;

9. To introduce new or improved methods, equipment or facilities;

10. To take any and all actions as may be necessary to carry out the mission of the District in situations of civil emergency as may be declared by the President of the Board of Directors or the General Manager; provided that no right enumerated herein shall be exercised or enforced in a manner contrary to or inconsistent with the provisions of this Agreement.

The Board of Directors has the sole authority to determine the purpose and mission of the District and the amount of budget to be adopted thereto.

Article 18 – Entire Agreement

The parties acknowledge that during the negotiations which resulted in this Agreement, each had the unlimited right and opportunity to make demands and proposals with respect to any subject or matter not removed by law from the area of collective bargaining, and that the understanding and agreements arrived at by the parties after the exercise of that right and opportunity are set forth in this Agreement.

Therefore, the District and the Association, for the duration of this Agreement, each voluntarily and unqualifiedly waives the right, and each agrees that the other shall not be obligated to bargain collectively with respect to any subject or matter referred to, or covered in this Agreement, or with respect to any subject or matter not specifically referred to, or covered in this Agreement, even though such subjects or matters may not have been within the knowledge or contemplation of either or both of the parties at the time they negotiated or signed this Agreement. This Agreement may only be amended during its term by the parties' mutual agreement in writing.

Approved by the Board of Directors of the Rainbow Municipal Water District on August 26, 2014.

RAINBOW MUNICIPAL WATER DISTRICT

George McManigle, Board President

8/26/14
Date

RAINBOW EMPLOYEES ASSOCIATION

Thomas Sjuneson, President

8-26-14
Date

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD ACTION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

Discussion and Possible Action to Adopt Ordinance No. 16-12, Updating and Amending Administrative Code Section 8.04.030 Application for a Remote Meter

DESCRIPTION

This Board Action is to clean up formatting in the Administrative Code in order to provide more clarity to the content. There is no actual change in the language – just the manner in which the language is presented in the Administrative Code. Details are shown on the redline document attached.

POLICY

Title 8 of the Administrative Code Sections 8.04.030

BOARD OPTIONS/FISCAL IMPACTS

The Board has several options related to this Ordinance:

- Reject the changes to the Administrative Code outright
- Direct staff to make changes to the proposed Administrative Code and bring back at a different Board Meeting
- Make specific changes to the attached Administrative Code document and approve as amended
- Approve the attached Administrative Code Changes as presented

STAFF RECOMMENDATION

Staff recommends approval of Ordinance No. 16-12 with or without amendments.

Tom Kennedy 8/23/2106
General Manager

Ordinance No. 16-12

Ordinance of the Board of Directors of the Rainbow Municipal Water District Amending the Administrative Code Section 8.04.030 – Application for a Remote Meter

WHEREAS, the Rainbow Municipal Water District has, from time to time, adopted various rules and regulations for the operation of the District; and

WHEREAS, certain of those rules and regulations require updating to reflect best practices, as well as changes in applicable laws; and

WHEREAS, the Board of Directors has determined that changes in the rules or regulations of the District shall occur solely by amendment to the Administrative Code;

NOW, THEREFORE,

BE IT ORDAINED by the Board of Directors of Rainbow Municipal Water District as follows:

1. The following rules and regulations of the District, collected and attached are hereby adopted and shall be incorporated into the Administrative Code, consisting of:

8.04.030 Application for a Remote Meter

2. The General Manager is hereby directed to update the Administrative Code to reflect the approval of these rules and regulations, and to assign or reassign the numbering of the Administrative Code as necessary to codify these rules and regulations as amended.

3. This ordinance shall take effect immediately upon its adoption on this 23rd day of August, 2016.

AYES:
NOES:
ABSTAIN:
ABSENT:

_____
Dennis Sanford, Board President

ATTEST:

_____
Dawn Washburn, Board Secretary

Section 8.04.010
Board of Director's Approval

Any Request for installation or acceptance of water facilities to serve four (4) or more parcels shall be subject to Board approval.

Section 8.04.020
Application for Regular Water Service

Effective November 1, 2014, all new water service accounts shall be established and held in the legal (record) Owner's name as shown on the San Diego County Assessor's Tax Roll.

Each Applicant for water service must sign and file in the District's Office, on a form provided by the District, an application for New Water Service Request (NWSR) which will set forth:

8.04.020.1 Proof of Ownership of the parcel to be served

8.04.020.2 The name, address and telephone number of the Applicant.

8.04.020.3 A description of the parcel to be served by said application (the description of which shall be satisfactory to the District's General Manager.)

8.04.020.4 An Agreement on the part of the Applicant to abide by the Rules and Regulations of the District, as amended from time to time, signed by the property Owner

8.04.020.5 An agreement on the part of the Applicant that water delivered through the connection will be used only on the property described in the application.

8.04.020.6 The date on which Applicant desires service.

8.04.020.7 If the Applicant's property does not adjoin the District right-of-way, the Applicant must provide proof of an easement that may be utilized by the Applicant to bring his/her water line to the District's right of way.

8.04.020.8 If a meter is being purchased on behalf of the legal Owner by another individual, written authorization to do so shall be provided.

8.04.021

Notwithstanding the forgoing, at the District's discretion, a tenant or lessee of property may request water service for a property, provided a completed and signed application for water service is submitted to the District by the Owner of the identified property in accordance with Section 8.04.020. The application shall also include: (i) a statement by the Owner that he or she authorizes water service for the identified property; (ii) the signature of the tenant or lessee stating that he or she will be the party responsible for making monthly payments to the District for water services delivered to the identified property; and (iii) an acknowledgement by the

Owner that he or she accepts liability for any delinquent or unpaid water charges associated with the identified property, including any penalties and interest related thereto. Such acknowledgment shall be renewed in writing by the Owner or Customer at any change in tenancy at the subject property; however, a failure by the Owner or Customer to renew this acknowledgment in writing shall not excuse the Owner or Customer from any liability associated with delinquent or unpaid water charges, including any penalties or interest related thereto, associated with the District's water service to the property.

8.04.022

If account holder is the legal (record) Owner of service property as shown on the San Diego County Assessor's Tax Roll, and has become delinquent on account where service is scheduled to be terminated the non-owner residential occupant(s) may establish water service directly. The non-owner residential occupant(s) will not be required to pay the delinquent bill maintained under the legal Owner. In order to establish service in the non-owner residential occupant(s) name, security deposit equal to twice the estimated average periodic bill will be required. The security deposit will be returned to the depositor two (2) years after the last lock-off for non-payment, if the depositor has maintained a timely paid, delinquent free account record during the two-year period, or when the account is paid in full on termination of service, whichever occurs first. Acceptable methods of the security deposit are cash, check, money order, cashier's check, and District accepted payment cards only. No interest shall be paid on any deposit.

8.04.023

During the transfer of residential property ownership from one owner to another, the current owner of a property may request that the District discontinue service and transfer the service to the proposed subsequent owner in a limited term temporary service agreement. In order to establish residential service in the proposed owner's name, the account for the current owner must be current. In addition, the proposed owner must provide a security deposit equal to twice the estimated average periodic bill.

The proposed owner will enter into a written agreement with the District related to the temporary service of water and the term of this temporary service will be 45 days. The proposed owner shall submit information to the District at the close of escrow that conforms to the requirements of Section 8.04.020 of this Administrative Code. Failure to provide this information within the given time limit will result in the termination of water service to the property. Applicants may request one additional extension to this agreement in extraordinary circumstances, but the approval of any extension will be at the sole discretion of the General Manager.

The security deposit will be returned to the depositor, or credited to their account after proof of ownership is provided to the District as long as the depositor has maintained a timely paid, delinquent free account record during the temporary service period. The security deposit can be cash or cashier's check. No interest shall be paid on any deposit.

Section 8.04.030
Application for a Remote Meter

The District may approve applications for water service to parcels which do not abut a District water main. As a condition of service, if the parcel abuts a future line extension as identified in the District's Master Plan, the remote meter Applicant may be required to contribute an estimated prorated cost for a future line extension or meet other terms and conditions established by the Board.

8.04.030.1 Remote meters shall be granted only when the district determines that:

~~**8.04.030.2**~~ A line extension for fire flow or looping is not required, and

~~**8.04.030.3**~~ All parcels are subdivided to their smallest size as determined by the District Engineer, and

~~**8.04.030.4**~~ Under no circumstances shall more than three (3) parcels receive remote service within an area requiring a future line extension.

8.04.030.2~~5~~ At the time of application Applicant shall execute a Remote Water Service Agreement and shall furnish a copy of all recorded easements granting the right to the property Owner of the parcel to be served to install and maintain a private water line from the District main to the Applicant's parcel.

Section 8.04.040
Application for Construction Water Service

8.04.040.1 Each Applicant for temporary water service (construction meter) shall sign and file in the District's Office an application setting forth information which the District may reasonably require and pay the following:

- The application shall be accompanied by an established refundable deposit against unpaid water use.
- A monthly service charge will be applied for the period of time the meter is available for Applicant's use.
- Once all fees and deposits have been provided the District will install a construction meter at a location of the District's choosing.

8.04.040.2 The Applicant may request relocation of a construction meter to another location for an established charge.

8.04.040.3 Billing will be monthly and include an operation and maintenance fixed fee, plus the charge for the water used during the billing period.

8.04.040.4 Installation or Relocation of a Construction Meter shall be done by District employees only. There is a fee and at least a 24-hr. notice to request this service.

8.04.040.5 Applicant shall not use water service in a manner which causes sudden pressure surges that may cause damage to the District's water system.

8.04.040.6 Construction meters are available for a maximum period of 6 months. Extensions may be granted for additional six month periods at the discretion of the District Engineer.

8.04.040.7 Applicants shall comply with all rules and regulations of the District. Applicants agree to pay for any damage or loss of District facilities resulting from such use.

Section 8.04.050
Changes in Premises Served

Customers making any material change in the size, character of service or extent of their water systems or their operations, shall immediately give the District written notice of the extent and nature of such change.

Section 8.04.060
Easements

Applicants shall grant the District an easement which will allow to the District to install, maintain, operate, repair, enlarge and remove any service connection or facilities of the District if the service connections are not located upon an existing District easement or within the public right of way.

Section 8.04.010
Board of Director's Approval

Any Request for installation or acceptance of water facilities to serve four (4) or more parcels shall be subject to Board approval.

Section 8.04.020
Application for Regular Water Service

Effective November 1, 2014, all new water service accounts shall be established and held in the legal (record) Owner's name as shown on the San Diego County Assessor's Tax Roll.

Each Applicant for water service must sign and file in the District's Office, on a form provided by the District, an application for New Water Service Request (NWSR) which will set forth:

8.04.020.1 Proof of Ownership of the parcel to be served

8.04.020.2 The name, address and telephone number of the Applicant.

8.04.020.3 A description of the parcel to be served by said application (the description of which shall be satisfactory to the District's General Manager.)

8.04.020.4 An Agreement on the part of the Applicant to abide by the Rules and Regulations of the District, as amended from time to time, signed by the property Owner

8.04.020.5 An agreement on the part of the Applicant that water delivered through the connection will be used only on the property described in the application.

8.04.020.6 The date on which Applicant desires service.

8.04.020.7 If the Applicant's property does not adjoin the District right-of-way, the Applicant must provide proof of an easement that may be utilized by the Applicant to bring his/her water line to the District's right of way.

8.04.020.8 If a meter is being purchased on behalf of the legal Owner by another individual, written authorization to do so shall be provided.

8.04.021

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RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD ACTION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

DISCUSSION AND POSSIBLE ACTION REGARDING THE APPOINTMENT; EMPLOYMENT; EVALUATION OF PERFORMANCE: ***GENERAL MANAGER***

DESCRIPTION

The Board may take action regarding the appointment, employment, performance or compensation of the General Manager.

POLICY

BOARD OPTIONS/FISCAL IMPACTS

STAFF RECOMMENDATION

Tom Kennedy
General Manager

August 23, 2016

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD INFORMATION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

REVIEW RESPONSES TO REQUEST FOR PROPOSALS FOR GENERAL COUNSEL SERVICES

BACKGROUND

Under the Water Code Section 71340, Municipal Water Districts must appoint an attorney to serve the District. Currently, the District's General Counsel services are provided by Procopio, Corey, Hargreaves, and Savitch (Procopio). Procopio has been serving in this position since 2007 when Greg Moser moved from his previous firm, Foley and Lardner, to Procopio. There is no clear contractual arrangement with Procopio in either the District's or Procopio's records.

Earlier this year, the Board directed staff to conduct a review of various contracts related to Water Code Section 71340. One outcome of this review was that the General Counsel services was an area where the Board desired to receive proposals for service and establish a proper contractual relationship. Staff was directed to release a Request for Proposal to qualified legal firms in order to solicit firms that may be interested in serving the District.

In early July 2016 Requests for Proposals were solicited to nine firms. All interested parties were to have their proposals to RMWD no later than Friday, August 5, 2016 at 4:00 p.m. The District received four proposals as well as one response stating their firm declined to submit a proposal due to a potential conflict of interest.

Proposals were received from:

Procopio
Rutan and Tucker
Nossaman
McDougal Love Eckis Boehmer & Foley

The four proposals have been reviewed individually with each of the Board Members starting on August 8, 2016 as time permitted.

DESCRIPTION

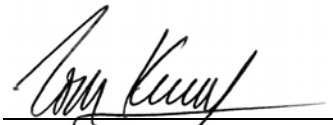
This agenda item is designed to provide for an opportunity for the Board to review and discuss the proposals in greater detail and to determine the appropriate course of action going forward. This is not an action item to approve a contract with any firm, but the place and time to discuss the proposals that have been received.

Once a firm is selected, the staff recommendation is that an Ad-Hoc committee consisting of two Board members and the General Manager be convened to work through commercial negotiations and develop a contract for services. This contract would be brought to a future Board meeting for consideration.

The Board has several options:

1. Invite all firms to a future Board meeting for interviews before making a selection.
2. Invite a subset of firms to a future Board meeting for interviews before making a selection.
3. Select one of the four firms today and form an Ad-Hoc committee to work with the General Manager to conduct commercial negotiations and develop a contract for later approval by the full Board.
4. Reject all proposals and direct staff to restart the process.
5. Any other course of action desired by the Board.

Since the selection of General Counsel is delegated to the Board entirely by the Water Code, staff does not have a specific recommendation and awaits Board direction on this matter.



Tom Kennedy August 23, 2016
General Manager

MEETINGS/SEMINARS/CONFERENCES/WORKSHOPS

VARIABLE					
DATE	**2016**	**MEETING**	**LOCATION**	**ATTENDEES**	**POST**
September	8	SDCWA Special Board Meeting	SDCWA	GM	N/A
September	*	CSDA – San Diego Chapter	(Location to be Announced) 6:00 p.m.	GM	N/A
September	*	LAFCO Special Meeting	County Admin Center, Room 358 – 9:30am	Sanford (As Advised by GM)	N/A
September	*	Santa Margarita Watershed Council	Rancho California Water District	Sanford	N/A

* To Be Announced

MEETINGS/SEMINARS/CONFERENCES/WORKSHOPS

RECURRING					
DATE	**2016**	**MEETING**	**LOCATION**	**ATTENDEES**	**POST**
September	7	Engineering Committee Meeting	RMWD Board Room 3:00 p.m.	Appointed Director, General Manager	9/1
September	12	LAFCO	County Admin. Center Room 358 9:00 am	Sanford (As Advised by GM)	N/A
September	12	Communications Committee Mtg.	RMWD Board Room 3:30 p.m.	Appointed Director, General Manager	9/1
September	13	Budget & Finance Committee Mtg.	RMWD Board Room 1:00 p.m.	Appointed Director, General Manager	9/1
September	13	SDCWA GM's Meeting	SDCWA, San Diego 9:30 a.m.	General Manager	N/A
September	16	NC Managers	Golden Egg 7:45 a.m.	General Manager	N/A
September	16	LAFCO Advisory Committee	LAFCO, 9335 Harzard Way, 9:30 a.m.	General Manager	N/A
September	20	Council of Water Utilities	Stoneridge Country Club 7:15 a.m. Poway	All Directors, General Manager	9/15
September	21	North County Water Group	Rincon Del Diablo, Escondido 7:30 a.m.	All Directors on a Rotating Schedule, General Manager	N/A
September	22	SDCWA Full Board Meeting	SDCWA Board Room, 3-5 p.m.	General Manager	N/A
September	26	San Luis Rey Watershed Council	Fallbrook Public Utility District 1:00 p.m.	Walker	N/A
September	27	RMWD General Board	RMWD Board Room (Start Time to Be Determined)	All Directors	9/20

RAINBOW MUNICIPAL WATER DISTRICT
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STAFF TRAINING REPORT

ATTENDEES NAME(S):	Karleen Harp, Darren Milner, Jeff Stacy, John Maccarrone, Ramon Zuniga, Marc Walker
TITLE OF TRAINING/CONFERENCE/WORKSHOP/CLASS:	ACWA JPIA Annual Training Day
DATE(S) ATTENDED:	July 20 - July 21, 2016
AGENCY HOSTING TRAINING/CONFERENCE/WORKSHOP/CLASS:	ACWA JPIA
LOCATION:	Rancho Bernardo

BRIEF DESCRIPTION:

This 2-day conference offered valuable classes that went towards the Professional Development Program (PDP) in which we are all enrolled. There were several courses offered, and each participant attended the most relevant classes for their position. Covered topics included:

1) Accident Investigation: focused on the ultimate goal of the accident investigation.

2) Documenting Performance: emphasized the importance of documentation for all personnel-related situations.

3) Emergency Response Planning: learned process of developing emergency/disaster response plans.

4) Hiring Practices: This seminar covered the basics of the recruitment and selection process, including legal interviewing practices.

4) Injury & Illness Prevention Program: provided a better understanding of the essential elements of an IIPP.

5) Performance Management: focused on eliminating the “Performance Appraisal Blues" of managers by identifying tools and applications to make the process a positive, motivational, and productive event.

6) Risk Transfer: covered an in-depth review of loss exposure analysis, model contract language, insurance requirements, samples of insurance documents such as additional insured endorsements and certificates of insurance, and case studies.

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD INFORMATION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

Operations Report for July 2016

DESCRIPTION

Activities for Operations & Maintenance Division

CONSTRUCTION & MAINTENANCE:

The Valve Maintenance crew exercised a total of 195 valves this month, just below their average goal of 303 per month. The crew assisted with emergency or planned shutdowns for the Construction crews. They checked the PRV stations in the zones while performing valve maintenance.

The Construction crews repaired fifteen (15) leaks and performed two (2) planned shutdowns. They repaired three (3) plug valves and installed a 12" plug valve. The crew also installed and repaired two (2) appurtenances. The Construction & Maintenance crews maintained District easements as well as completed the work at the District Yard.

The District's mechanic completed a total of 20 District vehicles with regular *scheduled* preventative maintenance and/or repairs. He also completed the required BIT inspections for the fleet. The following maintenance and/or repairs were considered *unscheduled*:

- Vehicles with Emergency Repairs (9)
- Small Equipment (3)
- Off-Road Equipment /Trailers Repairs & Maintenance (2)
- Off-Road Equipment/Trailer Emergency Repairs (0)
- Large Vehicles Maintenance/Repairs (1)
- Large Equipment Emergency Repairs (2)
- Safety Recalls (4)

WATER OPERATIONS:

New radios at the Cement Tank and Beck Reservoir are ready to be programmed. The software was delayed so this has been pushed back until August. This is to replace the degrading phone line at the tank and will give us more reliable communications.

SCADA Projects: Huntley Pump station upgrade still in progress, 90% completed. Connection 9 radio upgrade was completed.

Work at Morro CL2 Station to add two additional injection pumps as backups. Plumbing and connections are complete; waiting on final programming of SCADA panel.

Proposals for Backflow Testing Services were reviewed. Contract details are being worked on.

Monthly tank and reservoir cover inspections completed.

July 2016 Water Quality Monthly Report:

- 22 routine coliform samples
- 20 nitrification samples
- 9 TDS/Chloride test in south zones
- 1 water quality complaint (smelly water, dead-end line flushed)

WASTEWATER:

Monthly, Semi Annual and Annual Reports:

California Integrated Water Quality System (CIWQS): Reported "No Spill Report" for Month of July 2016

Oakcrest Estates Semi Annual Treatment Plant Report: Requirement under California Regional Water Board Order #93-69

Sanitary Sewer Overflows (SSO):

None reported for the month of July

Lift Stations:

July 01, 2016 – July 31, 2016:

Location: Lift Station #2: Replaced pressure switches for low psi accuracy to keep lift station operational.

Sewer Line Cleaning:

July 01, 2016 – July 31, 2016:

Total: 11,554'

Locations: Highway 76 Pala Indian Reservation, Los Sicomoros, Casa Blanca, Laketree

Water Loss: 5,984 gallons used

High Frequency Cleaning:

1,410' Sewage Siphon Lines (8" & 10")

Water Loss: 748 gallons used

Location: Laketree: 901' (10")

Water Loss: 748 gallons used

Manhole Inspections:

July 01, 2016 – July 31, 2016:

Total: 37

Locations: Pala Mesa, Brook Hills, Camino Del Cielo

CCTV:

None reported for the month of July 2016

Smart/Cover Alarm Units:

July 01, 2016 – July 31, 2016:

Locations: Oak Cliff Drive and Horse Ranch Creek
2 high sewer flow alarms response: cleaned and adjusted units

SAFETY:

Safety Training

- Asbestos Containing (AC) Pipe Annual Refresher – 22 employees
- Safety Committee Meeting - July 19, 2016

Tailgate Safety Meetings

- Back Safety
- PPE Equipment Check

Target Safety Online Training

- Advanced Construction Safety (Mod 3)
- Advanced Construction Safety (Mod 4)
- Customer service
- Workplace Diversity

Ramon Zuniga 8/23/16
Acting Operations Manager

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD INFORMATION

BOARD OF DIRECTORS

August 23, 2016

SUBJECT

Engineering Report for July 2016

DESCRIPTION

CAPITAL PROJECTS:

Gird to Monserate Hill (201045): Final design plans were submitted.

Horse Creek Lift Station (200555): Developer is working on obtaining the permit from Army Corps of Engineers.

Highway 76 East Segment (201260): Contractor raising manhole lids to finish grade. Installing two 2-inch meters at Calle De Vuelta.

Lift Station 1 (201040): Staff is working on location regarding the site for the lift station before the siphon. 60% design submittal comments are being incorporated into the upcoming 90% submittal.

Water and Wastewater Asset Cost and Capacity Fee Study (201663): Staff reviewing the Water and Wastewater Appraisal Report.

Water Reclamation Plant (WRP) & Recycled Water Distribution System (RWDS) (201672): Water Reclamation Plant PDR to be reviewed by the Board.

Wastewater Outfall Replacement (201266): Project on hold until further evaluation from the Master Plan and the WRP study.

OTHER PROJECTS:

Moosa Creek Mitigation Bank (201459): Staff working with Consultant on easements.

San Luis Rey Ground Water Sources (201446): Report finalized and being reviewed by staff and consultant.

DEVELOPER PROJECTS:

Golf Green Estates (90100): (near Lift Station 1): 94 SFR planned across from Bonsall Elementary School. Contractor installed 1300' of 8" waterline. Proposed test and shutdown will consist of 300' of 8" of waterline on Old River Road scheduled on August 20, 2016.

Helling Hill Run (00000): 5 Lot Subdivision with 260 foot waterline extension. Plans approved.

Horse Ranch Creek Ridge (D.R. Horton - formally Campus Park, Passerelle) (90096): 850 WMs / 850 EDUs – Off of Highway 76 and Horse Ranch Creek Road. Plan check for units 1-4, wastewater, and water complete. Caltrans approved construction of forcemain and waterline in Highway 76. Project is under review with the Army Corps of Engineers and Pala Indians.

Malabar Ranch (90061): 31 WMs / 29 EDUs – There are 17 out of 31 homes built. Contractor shall complete waterline relocation and punch list items.

Nessy Burger (00000): Nessy Burger's is proposing to install a permanent building. Plan check one completed.

Olive Hill Estates (90066): 37 WMs / 59.2 EDUs – Contractor working on punchlist items.

Pala Mesa Highlands (90056): 124 Lots on Old Highway 395. Plan check three completed.

OTHER:

ITEMS	NO#	ITEMS	NO#
Water Availability Letters	0	Water Meters Purchased	1
Sewer Availability Letters	0	Sewer EDUs Purchased	1.2
Water Commitment Letters	0	Developer Shutdowns	0
Sewer Commitment Letters	0	Jobs Closed:	0

Michael Powers 8/23/16
Associate Engineer

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

BOARD INFORMATION

BOARD OF DIRECTORS

Augudt 11, 2016

SUBJECT

Customer Service & Meter Services

DESCRIPTION

METER SERVICES:

Meter Services completed 729 service orders. Here is a summary of the most pertinent service orders shown by category.

SERVICE ORDERS	COMPLETED
Check Reads	256
Transfers	83
Locked	23
Unlocked	15
Pressure Calls	35
Meter Leaks	54
Drought	1

CUSTOMER SERVICE:

Utility billing is preparing for a new software program. In July the new software and the old were run in parallel. We resolved some of the Data conflicts that were found. In preparation through the District Monlthy Newsletter we started to notify customers, their bills will start looking different. The live date will most likely be in Mid- November.

8/11/16
Vanessa Martinez 8/11/16
Finance Manager

8/11/16
Kenny Diaz 8/11/16
Meter Services Crew Leader

General Ledger

Interim Financials

User: vmartinez
Printed: 8/11/2016 - 8:20 AM
Period: 1 to 12, 2016

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
Fund 01	WATER FUND							
Dept 01-00								
R10	WATER REVENUE							
01-00-41110	Water Sales-Domestic	13,525,669.00	5,180,443	5,180,443	8,345,226	-	8,345,226	62
01-00-41115	Water Sales-Domestic-Unbilled	0.00	115,913	115,913	(115,913)	-	(115,913)	-
01-00-41120	Water Sales-Ag-Dom Non Cert	0.00	1,899,202	1,899,202	(1,899,202)	-	(1,899,202)	-
01-00-41125	Water Sales-Ad Noncert Unbilld	0.00	(85,401)	(85,401)	85,401	-	85,401	-
01-00-41160	Water Sales-Ag. Non Discount	0.00	3,408,268	3,408,268	(3,408,268)	-	(3,408,268)	-
01-00-41165	Water Sales-Ag.Nondis Unbilled	0.00	210,660	210,660	(210,660)	-	(210,660)	-
01-00-41170	Water Sales-Construction	0.00	154,532	154,532	(154,532)	-	(154,532)	-
01-00-41175	Water Sales-Construction-Unbil	0.00	(2,390)	(2,390)	2,390	-	2,390	-
01-00-41180	Water Sales Sawr Full Agric	0.00	3,939,420	3,939,420	(3,939,420)	-	(3,939,420)	-
01-00-41185	Water Sales-Sawr Ag Unbilled	0.00	45,777	45,777	(45,777)	-	(45,777)	-
01-00-41190	Water Sales-Sawr Ag/Dom	10,598,686.00	5,878,262	5,878,262	4,720,425	-	4,720,425	45
01-00-41195	Water Sales Sawr Ag/D Unbilled	0.00	82,792	82,792	(82,792)	-	(82,792)	-
01-00-42120	Monthly O & M Charges	5,283,629.27	4,953,472	4,953,472	330,157	-	330,157	6
01-00-42121	Infrastructure Access Charge	4,508,350.58	4,868,139	4,868,139	(359,788)	-	(359,788)	-
01-00-42130	Readiness-To-Serve Rev Id#1	486,481.00	293,645	293,645	192,836	-	192,836	40
01-00-42140	Pumping Charges	426,052.34	408,740	408,740	17,312	-	17,312	4
01-00-43101	Operating Inc Turn On/Off Fees	2,500.00	7,750	7,750	(5,250)	-	(5,250)	-
01-00-43104	Operating Inc. R.P. Charges	218,976.00	228,062	228,062	(9,086)	-	(9,086)	-
01-00-43106	Operating Inc Water Letter Fee	500.00	1,550	1,550	(1,050)	-	(1,050)	-
01-00-43109	Operating Inc Inspections	30,000.00	38,250	38,250	(8,250)	-	(8,250)	-
01-00-43110	Operating Inc Plans And Specs	3,000.00	650	650	2,350	-	2,350	78
01-00-43111	Operating Inc Install Fees,Hyd	2,400.00	4,085	4,085	(1,685)	-	(1,685)	-
01-00-43114	Operating Inc-Miscellaneous	48,600.00	9,321	9,321	39,279	-	39,279	81
01-00-43116	New Meter Sales/Install Parts	8,500.00	20,265	20,265	(11,765)	-	(11,765)	-
01-00-43117	Notice Delivery Revenue	0.00	38,648	38,648	(38,648)	-	(38,648)	-
	R10 Sub Totals:	35,143,344.19	31,700,054	31,700,054	3,443,290	-	3,443,290	10
R40	INTEREST EXPENSE							
01-00-49301	Property Tax Rev. - Ad Valorem	316,383.00	345,090	345,090	(28,707)	-	(28,707)	-
	R40 Sub Totals:	316,383.00	345,090	345,090	(28,707)	-	(28,707)	-
R50	INTEREST INCOME							

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01-00-49201	Interest Revenues-Water Fund	4,342.28	-	-	4,342	-	4,342	100
	R50 Sub Totals:	4,342.28	-	-	4,342	-	4,342	100
R70	OTHER REVENUE							
01-00-49102	Non Oper Inc-Nsf Check Fees	0.00	1,680	1,680	(1,680)	-	(1,680)	-
01-00-49109	Non Oper Inc-Miscellaneous	60,360.00	19,276	19,276	41,084	-	41,084	68
	R70 Sub Totals:	60,360.00	20,956	20,956	39,404	-	39,404	65
R80	CURRENT YEAR NET REV/EXP							
01-00-39200	Current Year Net Rev/Exp	0.00	-	-	-	-	-	-
	R80 Sub Totals:	0.00	-	-	-	-	-	-
	Revenue Sub Totals:	35,524,429.47	32,066,101	32,066,101	3,458,329	-	3,458,329	10
E01	Cost of Water Sold							
01-00-50001	Water Purchases	17,962,086.93	18,946,596	18,946,596	(984,509)	-	(984,509)	-
01-00-50002	Ag Credit-Iawp	0.00	-	-	-	-	-	-
01-00-50003	Water In Storage	0.00	(59,388)	(59,388)	59,388	-	59,388	-
01-00-50005	Ready To Serve Charge	527,580.00	527,584	527,584	(4)	-	(4)	-
01-00-50006	Infrastructure Access Charge	435,546.00	435,546	435,546	-	-	-	-
01-00-50008	Ag Credit-Sawr	-1,605,654.82	(1,513,883)	(1,513,883)	(91,772)	-	(91,772)	-
01-00-50009	Seasonal Storage Credit	0.00	-	-	-	-	-	-
01-00-50010	Customer Service Charge	1,204,945.50	1,204,947	1,204,947	(2)	-	(2)	-
01-00-50011	Capacity Reservation Charge	622,440.00	622,443	622,443	(3)	-	(3)	-
01-00-50012	Emergency Storage Charge	2,148,367.50	1,778,480	1,778,480	369,888	-	369,888	17
01-00-50013	Supply Reliability Charge	0.00	369,888	369,888	(369,888)	-	(369,888)	-
01-00-52176	Overhead Transfer To Gen Fund	0.00	1,106,938	1,106,938	(1,106,938)	-	(1,106,938)	-
	E01 Sub Totals:	21,295,311.11	23,419,150	23,419,150	(2,123,839)	-	(2,123,839)	-
E05	PAYROLL & EMPLOYEE EXPENSES							
01-00-56501	Employer'S Share Fica Ssi	0.00	7,141	7,141	(7,141)	-	(7,141)	-
01-00-56502	Employer'S Share Fica Medicare	0.00	-	-	-	-	-	-
01-00-56503	Medical Ins Acwa Health Ben	0.00	639,609	639,609	(639,609)	-	(639,609)	-
01-00-56504	Dental Insurance	0.00	65,379	65,379	(65,379)	-	(65,379)	-
01-00-56505	Vision Ins Acwa Serv Corp	0.00	8,538	8,538	(8,538)	-	(8,538)	-
01-00-56506	Life, S/T, L/T Disability Ins	0.00	43,757	43,757	(43,757)	-	(43,757)	-
01-00-56515	Worker'S Compensation Ins	0.00	120,101	120,101	(120,101)	-	(120,101)	-
01-00-56516	State Unemployment Ins, E.T.T.	0.00	677	677	(677)	-	(677)	-
01-00-56517	Employee Paid Time Off Exp	0.00	-	-	-	-	-	-
01-00-56520	Deferred Comp-Employer Contrib	0.00	86,485	86,485	(86,485)	-	(86,485)	-
01-00-57100	Depreciation Expenses-Curr Yr	0.00	1,061,255	1,061,255	(1,061,255)	-	(1,061,255)	-
	E05 Sub Totals:	0.00	2,032,941	2,032,941	(2,032,941)	-	(2,032,941)	-

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	Expense Sub Totals:	21,295,311.11	25,452,092	25,452,092	(4,156,781)	-	(4,156,781)	-
	Dept 00 Sub Totals:	-14,229,118.36	(6,614,009)	(6,614,009)	(7,615,109)	-		
Dept 01-20	BOARD							
E05	PAYROLL & EMPLOYEE EXPENSES							
01-20-56202	Board Member Expenses	0.00	1,350	1,350	(1,350)	-	(1,350)	-
	E05 Sub Totals:	0.00	1,350	1,350	(1,350)	-	(1,350)	-
E40	ADMINISTRATION & HR EXPENSES							
01-20-56501	FISCAR	0.00	84	84	(84)	-	(84)	-
01-20-56502	MEDIR	0.00	20	20	(20)	-	(20)	-
	E40 Sub Totals:	0.00	103	103	(103)	-	(103)	-
	Expense Sub Totals:	0.00	1,453	1,453	(1,453)	-	(1,453)	-
	Dept 20 Sub Totals:	0.00	1,453	1,453	(1,453)	-		
Dept 01-31	PUMPING							
E05	PAYROLL & EMPLOYEE EXPENSES							
01-31-56101	Regular Salaries	85,495.51	70,317	70,317	15,179	-	15,179	18
01-31-56103	Overtime Paid, Comptime Earn.	500.00	549	549	(49)	-	(49)	-
01-31-56501	Employer'S Share Fica Ssi	5,300.72	4,233	4,233	1,068	-	1,068	20
01-31-56502	Employer'S Share Fica Medicare	1,239.68	840	840	400	-	400	32
01-31-56503	Medical Ins Acwa Health Ben	18,110.00	10,664	10,664	7,446	-	7,446	41
01-31-56504	Dental Insurance	956.38	293	293	664	-	664	69
01-31-56505	Vision Ins Acwa	223.00	312	312	(89)	-	(89)	-
01-31-56506	Life, S/T,L/T Disability Ins	670.72	172	172	498	-	498	74
01-31-56507	Retirement-Calpers	14,277.75	7,235	7,235	7,043	-	7,043	49
01-31-56515	Worker'S Compensation Ins	3,243.68	1,786	1,786	1,458	-	1,458	45
01-31-56516	State Unemployment Ins, E.T.T.	200.00	117	117	83	-	83	41
01-31-56520	Deferred Comp-Employer Contrib	2,600.00	229	229	2,371	-	2,371	91
01-31-56524	Other Post Employment Benefits	741.27	-	-	741	-	741	100
	E05 Sub Totals:	133,558.71	96,747	96,747	36,811	-	36,811	28
E10	PUMPING OPERATION EXPENSES							
01-31-63100	Equipment Maintenance/Repair	61,500.00	45,674	45,674	15,826	-	15,826	26
01-31-63401	Building Maintenance	1,500.00	2,350	2,350	(850)	-	(850)	-

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01-31-72000	Supplies & Services	12,000.00	14,943	14,943	(2,943)	6,652	(9,595)	-
01-31-72150	Regulatory Permits	7,500.00	1,600	1,600	5,900	-	5,900	79
01-31-73000	Small Tools And Equipment	1,000.00	-	-	1,000	-	1,000	100
01-31-78000	Utilities - Electricity	526,000.00	495,943	495,943	30,057	-	30,057	6
	E10 Sub Totals:	609,500.00	560,509	560,509	48,991	6,652	42,338	7
	Expense Sub Totals:	743,058.71	657,257	657,257	85,802	6,652	79,150	11
	Dept 31 Sub Totals:	743,058.71	657,257	657,257	85,802	6,652		
Dept 01-32	OPERATIONS							
E05	PAYROLL & EMPLOYEE EXPENSES							
01-32-56101	Regular Salaries	625,640.76	582,970	582,970	42,670	-	42,670	7
01-32-56103	Overtime Paid, Comptime Earn.	45,000.00	56,909	56,909	(11,909)	-	(11,909)	-
01-32-56501	Employer'S Share Fica Ssi	38,789.73	37,909	37,909	881	-	881	2
01-32-56502	Employer'S Share Fica Medicare	9,071.79	9,555	9,555	(484)	-	(484)	-
01-32-56503	Medical Ins Acwa Health Ben	109,421.32	101,459	101,459	7,962	-	7,962	7
01-32-56504	Dental Insurance	8,911.14	2,938	2,938	5,973	-	5,973	67
01-32-56505	Vision Ins Acwa	2,338.84	2,774	2,774	(435)	-	(435)	-
01-32-56506	Life, S/T,L/T Disability Ins	6,136.36	1,504	1,504	4,633	-	4,633	75
01-32-56507	Retirement-Calpers	104,482.01	59,488	59,488	44,994	-	44,994	43
01-32-56509	Employee Holidays	0.00	733	733	(733)	-	(733)	-
01-32-56512	Employee Training/Tuition Reim	2,000.00	3,501	3,501	(1,501)	-	(1,501)	-
01-32-56515	Worker'S Compensation Ins	20,492.98	17,216	17,216	3,277	-	3,277	16
01-32-56516	State Unemployment Ins, E.T.T.	1,410.50	1,315	1,315	96	-	96	7
01-32-56517	Employee Paid Time Off Exp	0.00	10,494	10,494	(10,494)	-	(10,494)	-
01-32-56518	Duty Pay	10,400.00	13,536	13,536	(3,136)	-	(3,136)	-
01-32-56520	Deferred Comp-Employer Contrib	16,900.00	2,342	2,342	14,558	-	14,558	86
01-32-56524	Other Post Employment Benefits	5,424.48	-	-	5,424	-	5,424	100
	E05 Sub Totals:	1,006,419.91	904,643	904,643	101,777	-	101,777	10
E15	WATER OPERATION EXPENSES							
01-32-60000	Electronics	39,900.00	13,885	13,885	26,015	3,202	22,813	57
01-32-63100	Equipment Maintenance/Repairs	20,500.00	16,529	16,529	3,972	-	3,972	19
01-32-63102	Equipment Maintenance Contract	52,800.00	17,546	17,546	35,254	-	35,254	67
01-32-63401	Building Maintenance	1,000.00	198	198	802	-	802	80
01-32-72000	Supplies And Services	310,000.00	224,454	224,454	85,546	17,553	67,994	22
01-32-72010	Tank Maintenance	661,600.00	647,186	647,186	14,414	-	14,414	2
01-32-72150	Regulatory Permits	36,000.00	12,327	12,327	23,673	-	23,673	66
01-32-72200	Books And Resources	0.00	123	123	(123)	-	(123)	-

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01-32-72400	Dues & Subscriptions	0.00	-	-	-	-	-	-
01-32-72700	Printing & Reproductions	5,000.00	5,522	5,522	(522)	-	(522)	-
01-32-72702	Public Notices/Advertising	0.00	-	-	-	-	-	-
01-32-73000	Small Tools And Equipment	1,000.00	243	243	757	3,000	(2,243)	-
01-32-75300	Travel/Conf/Training	1,500.00	2,377	2,377	(877)	-	(877)	-
01-32-78000	Utilities	11,900.00	14,490	14,490	(2,590)	-	(2,590)	-
01-32-82000	Capital Equipment	0.00	445	445	(445)	-	(445)	-
	E15 Sub Totals:	1,141,200.00	955,324	955,324	185,876	23,755	162,121	14
	Expense Sub Totals:	2,147,619.91	1,859,967	1,859,967	287,653	23,755	263,898	12
	Dept 32 Sub Totals:	2,147,619.91	1,859,967	1,859,967	287,653	23,755		
Dept 01-33	VALVE MAINTENANCE							
E05	PAYROLL & EMPLOYEE EXPENSES							
01-33-56101	Regular Salaries	300,525.41	309,665	309,665	(9,139)	-	(9,139)	-
01-33-56103	Overtime Paid, Comptime Earn.	4,500.00	9,562	9,562	(5,062)	-	(5,062)	-
01-33-56501	Employer'S Share Fica Ssi	18,632.58	19,100	19,100	(467)	-	(467)	-
01-33-56502	Employer'S Share Fica Medicare	4,357.62	4,801	4,801	(444)	-	(444)	-
01-33-56503	Medical Ins Acwa Health Ben	70,702.80	57,784	57,784	12,919	-	12,919	18
01-33-56504	Dental Insurance	4,526.41	1,589	1,589	2,938	-	2,938	65
01-33-56505	Vision Ins Acwa	890.88	1,558	1,558	(667)	-	(667)	-
01-33-56506	Life, S/T,L/T Disability Ins	3,160.06	807	807	2,353	-	2,353	74
01-33-56507	Retirement-Calpers	50,187.74	32,029	32,029	18,159	-	18,159	36
01-33-56509	Employee Holidays	0.00	705	705	(705)	-	(705)	-
01-33-56512	Employee Training/Tuition Reim	1,200.00	442	442	758	-	758	63
01-33-56515	Worker'S Compensation Ins	11,401.86	7,886	7,886	3,516	-	3,516	31
01-33-56516	State Unemployment Ins, E.T.T.	1,008.00	749	749	259	-	259	26
01-33-56517	Employee Paid Time Off Exp	0.00	5,420	5,420	(5,420)	-	(5,420)	-
01-33-56520	Deferred Comp-Employer Contrib	10,400.00	1,375	1,375	9,025	-	9,025	87
01-33-56524	Other Post Employment Benefits	2,605.64	-	-	2,606	-	2,606	100
	E05 Sub Totals:	484,099.00	453,471	453,471	30,628	-	30,628	6
E20	VALVE MAINTENANCE EXPENSES							
01-33-72000	Supplies And Services-Sewer	61,500.00	81,035	81,035	(19,535)	190	(19,725)	-
01-33-73000	Small Tools And Equipment	1,000.00	163	163	837	-	837	84
01-33-75300	Travel/Conferences/Training	1,000.00	-	-	1,000	-	1,000	100
01-33-82000	Shop And Field Equipment	50,000.00	75,206	75,206	(25,206)	-	(25,206)	-
	E20 Sub Totals:	113,500.00	156,404	156,404	(42,904)	190	(43,093)	-
E25	WATER DISTRIBUTION EXPENSES							
01-33-56514	Employee Training	0.00	195	195	(195)	-	(195)	-
	E25 Sub Totals:	0.00	195	195	(195)	-	(195)	-

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	Expense Sub Totals:	597,599.00	610,069	610,069	(12,470)	190	(12,660)	-
	Dept 33 Sub Totals:	597,599.00	610,069	610,069	(12,470)	190		
Dept 01-34	WATER DISTRIBUTION							
E05	PAYROLL & EMPLOYEE EXPENSES							
01-34-56101	Regular Salaries	894,168.55	839,975	839,975	54,193	-	54,193	6
01-34-56103	Overtime Paid, Comptime Earn.	80,000.00	64,865	64,865	15,135	-	15,135	19
01-34-56501	Employer'S Share Fica Ssi	55,438.45	51,182	51,182	4,257	-	4,257	8
01-34-56502	Employer'S Share Fica Medicare	12,965.44	13,133	13,133	(168)	-	(168)	-
01-34-56503	Medical Ins Acwa Health Ben	173,015.28	131,163	131,163	41,853	-	41,853	24
01-34-56504	Dental Insurance	11,027.35	3,185	3,185	7,842	-	7,842	71
01-34-56505	Vision Ins Acwa	2,338.84	3,417	3,417	(1,078)	-	(1,078)	-
01-34-56506	Life, S/T,L/T Disability Ins	7,700.46	1,717	1,717	5,983	-	5,983	78
01-34-56507	Retirement-Calpers	149,326.15	71,558	71,558	77,768	-	77,768	52
01-34-56509	Employee Holidays	0.00	1,180	1,180	(1,180)	-	(1,180)	-
01-34-56512	Employee Training/Tuition Reim	5,000.00	2,328	2,328	2,672	-	2,672	53
01-34-56515	Worker'S Compensation Ins	34,863.19	20,427	20,427	14,436	-	14,436	41
01-34-56516	State Unemployment Ins, E.T.T.	2,646.00	2,315	2,315	331	-	331	13
01-34-56517	Employee Paid Time Off Exp	0.00	16,223	16,223	(16,223)	-	(16,223)	-
01-34-56518	Duty Pay	10,400.00	12,785	12,785	(2,385)	-	(2,385)	-
01-34-56520	Deferred Comp-Employer Contrib	24,700.00	2,408	2,408	22,292	-	22,292	90
01-34-56524	Other Post Employment Benefits	7,752.70	-	-	7,753	-	7,753	100
	E05 Sub Totals:	1,471,342.41	1,237,859	1,237,859	233,483	-	233,483	16
E25	WATER DISTRIBUTION EXPENSES							
01-34-72000	Supplies And Services	358,184.00	394,028	394,028	(35,844)	6,580	(42,424)	-
01-34-73000	Small Tools And Equipment	1,500.00	-	-	1,500	-	1,500	100
01-34-75300	Sewage Treat.-Oceanside Plant	1,500.00	300	300	1,200	-	1,200	80
	E25 Sub Totals:	361,184.00	394,327	394,327	(33,143)	6,580	(39,723)	-
	Expense Sub Totals:	1,832,526.41	1,632,187	1,632,187	200,340	6,580	193,760	11
	Dept 34 Sub Totals:	1,832,526.41	1,632,187	1,632,187	200,340	6,580		

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Dept 01-35	METER SERVICES							
E05	PAYROLL & EMPLOYEE EXPENSES							
01-35-56101	Regular Salaries	436,907.36	455,384	455,384	(18,476)	-	(18,476)	-
01-35-56103	Overtime Paid, Comptime Earn.	3,000.00	17,643	17,643	(14,643)	-	(14,643)	-
01-35-56501	Employer'S Share Fica Ssi	27,088.26	27,364	27,364	(276)	-	(276)	-
01-35-56502	Employer'S Share Fica Medicare	6,335.16	6,945	6,945	(610)	-	(610)	-
01-35-56503	Medical Ins Acwa Health Ben	80,818.38	68,039	68,039	12,779	-	12,779	16
01-35-56504	Dental Insurance	5,308.23	1,691	1,691	3,617	-	3,617	68
01-35-56505	Vision Ins Acwa Serv Corp	1,057.92	2,464	2,464	(1,406)	-	(1,406)	-
01-35-56506	Life, S/T, L/T Disability Ins	3,691.95	893	893	2,799	-	2,799	76
01-35-56507	Retirement - Calpers	72,963.53	45,575	45,575	27,388	-	27,388	38
01-35-56509	Employee Holidays	0.00	762	762	(762)	-	(762)	-
01-35-56510	Employee Vacation	0.00	4,018	4,018	(4,018)	-	(4,018)	-
01-35-56512	Employee Training/Tuition Reim	2,000.00	1,339	1,339	661	-	661	33
01-35-56515	Worker'S Compensation Ins	19,069.91	10,314	10,314	8,756	-	8,756	46
01-35-56516	State Unemployment Ins, E.T.T.	1,485.75	1,176	1,176	310	-	310	21
01-35-56517	Employee Paid Time Off Exp	0.00	8,923	8,923	(8,923)	-	(8,923)	-
01-35-56520	Deferred Comp-Employer Contrib	14,950.00	1,318	1,318	13,632	-	13,632	91
	E05 Sub Totals:	674,676.45	653,848	653,848	20,828	-	20,828	3
E30	METER SERVICES EXPENSES							
01-35-56524	OTHER POST EMPLOYMENT BENEF	3,788.11	-	-	3,788	-	3,788	100
01-35-63404	District Paid Insurance Claims	230,050.00	227,796	227,796	2,254	-	2,254	1
01-35-72000	Supplies & Services	88,000.00	126,321	126,321	(38,321)	-	(38,321)	-
01-35-73000	Small Tools And Equipment	800.00	502	502	298	-	298	37
01-35-75300	Replacement Reserve-Oceanside	500.00	-	-	500	-	500	100
01-35-82000	Shop And Field Equipment	130,000.00	195,140	195,140	(65,140)	-	(65,140)	-
	E30 Sub Totals:	453,138.11	549,759	549,759	(96,621)	-	(96,621)	-
	Expense Sub Totals:	1,127,814.56	1,203,607	1,203,607	(75,792)	-	(75,792)	-
	Dept 35 Sub Totals:	1,127,814.56	1,203,607	1,203,607	(75,792)	-		

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Dept 01-36	GARAGE							
E25	WATER DISTRIBUTION EXPENSES							
01-36-72000	Supplies And Services	0.00	(84)	(84)	84	-	84	-
	E25 Sub Totals:	0.00	(84)	(84)	84	-	84	-
	Expense Sub Totals:	0.00	(84)	(84)	84	-	84	-
	Dept 36 Sub Totals:	0.00	(84)	(84)	84	-		
Dept 01-41	ADMINISTRATION/HR							
E15	WATER OPERATION EXPENSES							
01-41-72000	Supplies And Services	0.00	-	-	-	-	-	-
	E15 Sub Totals:	0.00	-	-	-	-	-	-
E25	WATER DISTRIBUTION EXPENSES							
01-41-63401	Building Maint/Furnishing	0.00	556	556	(556)	-	(556)	-
	E25 Sub Totals:	0.00	556	556	(556)	-	(556)	-
	Expense Sub Totals:	0.00	556	556	(556)	-	(556)	-
	Dept 41 Sub Totals:	0.00	556	556	(556)	-		
Dept 01-91	ENGINEERING							
E30	METER SERVICES EXPENSES							
01-91-82000	Shop And Field Equipment	0.00	13	13	(13)	-	(13)	-
	E30 Sub Totals:	0.00	13	13	(13)	-	(13)	-
	Expense Sub Totals:	0.00	13	13	(13)	-	(13)	-
	Dept 91 Sub Totals:	0.00	13	13	(13)	-		
	Fund Revenue Sub Totals:	35,524,429.47	32,066,101	32,066,101	3,458,329	-	3,458,329	10
	Fund Expense Sub Totals:	27,743,929.70	31,417,116	31,417,116	(3,673,186)	37,177	(3,710,363)	-
	Fund 01 Sub Totals:	-7,780,499.77	(648,985)	(648,985)	(7,131,515)	37,177		

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Fund 02	SEWER FUND							
Dept 02-00								
R10	WATER REVENUE							
02-00-41210	Sewer Charges-Developing Accts	352,438.19	130,129	130,129	222,309	-	222,309	63
02-00-43101	Sewer-Oakcrest Service Charges	7,699.00	9,129	9,129	(1,430)	-	(1,430)	-
02-00-43106	Operating Inc-Sewer Letter Fee	0.00	950	950	(950)	-	(950)	-
02-00-43110	Operating Inc-Plan Chk/Ins Fee	0.00	17,836	17,836	(17,836)	-	(17,836)	-
	R10 Sub Totals:	360,137.19	158,044	158,044	202,094	-	202,094	56
R30	WASTEWATER REVENUE							
02-00-41110	Sewer Charges-Established Acct	2,441,447.88	2,474,858	2,474,858	(33,410)	-	(33,410)	-
02-00-49109	NON OPERATING REVENUE	0.00	-	-	-	-	-	-
	R30 Sub Totals:	2,441,447.88	2,474,858	2,474,858	(33,410)	-	(33,410)	-
R40	INTEREST EXPENSE							
02-00-49301	Property Tax Rev - Ad Valorem	41,263.00	48,733	48,733	(7,470)	-	(7,470)	-
	R40 Sub Totals:	41,263.00	48,733	48,733	(7,470)	-	(7,470)	-
R50	INTEREST INCOME							
02-00-49201	Interest Revenues-Sewer Fund	84,675.00	(404)	(404)	85,079	-	85,079	100
	R50 Sub Totals:	84,675.00	(404)	(404)	85,079	-	85,079	100
R80	CURRENT YEAR NET REV/EXP							
02-00-39200	Current Year Net Rev/Exp	0.00	-	-	-	-	-	-
	R80 Sub Totals:	0.00	-	-	-	-	-	-
	Revenue Sub Totals:	2,927,523.07	2,681,230	2,681,230	246,293	-	246,293	8
E05	PAYROLL & EMPLOYEE EXPENSES							
02-00-56517	Employee Paid Time Off Exp	0.00	-	-	-	-	-	-
	E05 Sub Totals:	0.00	-	-	-	-	-	-
E60	WASTEWATER EXPENSES							
02-00-52176	OVERHEAD TRANSFER TO GEN FUN	0.00	172,759	172,759	(172,759)	-	(172,759)	-
02-00-57100	DEPRECIATION EXPENSES-CURR YI	0.00	214,805	214,805	(214,805)	-	(214,805)	-
	E60 Sub Totals:	0.00	387,564	387,564	(387,564)	-	(387,564)	-
	Expense Sub Totals:	0.00	387,564	387,564	(387,564)	-	(387,564)	-
	Dept 00 Sub Totals:	-2,927,523.07	(2,293,666)	(2,293,666)	(633,857)	-		
Dept 02-61	WASTEWATER							
E05	PAYROLL & EMPLOYEE EXPENSES							
02-61-56101	Regular Salaries	401,514.35	378,305	378,305	23,209	-	23,209	6

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02-61-56103	Overtime Paid, Comp Time Earn.	60,000.00	24,527	24,527	35,473	-	35,473	59
02-61-56501	Employer'S Share Fica Ssi	24,893.89	24,035	24,035	859	-	859	3
02-61-56502	Employer'S Share Fica Medicare	5,821.96	6,053	6,053	(231)	-	(231)	-
02-61-56503	Medical Ins Acwa Health Ben	90,993.36	76,479	76,479	14,514	-	14,514	16
02-61-56504	Dental Insurance	8,230.00	1,745	1,745	6,485	-	6,485	79
02-61-56505	Vision Ins Acwa	1,113.60	2,100	2,100	(987)	-	(987)	-
02-61-56506	Life, S/T,L/T Disability Ins	4,686.35	849	849	3,838	-	3,838	82
02-61-56507	Retirement-Calpers	67,052.90	38,778	38,778	28,275	-	28,275	42
02-61-56509	Employee Holidays	0.00	906	906	(906)	-	(906)	-
02-61-56512	Employee Training/Tuition Reim	3,000.00	1,728	1,728	1,272	-	1,272	42
02-61-56515	Worker'S Compensation Ins	18,711.41	10,183	10,183	8,528	-	8,528	46
02-61-56516	State Unemployment Ins, E.T.T.	1,260.00	1,051	1,051	209	-	209	17
02-61-56517	Employee Paid Time Off Exp	0.00	7,149	7,149	(7,149)	-	(7,149)	-
02-61-56518	Duty Pay	10,400.00	12,500	12,500	(2,100)	-	(2,100)	-
02-61-56520	Deferred Comp-Employer Contrib	13,000.00	1,393	1,393	11,607	-	11,607	89
02-61-56524	Other Post Employment Benefits	3,481.24	-	-	3,481	-	3,481	100
	E05 Sub Totals:	714,159.06	587,782	587,782	126,377	-	126,377	18
E60	WASTEWATER EXPENSES							
02-61-60000	Equipment	47,800.00	34,181	34,181	13,619	12,690	929	2
02-61-63100	Equipment Maintenance-Sewer	19,000.00	9,182	9,182	9,818	-	9,818	52
02-61-63401	Building Maintenance	500.00	-	-	500	-	500	100
02-61-70300	Legal Services	0.00	10,716	10,716	(10,716)	-	(10,716)	-
02-61-72000	Supplies And Services-Sewer	74,000.00	66,605	66,605	7,395	-	7,395	10
02-61-72150	Regulatory Permits	4,600.00	5,480	5,480	(880)	-	(880)	-
02-61-72200	Books And Resources	300.00	-	-	300	-	300	100
02-61-72400	Dues And Subscriptions	800.00	538	538	262	-	262	33
02-61-72600	Sewer Line Cleaning	33,000.00	28,817	28,817	4,183	-	4,183	13
02-61-72702	Public Notices Advertising	0.00	-	-	-	-	-	-
02-61-73000	Small Tools And Equipment	2,000.00	1,899	1,899	101	689	(588)	-
02-61-75300	Travel/Conferences/Training	2,000.00	749	749	1,251	-	1,251	63
02-61-77000	Sewage Treat.-Oceanside Plant	970,000.00	460,348	460,348	509,652	-	509,652	53
02-61-77100	Replacement Reserve-Oceanside	331,100.00	-	-	331,100	-	331,100	100
02-61-78000	Utilities	50,000.00	62,334	62,334	(12,334)	-	(12,334)	-
02-61-78300	Hazardous Waster Material Disp	12,000.00	9,090	9,090	2,910	-	2,910	24
02-61-78700	Utilities-Propane	2,000.00	4,967	4,967	(2,967)	-	(2,967)	-
02-61-82000	Shop And Field Equipment	20,000.00	21,096	21,096	(1,096)	-	(1,096)	-
02-61-83000	Vehicles	0.00	-	-	-	-	-	-

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	E60 Sub Totals:	1,569,100.00	716,002	716,002	853,098	13,379	839,720	54
	Expense Sub Totals:	2,283,259.06	1,303,783	1,303,783	979,476	13,379	966,097	42
	Dept 61 Sub Totals:	2,283,259.06	1,303,783	1,303,783	979,476	13,379		
	Fund Revenue Sub Totals:	2,927,523.07	2,681,230	2,681,230	246,293	-	246,293	8
	Fund Expense Sub Totals:	2,283,259.06	1,691,347	1,691,347	591,912	13,379	578,533	25
	Fund 02 Sub Totals:	-644,264.01	(989,883)	(989,883)	345,619	13,379		
Fund 03	GENERAL FUND							
Dept 03-00								
R10	WATER REVENUE							
03-00-43102	Operating Inc Penalty/Int Chgs	185,000.00	208,389	208,389	(23,389)	-	(23,389)	-
03-00-43108	Operating Inc Plan Check Rev.	5,000.00	5,215	5,215	(215)	-	(215)	-
	R10 Sub Totals:	190,000.00	213,604	213,604	(23,604)	-	(23,604)	-
R50	INTEREST INCOME							
03-00-49201	Interest Revenues	0.00	1,438	1,438	(1,438)	-	(1,438)	-
	R50 Sub Totals:	0.00	1,438	1,438	(1,438)	-	(1,438)	-
R70	OTHER REVENUE							
03-00-42200	Overhead Trs From Water, Sewer	0.00	1,279,697	1,279,697	(1,279,697)	-	(1,279,697)	-
03-00-49108	Non Oper Inc-Rents And Leases	65,000.00	150,909	150,909	(85,909)	-	(85,909)	-
03-00-49109	Miscellaneous Revenue	8,500.00	51,529	51,529	(43,029)	-	(43,029)	-
03-00-49114	MISC Revenue - Eng. Services	0.00	2,549	2,549	(2,549)	-	(2,549)	-
	R70 Sub Totals:	73,500.00	1,484,684	1,484,684	(1,411,184)	-	(1,411,184)	-
R80	CURRENT YEAR NET REV/EXP							
03-00-39200	Current Year Net Rev/Exp	0.00	-	-	-	-	-	-
	R80 Sub Totals:	0.00	-	-	-	-	-	-
	Revenue Sub Totals:	263,500.00	1,699,726	1,699,726	(1,436,226)	-	(1,436,226)	-
E05	PAYROLL & EMPLOYEE EXPENSES							
03-00-56102	Temporary Extra Help	0.00	-	-	-	-	-	-
03-00-56517	Employee Paid Time Off Exp	0.00	-	-	-	-	-	-
	E05 Sub Totals:	0.00	-	-	-	-	-	-
	Expense Sub Totals:	0.00	-	-	-	-	-	-

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	Dept 00 Sub Totals:	-263,500.00	(1,699,726)	(1,699,726)	1,436,226	-		
Dept 03-20	BOARD							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-20-56202	Board Member Expenses	13,500.00	10,650	10,650	2,850	-	2,850	21
03-20-70000	Professional Services	0.00	-	-	-	-	-	-
03-20-72000	Supplies And Services	300.00	22	22	278	-	278	93
03-20-75300	Travel/Conferences/Training	7,495.00	1,939	1,939	5,556	-	5,556	74
	E05 Sub Totals:	21,295.00	12,612	12,612	8,683	-	8,683	41
E40	ADMINISTRATION & HR EXPENSES							
03-20-56501	FICAR	0.00	567	567	(567)	-	(567)	-
03-20-56502	MEDIR	0.00	133	133	(133)	-	(133)	-
03-20-56515	Worker's Compensation Ins.	79.65	-	-	80	-	80	100
	E40 Sub Totals:	79.65	700	700	(620)	-	(620)	-
	Expense Sub Totals:	21,374.65	13,312	13,312	8,063	-	8,063	38
	Dept 20 Sub Totals:	21,374.65	13,312	13,312	8,063	-		
E75	BOARD OF DIRECTORS							
03-22-75300	Travel/Conf/Training	0.00	48	48	(48)	-	(48)	-
	E75 Sub Totals:	0.00	48	48	(48)	-	(48)	-
	Expense Sub Totals:	0.00	48	48	(48)	-	(48)	-
	Dept 22 Sub Totals:	0.00	48	48	(48)	-		
Dept 03-24								
E40	ADMINISTRATION & HR EXPENSES							
E75	BOARD OF DIRECTORS							
03-25-75300	Travel/Conf/Training	0.00	457	457	(457)	-	(457)	-
	E75 Sub Totals:	0.00	457	457	(457)	-	(457)	-
	Expense Sub Totals:	0.00	457	457	(457)	-	(457)	-
	Dept 25 Sub Totals:	0.00	457	457	(457)	-		

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Dept 03-26								
E40	ADMINISTRATION & HR EXPENSES							
Dept 03-29	WALKER-BOARD MEMBER							
E75	BOARD OF DIRECTORS							
03-29-56202	Director's Compensation	0.00	-	-	-	-	-	-
03-29-75300	Travel/Conf/Training	0.00	100	100	(100)	-	(100)	-
	E75 Sub Totals:	0.00	100	100	(100)	-	(100)	-
	Expense Sub Totals:	0.00	100	100	(100)	-	(100)	-
	Dept 29 Sub Totals:	0.00	100	100	(100)	-		
Dept 03-34	WATER DISTRIBUTION							
Dept 03-36	GARAGE							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-36-56101	Regular Salaries	87,631.73	83,913	83,913	3,719	-	3,719	4
03-36-56103	Overtime Paid, Comp Time Earn.	1,000.00	-	-	1,000	-	1,000	100
03-36-56501	Employer'S Share Fica Ssi	5,433.17	4,678	4,678	755	-	755	14
03-36-56502	Employer'S Share Fica Medicare	1,270.66	1,183	1,183	88	-	88	7
03-36-56503	Medical Ins Acwa Health Ben	18,552.72	14,978	14,978	3,574	-	3,574	19
03-36-56504	Dental Insurance	1,618.14	317	317	1,301	-	1,301	80
03-36-56505	Vision Ins Acwa	214.25	414	414	(200)	-	(200)	-
03-36-56506	Life, S/T,L/T Disability Ins	1,333.72	158	158	1,175	-	1,175	88
03-36-56507	Retirement-Calpers	14,634.50	7,978	7,978	6,657	-	6,657	45
03-36-56509	Employee Holidays	0.00	-	-	-	-	-	-
03-36-56512	Employee Training/Tuition Reim	500.00	-	-	500	-	500	100
03-36-56515	Worker'S Compensation Ins	1,906.69	2,047	2,047	(140)	-	(140)	-
03-36-56516	State Unemployment Ins, E.T.T.	242.58	206	206	37	-	37	15
03-36-56520	Deferred Comp-Employer Contrib	2,500.98	238	238	2,263	-	2,263	90
03-36-56524	Other Post Employment Benefits	759.79	-	-	760	-	760	100
	E05 Sub Totals:	137,598.93	116,110	116,110	21,489	-	21,489	16
E35	GARAGE EXPENSES							
03-36-56517	EMPLOYEE PAID TIME OFF EXP	0.00	1,632	1,632	(1,632)	-	(1,632)	-
03-36-63000	Equipment	2,000.00	4,270	4,270	(2,270)	11,000	(13,270)	-
03-36-63100	Equipment Maintenance	20,000.00	80,640	80,640	(60,640)	23,891	(84,532)	-

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03-36-63421	Fuel And Oil	144,375.00	75,639	75,639	68,736	19,039	49,697	34
03-36-63422	Repair, Supplies, Auto	70,000.00	69,570	69,570	430	47,948	(47,518)	-
03-36-72000	Supplies And Services	5,500.00	5,979	5,979	(479)	11,000	(11,479)	-
03-36-72100	Vendor Discounts Earned	0.00	-	-	-	-	-	-
03-36-72150	Regulatory Permits	2,700.00	1,541	1,541	1,159	-	1,159	43
03-36-72200	Books And Resources	0.00	-	-	-	-	-	-
03-36-73000	Small Tools And Equipment	1,000.00	1,444	1,444	(444)	-	(444)	-
03-36-75300	Travel/Conferences/Training	1,000.00	-	-	1,000	-	1,000	100
03-36-78300	Hazardous Waste	0.00	-	-	-	-	-	-
03-36-82000	Shop And Field Equipment	0.00	-	-	-	-	-	-
03-36-83000	Vehicles	215,000.00	209,289	209,289	5,711	-	5,711	3
	E35 Sub Totals:	461,575.00	450,004	450,004	11,571	112,878	(101,308)	-
	Expense Sub Totals:	599,173.93	566,115	566,115	33,059	112,878	(79,819)	-
	Dept 36 Sub Totals:	599,173.93	566,115	566,115	33,059	112,878		
Dept 03-41	ADMINISTRATION/HR							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-41-56101	Regular Salaries	739,627.64	612,772	612,772	126,855	-	126,855	17
03-41-56103	Overtime Paid, Comp Time Earn.	3,100.00	8,834	8,834	(5,734)	-	(5,734)	-
03-41-56501	Employer'S Share Fica Ssi	45,856.91	27,254	27,254	18,603	-	18,603	41
03-41-56502	Employer'S Share Fica Medicare	10,724.60	8,614	8,614	2,111	-	2,111	20
03-41-56503	Medical Ins Acwa Health Ben	94,146.24	57,958	57,958	36,189	-	36,189	38
03-41-56504	Dental Insurance	13,657.41	1,822	1,822	11,836	-	11,836	87
03-41-56505	Vision Ins Acwa	1,808.30	1,345	1,345	463	-	463	26
03-41-56506	Life, S/T,L/T Disability Ins	11,256.80	1,078	1,078	10,179	-	10,179	90
03-41-56507	Retirement-Calpers	123,517.82	56,468	56,468	67,050	-	67,050	54
03-41-56509	Employee Holidays	0.00	135	135	(135)	-	(135)	-
03-41-56511	Employee Uniform Allowance	16,000.00	14,433	14,433	1,567	-	1,567	10
03-41-56512	Employee Training/Tuition Reim	950.00	1,335	1,335	(385)	-	(385)	-
03-41-56515	Worker'S Compensation Ins	16,092.78	13,293	13,293	2,799	-	2,799	17

General Ledger

Interim Financials

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RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
03-41-56516	State Unemployment Ins, E.T.T.	2,047.39	1,576	1,576	471	-	471	23
03-41-56520	Deferred Comp-Employer Contrib	21,108.75	1,260	1,260	19,849	-	19,849	94
03-41-56524	Other Post Employment Benefits	6,412.78	-	-	6,413	-	6,413	100
	E05 Sub Totals:	1,106,307.42	808,176	808,176	298,131	-	298,131	27
E40	ADMINISTRATION & HR EXPENSES							
03-41-56102	TEMPORARY EXTRA HELP	0.00	48,077	48,077	(48,077)	-	(48,077)	-
03-41-56513	Employee Relations	8,475.00	8,515	8,515	(40)	-	(40)	-
03-41-56517	EMPLOYEE PAID TIME OFF EXP	0.00	5,539	5,539	(5,539)	-	(5,539)	-
03-41-60100	Computers	275,160.00	228,452	228,452	46,708	-	46,708	17
03-41-63100	Equipment Maintenance	0.00	236	236	(236)	-	(236)	-
03-41-63102	Equipment Maintenance Contract	2,500.00	-	-	2,500	-	2,500	100
03-41-63200	Equipment Rental	35,800.00	39,536	39,536	(3,736)	-	(3,736)	-
03-41-63400	Kitchen Supplies	3,000.00	3,571	3,571	(571)	1,028	(1,599)	-
03-41-63401	Building Maintenance	78,680.00	110,641	110,641	(31,961)	4,986	(36,947)	-
03-41-63402	Landscape Maintenance	0.00	-	-	-	-	-	-
03-41-63403	Other Facilities Maintenance	0.00	-	-	-	-	-	-
03-41-65000	Property/Liability Insurance	186,000.00	445,770	445,770	(259,770)	-	(259,770)	-
03-41-65100	District Paid Insurance Claims	20,000.00	5,260	5,260	14,740	-	14,740	74
03-41-70000	Professional Services	160,000.00	200,019	200,019	(40,019)	-	(40,019)	-
03-41-70300	Legal Services	200,000.00	190,360	190,360	9,640	-	9,640	5
03-41-72000	Supplies And Services	27,050.00	35,989	35,989	(8,939)	-	(8,939)	-
03-41-72200	Books And Resources	250.00	46	46	204	-	204	81
03-41-72400	Dues And Subscriptions	54,255.00	54,739	54,739	(484)	-	(484)	-
03-41-72702	Public Notices/Advertising	1,000.00	430	430	570	-	570	57
03-41-72900	Stationary & Office Supplies	15,000.00	31,067	31,067	(16,067)	5,065	(21,132)	-
03-41-73000	Small Tools & Equipment	0.00	-	-	-	-	-	-
03-41-74000	Communicatons & Phone Bills	7,500.00	13,638	13,638	(6,138)	-	(6,138)	-
03-41-74100	Phone Bill	27,476.00	47,514	47,514	(20,038)	-	(20,038)	-
03-41-74200	PHONE BILL-MOBILE	0.00	-	-	-	-	-	-
03-41-75300	Travel/Conferences/Training	23,150.00	23,382	23,382	(232)	-	(232)	-
03-41-78000	Utilities-Electricity	38,280.00	46,105	46,105	(7,825)	-	(7,825)	-
03-41-78700	Utilities -Propane	3,715.00	-	-	3,715	-	3,715	100
03-41-78900	Trash Pick-Up	5,640.00	6,072	6,072	(432)	-	(432)	-
	E40 Sub Totals:	1,172,931.00	1,544,957	1,544,957	(372,026)	11,079	(383,104)	-

General Ledger

Interim Financials

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RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	Expense Sub Totals:	2,279,238.42	2,353,133	2,353,133	(73,894)	11,079	(84,973)	-
	Dept 41 Sub Totals:	2,279,238.42	2,353,133	2,353,133	(73,894)	11,079		
Dept 03-43	SAFETY							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-43-56101	Regular Salaries	71,927.03	64,388	64,388	7,539	-	7,539	10
03-43-56103	Overtime Paid, Comp Time Earn.	300.00	812	812	(512)	-	(512)	-
03-43-56501	Employer'S Share Fica Ssi	4,459.48	4,584	4,584	(124)	-	(124)	-
03-43-56502	Employer'S Share Fica Medicare	1,042.94	1,160	1,160	(117)	-	(117)	-
03-43-56503	Medical Ins Acwa Health Ben	8,449.56	12,689	12,689	(4,240)	-	(4,240)	-
03-43-56504	Dental Insurance	1,328.15	527	527	801	-	801	60
03-43-56505	Vision Ins Acwa	175.85	448	448	(272)	-	(272)	-
03-43-56506	Life, S/T,L/T Disability Ins	1,094.70	175	175	919	-	919	84
03-43-56507	Retirement-Calpers	12,011.81	8,564	8,564	3,448	-	3,448	29
03-43-56509	Employee Holidays	0.00	-	-	-	-	-	-
03-43-56512	Employee Training/Tuition Reim	350.00	135	135	215	-	215	61
03-43-56515	Worker'S Compensation Ins	1,564.98	1,786	1,786	(221)	-	(221)	-
03-43-56516	State Unemployment Ins, E.T.T.	199.10	210	210	(11)	-	(11)	-
03-43-56520	Deferred Comp-Employer Contrib	2,052.78	516	516	1,537	-	1,537	75
03-43-56524	Other Post Employment Benefits	623.63	-	-	624	-	624	100
	E05 Sub Totals:	105,580.01	95,994	95,994	9,586	-	9,586	9
E45	SAFTEY COMPLIANCE EXPENSES							
03-43-56510	EMPLOYEE VACATION	0.00	4,546	4,546	(4,546)	-	(4,546)	-
03-43-56513	EMPLOYEE RELATIONS	0.00	346	346	(346)	-	(346)	-
03-43-56517	EMPLOYEE PAID TIME OFF EXP	0.00	5,904	5,904	(5,904)	-	(5,904)	-
03-43-63000	Equipment	0.00	-	-	-	-	-	-
03-43-63100	Equipment Maintenance	8,000.00	5,705	5,705	2,295	6,307	(4,012)	-
03-43-63102	Equipment Maintenance Contract	14,700.00	13,694	13,694	1,006	312	694	5
03-43-72000	Supplies And Services	27,500.00	9,274	9,274	18,226	3,022	15,204	55
03-43-72200	Books And Resources	200.00	-	-	200	-	200	100
03-43-72400	Dues And Subscriptions	800.00	754	754	46	-	46	6
03-43-72500	Safety Supplies	37,500.00	20,176	20,176	17,324	6,797	10,527	28
03-43-73000	Small Tools And Equipment	300.00	-	-	300	3,000	(2,700)	-
03-43-75300	Travel/Conferences/Training	3,000.00	483	483	2,517	-	2,517	84
	E45 Sub Totals:	92,000.00	60,882	60,882	31,118	19,439	11,679	13

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Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
E55	CUSTOMER SERVICE EXPENSES							
03-43-63422	Repair, Supplies, Auto	0.00	-	-	-	-	-	-
	E55 Sub Totals:	0.00	-	-	-	-	-	-
	Expense Sub Totals:	197,580.01	156,876	156,876	40,704	19,439	21,265	11
	Dept 43 Sub Totals:	197,580.01	156,876	156,876	40,704	19,439		
Dept 03-51	FINANCE							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-51-56101	Regular Salaries	365,416.15	359,749	359,749	5,668	-	5,668	2
03-51-56103	Overtime Paid, Comp Time Earn.	200.00	2,459	2,459	(2,259)	-	(2,259)	-
03-51-56501	Employer'S Share Fica Ssi	22,655.80	21,909	21,909	747	-	747	3
03-51-56502	Employer'S Share Fica Medicare	5,298.53	5,474	5,474	(175)	-	(175)	-
03-51-56503	Medical Ins Acwa Health Ben	32,890.32	35,349	35,349	(2,459)	-	(2,459)	-
03-51-56504	Dental Insurance	3,287.00	1,335	1,335	1,952	-	1,952	59
03-51-56505	Vision Ins Acwa	890.88	1,121	1,121	(230)	-	(230)	-
03-51-56506	Life, S/T,L/T Disability Ins	2,072.50	676	676	1,396	-	1,396	67
03-51-56507	Retirement-Calpers	61,024.50	30,083	30,083	30,942	-	30,942	51
03-51-56509	Employee Holidays	0.00	759	759	(759)	-	(759)	-
03-51-56512	Employee Training/Tuition Reim	2,400.00	279	279	2,121	-	2,121	88
03-51-56515	Worker'S Compensation Ins	13,986.49	7,264	7,264	6,723	-	6,723	48
03-51-56516	State Unemployment Ins, E.T.T.	1,008.00	1,116	1,116	(108)	-	(108)	-
03-51-56520	Deferred Comp-Employer Contrib	10,400.00	1,107	1,107	9,293	-	9,293	89
03-51-56524	Other Post Employment Benefits	3,168.26	-	-	3,168	-	3,168	100

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Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	E05 Sub Totals:	524,698.43	468,678	468,678	56,021	-	56,021	11
E50	FINANCE EXPENSES							
03-51-56517	EMPLOYEE PAID TIME OFF EXP	0.00	2,653	2,653	(2,653)	-	(2,653)	-
03-51-69000	Postage	43,500.00	44,145	44,145	(645)	-	(645)	-
03-51-70100	Annual Audit Services	14,420.00	18,270	18,270	(3,850)	-	(3,850)	-
03-51-70400	Bank Service Charges	50,000.00	44,595	44,595	5,405	-	5,405	11
03-51-72000	Supplies And Services	100.00	7,133	7,133	(7,033)	-	(7,033)	-
03-51-72200	Books And Resources	0.00	-	-	-	-	-	-
03-51-72400	DUES AND SUBSCRIPTIONS	0.00	-	-	-	-	-	-
03-51-72700	Printing And Reproductions	1,800.00	1,110	1,110	690	-	690	38
03-51-75300	Travel/Conferences/Training	2,500.00	1,936	1,936	564	-	564	23
	E50 Sub Totals:	112,320.00	119,842	119,842	(7,522)	-	(7,522)	-
	Expense Sub Totals:	637,018.43	588,520	588,520	48,498	-	48,498	8
	Dept 51 Sub Totals:	637,018.43	588,520	588,520	48,498	-		
Dept 03-52	CUSTOMER SERVICE							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-52-56101	Regular Salaries	194,113.78	133,149	133,149	60,965	-	60,965	31
03-52-56103	Overtime Paid, Comp Time Earn.	3,500.00	3,094	3,094	406	-	406	12
03-52-56501	Employer'S Share Fica Ssi	12,035.05	8,810	8,810	3,225	-	3,225	27
03-52-56502	Employer'S Share Fica Medicare	2,814.65	2,101	2,101	714	-	714	25
03-52-56503	Medical Ins Acwa Health Ben	34,101.36	27,206	27,206	6,896	-	6,896	20
03-52-56504	Dental Insurance	3,584.36	530	530	3,055	-	3,055	85
03-52-56505	Vision Ins Acwa	474.58	461	461	14	-	14	3
03-52-56506	Life, S/T,L/T Disability Ins	2,954.33	165	165	2,789	-	2,789	94
03-52-56507	Retirement-Calpers	32,417.00	12,241	12,241	20,176	-	20,176	62
03-52-56509	Employee Holidays	0.00	208	208	(208)	-	(208)	-
03-52-56512	Employee Training/Tuition Reim	1,000.00	-	-	1,000	-	1,000	100
03-52-56515	Worker'S Compensation Ins	4,223.52	2,047	2,047	2,177	-	2,177	52
03-52-56516	State Unemployment Ins, E.T.T.	537.33	1,155	1,155	(618)	-	(618)	-
03-52-56520	Deferred Comp-Employer Contrib	5,539.95	498	498	5,042	-	5,042	91
03-52-56524	Other Post Employment Benefits	1,683.02	-	-	1,683	-	1,683	100
	E05 Sub Totals:	298,978.93	191,664	191,664	107,315	-	107,315	36
E55	CUSTOMER SERVICE EXPENSES							
03-52-56517	EMPLOYEE PAID TIME OFF EXP	0.00	2,327	2,327	(2,327)	-	(2,327)	-
03-52-63100	Equipment Maintenance	300.00	-	-	300	-	300	100
03-52-69110	Bad Debt Exp/Billing Adjust'S	12,000.00	5,066	5,066	6,934	-	6,934	58
03-52-70000	Professional Services	0.00	-	-	-	-	-	-
03-52-72000	Supplies And Services	110,500.00	132,185	132,185	(21,685)	-	(21,685)	-
03-52-72700	Printing And Reproductions	2,200.00	2,794	2,794	(594)	-	(594)	-
03-52-75300	Travel/Conferences/Training	1,000.00	-	-	1,000	-	1,000	100

General Ledger

Interim Financials

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Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	E55 Sub Totals:	126,000.00	142,372	142,372	(16,372)	-	(16,372)	-

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Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	Expense Sub Totals:	424,978.93	334,036	334,036	90,943	-	90,943	21
	Dept 52 Sub Totals:	424,978.93	334,036	334,036	90,943	-		
Dept 03-91	ENGINEERING							
E05	PAYROLL & EMPLOYEE EXPENSES							
03-91-56101	Regular Salaries	465,967.61	363,418	363,418	102,550	-	102,550	22
03-91-56103	Overtime Paid, Comp Time Earn.	4,000.00	2,267	2,267	1,733	-	1,733	43
03-91-56501	Employer'S Share Fica Ssi	28,889.99	20,138	20,138	8,752	-	8,752	30
03-91-56502	Employer'S Share Fica Medicare	6,756.53	5,103	5,103	1,653	-	1,653	24
03-91-56503	Medical Ins Acwa Health Ben	84,591.18	53,086	53,086	31,505	-	31,505	37
03-91-56504	Dental Insurance	8,604.21	1,443	1,443	7,162	-	7,162	83
03-91-56505	Vision Ins Acwa	1,139.23	1,348	1,348	(209)	-	(209)	-
03-91-56506	Life, S/T,L/T Disability Ins	7,091.82	599	599	6,492	-	6,492	92
03-91-56507	Retirement-Calpers	77,816.59	35,195	35,195	42,622	-	42,622	55
03-91-56509	Employee Holidays	0.00	287	287	(287)	-	(287)	-
03-91-56512	Employee Training/Tuition Reim	1,200.00	-	-	1,200	-	1,200	100
03-91-56515	Worker'S Compensation Ins	10,138.50	6,080	6,080	4,059	-	4,059	40
03-91-56516	State Unemployment Ins, E.T.T.	1,289.86	1,106	1,106	184	-	184	14
03-91-56520	Deferred Comp-Employer Contrib	13,298.57	1,325	1,325	11,973	-	11,973	90
03-91-56524	Other Post Employment Benefits	4,040.07	-	-	4,040	-	4,040	100
	E05 Sub Totals:	714,824.16	491,395	491,395	223,429	-	223,429	31
E65	ENGINEERING EXPENSES							
03-91-56517	EMPLOYEE PAID TIME OFF EXP	0.00	5,228	5,228	(5,228)	-	(5,228)	-
03-91-63000	Equipment	5,000.00	-	-	5,000	-	5,000	100
03-91-63102	Equipment Maintenance Contract	62,310.00	103,500	103,500	(41,190)	-	(41,190)	-
03-91-63401	BUILDING MAINTENANCE	0.00	-	-	-	-	-	-
03-91-70000	Professional Services	200,000.00	176,773	176,773	23,227	1,600	21,627	11
03-91-72000	Supplies And Services	21,134.00	269,491	269,491	(248,357)	-	(248,357)	-
03-91-72150	Regulatory Permits	0.00	16,372	16,372	(16,372)	-	(16,372)	-
03-91-72200	Books And Resources	500.00	-	-	500	-	500	100
03-91-72400	Dues And Subscriptions	765.00	50	50	715	-	715	93
03-91-72700	Printing And Reproductions	0.00	70	70	(70)	-	(70)	-
03-91-72702	Public Notices/Advertising	0.00	38	38	(38)	-	(38)	-
03-91-73000	Small Tools & Equipment	0.00	-	-	-	-	-	-
03-91-75300	Travel/Conferences/Training	5,000.00	902	902	4,098	-	4,098	82
	E65 Sub Totals:	294,709.00	572,424	572,424	(277,715)	1,600	(279,315)	-
	Expense Sub Totals:	1,009,533.16	1,063,819	1,063,819	(54,286)	1,600	(55,886)	-
	Dept 91 Sub Totals:	1,009,533.16	1,063,819	1,063,819	(54,286)	1,600		
	Fund Revenue Sub Totals:	263,500.00	1,699,726	1,699,726	(1,436,226)	-	(1,436,226)	-

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Account Number	Description	Budget Amount	Period Amount	YTD Amount	YTD Var	Encumbered Amount	Available	% Available
	Fund Expense Sub Totals:	5,168,897.53	5,076,416	5,076,416	92,482	144,996	(52,514)	-
	Fund 03 Sub Totals:	4,905,397.53	3,376,689	3,376,689	1,528,708	144,996		
	Revenue Totals:	38,715,452.54	36,447,058	36,447,058	2,268,395	-	2,268,395	6
	Expense Totals:	35,196,086.29	38,184,879	38,184,879	(2,988,792)	195,552	(3,184,344)	-
	Report Totals:	-3,519,366.25	1,737,821	1,737,821	(5,257,187)	195,552		

GL-Budget Status (8/11/2016 - 8:20 AM)

Director's Expenses
FY 2016-2017

Disbursement Date	Description	Dennis Sanford-25	Helene Brazier-27	Tory Walker-29	Richard Bigley	William Stewart	Paul Christensen
07/31/16	CAL PERS - HEALTH INS.						$ 340.62
	ASSURANT - DENTAL INS.						
	CSDA,SAN DIEGO CHAPTER						
	WATER AGENCIES ASSOC OF S.D.						
	COUNCIL OF WATER UTILITIES			$ 25.00		$ 25.00	
	DIRECTORS' MEETINGS	$ 150.00	$ 150.00	$ 150.00	$ 150.00		
	MILEAGE EXPENSE						
	REIMBURSEMENT FROM DIRECTORS						$ (340.62)
	Monthly Totals	$ 150.00	$ 150.00	$ 175.00	$ 150.00	$ 25.00	$ -
08/31/16	CAL PERS - HEALTH INS.						
	ASSURANT - DENTAL INS.						
	CSDA,SAN DIEGO CHAPTER						
	WATER AGENCIES ASSOC OF S.D.						
	COUNCIL OF WATER UTILITIES						
	DIRECTORS' MEETINGS						
	MILEAGE EXPENSE						
	REIMBURSEMENT FROM DIRECTORS						
	Monthly Totals	$ -	$ -	$ -			$ -
09/30/16	CAL PERS - HEALTH INS.						
	ASSURANT - DENTAL INS.						
	CSDA,SAN DIEGO CHAPTER						
	WATER AGENCIES ASSOC OF S.D.						
	COUNCIL OF WATER UTILITIES						
	DIRECTORS' MEETINGS						
	MILEAGE AND EXPENSES						
	REIMBURSEMENT FROM DIRECTORS						

Bank Reconciliation

Board Audit

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Systems: 'AP'

RAINBOW MUNICIPAL WATER DISTRICT
Committed to Excellence

Check No.	Vendor/Employee	Transaction Description	Date	Amount
Fund: 01 WATER FUND				
Department: 00				
0	CHARLES C. SNEED		07/20/2016	363.00
0	EUGENE BUCKLEY		07/20/2016	363.00
0	KEVIN MILLER		07/20/2016	726.00
0	RENE BUSH		07/20/2016	726.00
0	SHERRY MULLENNIX	REIMBURSE RETIRED EMPLOYEI	07/28/2016	300.00
52353	FERGUSON WATERWORKS #1083	1 1/2"x1" BRASS BUSHING - F114	07/25/2016	11,824.59
52372	GERARDO CANCINO	EMPLOYEE COMPUTER ASSISTAI	07/28/2016	2,000.00
52383	UNUM LIFE INSURANCE	MONTHLY SHORT TERM DISABIL	07/28/2016	598.40
7211611	NATIONAL METER & AUTOMATIC	METER SUPPLIES	07/21/2016	8,389.44
7211613	PACIFIC PIPELINE SUPPLY	VALVE R/W GATE FLG	07/21/2016	8,792.68
		Total for Department: 00		34,083.11
Department: 31 PUMPING				
52346	SAN DIEGO GAS & ELECTRIC	Monthly Gas & Electric Service	07/14/2016	50,776.18
		Total for Department: 31 PUMPING		50,776.18
Department: 32 OPERATIONS				
52346	SAN DIEGO GAS & ELECTRIC	Monthly Gas & Electric Service	07/14/2016	669.84
52362	HACH	WATER QUALITY SUPPLIES	07/26/2016	1,304.83
52363	JOE'S HARDWARE	MISC ITEMS FOR RMWD	07/26/2016	21.79
52371	ED BRADLEY	SWRCB GRADE 2 WATER TREATM	07/28/2016	60.00
7211601	ABCANA INDUSTRIES	HYPOCHLORITE	07/21/2016	1,995.36
7211603	AMAZON.COM	AMAZON	07/21/2016	1,890.03
7211609	FRED PRYOR SEMINARS	TEAM BUILDING SEMINAR	07/21/2016	199.00
7211610	GRAINGER, W.W. INC.	FAN, FAN FILT GUARD, LOUVER I	07/21/2016	651.21
		Total for Department: 32 OPERATIONS		6,792.06
Department: 33 VALVE MAINTENANCE				
52355	PETTY CASH	AFTER HOURS MEAL - 4 EMPLOY	07/25/2016	32.90
		Total for Department: 33 VALVE MAINTENANCE		32.90
Department: 34 WATER DISTRIBUTION				
0	FALLBROOK EQUIPMENT RENTA	TRAILER CONCRETE MIXING	07/14/2016	318.60
0	UNDERGROUND SERVICE ALERT	LOCATE UTILITIES	07/28/2016	129.00
52337	EAGLE PAVING	REMOVE & REPLACE APPROX 36	07/14/2016	5,400.00
52347	THOMAS SJUNESON	Reimbursement for tuition fees	07/14/2016	201.00
52354	PETERS PAVING & GRADING, INC	ASPHALT REPAIRS	07/25/2016	1,360.00
52355	PETTY CASH	AFTERHOURS MEAL FOR JOB #32	07/25/2016	48.96
52358	ART'S TRENCH PLATE & KRAIL SI	MISC TRENCH PLATE RENTAL	07/26/2016	313.00
7211606	BRADY TRUCKING CO.	CLASS II BASE FOR RMWD YARD	07/21/2016	3,263.22
7211609	FRED PRYOR SEMINARS	TEAM BUILDING SEMINAR	07/21/2016	199.00
		Total for Department: 34 WATER DISTRIBUTION		11,232.78

Check No.	Vendor/Employee	Transaction Description	Date	Amount
Department: 35 METER SERVICES				
0	PALOMAR BACKFLOW	BACKFLOW CERTIFICATION TES	07/28/2016	7,044.00
52348	CHRIS HOELSCHER		07/20/2016	60.00
52361	FERGUSON WATERWORKS #1083	6 COMPOUND MTR	07/26/2016	7,504.08
		Total for Department: 35 METER SERVICES		14,608.08
		Total for Fund:01 WATER FUND		117,525.11

Check No.	Vendor/Employee	Transaction Description	Date	Amount
Fund: 02 SEWER FUND				
Department: 61 WASTEWATER				
52343	MAX-LIFE MFG. CORP	Sewer Cleaning Tools	07/14/2016	235.51
52346	SAN DIEGO GAS & ELECTRIC	Monthly Gas & Electric Service	07/14/2016	4,055.38
52349	HOUSTON AND HARRIS	Video Pipe Inspection	07/21/2016	5,555.00
52373	JASON EMERICK	SITE VISIT TO REVIEW & ASSIST	07/28/2016	450.00
52378	RAMON ZUNIGA	OFFICE OF WATER PROGRAMS/W	07/28/2016	116.68
52380	RUBEN LOPEZ	REIMBURSEMENT FOR CWEA CO	07/28/2016	83.00
52387	ANDO PILVE		07/28/2016	377.00
7211604	ATLAS PUMPING SERVICE	MONTHLY BIN RENTAL	07/21/2016	210.00
		Total for Department: 61 WASTEWATER		11,082.57
		Total for Fund:02 SEWER FUND		11,082.57

Check No.	Vendor/Employee	Transaction Description	Date	Amount
Fund: 03 GENERAL FUND				
Department: 20 BOARD				
52369	COUNCIL OF WATER UTILITIES	2 DIRECTOR'S ATTENDANCE AT (	07/28/2016	50.00
		Total for Department: 20 BOARD		50.00
Department: 36 GARAGE				
52341	KIMBALL MIDWEST	4 Pump Adapters	07/14/2016	32.75
52350	LOS ANGELES FREIGHTLINER	DIAGNOSE & REPAIR WHITE SMC	07/21/2016	5,608.71
52352	FALLBROOK AUTO PARTS	MISC SUPPLIES FOR RMWD FLEE	07/25/2016	18.86
52355	PETTY CASH	PROPANE FOR FORKLIFT	07/25/2016	77.96
52356	TONY`S CUSTOM UPHOLSTERY	REBUILD SEAT CUSHIONS AND R	07/25/2016	900.00
52357	WINZER	ITEM - 077.12.4.1 / 25PK NC GR8	07/25/2016	192.23
52360	FALLBROOK OIL CO	FUEL FOR RMWD FLEET	07/26/2016	683.92
52367	BP BATTERY		07/28/2016	542.82
52377	NETWORK FLEET, INC.	MONTHLY AIRTIME CHARGES FC	07/28/2016	780.00
		Total for Department: 36 GARAGE		8,837.25
Department: 41 ADMINISTRATION/HR				
0	ACCELA, INC. #774375		07/13/2016	24,368.75
0	MISSION VALLEY SANITATION-SI	Porta-potty rental for Cal Fire during I	07/14/2016	141.09
0	REM MECHANICAL, INC	REPAIRS	07/28/2016	212.00
0	SOUTHWEST ANSWERING SERVI(	MONTHLY ANSWERING SERVICE	07/25/2016	1,588.73
0	WESTERN LANDSCAPE MAINTEN	LANDSCAPE MAINTENANCE SER	07/28/2016	483.00
1112	MODULAR BUILDING CONCEPTS		07/20/2016	694.44
52332	BONSALL PEST CONTROL		07/13/2016	90.00
52335	CAPITAL ONE COMMERCIALS	MISC KITCHEN SUPPLIES	07/14/2016	471.51
52338	FALLBROOK WASTE AND RECYC	Monthly Refuse & Recycle	07/14/2016	335.55
52339	FEDEX	Delivery Service	07/14/2016	73.72
52345	OFFICE TEAM	Temporary Help (Human Resources)	07/14/2016	4,138.80
52351	DELL COMPUTERS	MISC COMPUTER PARTS	07/25/2016	17,875.87
52359	CDW GOVERNMENT, INC.	MISC COMPUTER PARTS	07/26/2016	2,015.99
52363	JOE'S HARDWARE	MISC PARTS AND SUPPLIES FOR I	07/26/2016	14.31
52364	SHRED-IT USA LLC	MONTHLY SERVICE AGREEMENT	07/26/2016	121.28
52366	BONSALL CHAMBER OF COMMEI	Annual Membership	07/28/2016	145.00
52368	AT&T	MONTHLY PHONE SERVICE	07/28/2016	167.58
52369	COUNCIL OF WATER UTILITIES	GM ATTENDANCE AT 07-19-16 CO	07/28/2016	25.00
52370	COVERALL NORTH AMERICA, IN(	MONTHLY SERVICE	07/28/2016	995.00
52375	MITEL LEASING	LEASE AGREEMENT	07/28/2016	575.70
52376	MODULAR BUILDING CONCEPTS	RENTAL AGREEMENT	07/28/2016	726.84
52379	MANDY RODRIGUEZ	DEPOSIT FOR DJ FOR EMPLOYEE	07/28/2016	275.00
52381	SAN DIEGO COUNTY ASSESSOR/F	PROCESSING FEE FOR RECORDIN	07/28/2016	26.00
52382	TIME WARNER CABLE	MONTHLY INTERNET CONNECTI(	07/28/2016	1,250.00
52384	VILLAGE NEWS	PUBLICATION OF PUBLIC HEARI1	07/28/2016	100.00
52385	XEROX CORP.	MONTHLY LEASE	07/28/2016	1,446.99
52386	XEROX FINANICAL SERVICES	MONTHLY LEASE	07/28/2016	567.14
7211602	ACWA/JPIA	TRAINING FOR HR MANAGER	07/21/2016	160.00
7211605	BOS-ODC OFFICE PRODUCTS INC	HR FOLDERS	07/21/2016	495.30
7211608	CULLIGAN OF ESCONDIDO	WATER SOFTENER	07/21/2016	75.00
7211612	OFFICE DEPOT	MISC OFFICE SUPPLIES	07/21/2016	935.41
7211614	PALA MESA RESORT	DEPOSIT FOR EMPLOYEE RECOG	07/21/2016	2,000.00
7211615	PROCOPIO, CORY, HARGREAVES	LEGAL SERVICES	07/21/2016	7,481.25
7211616	PRUDENTIAL OVERALL SUPPLY	MATS & MISC	07/21/2016	928.64
7211617	VILLAGE PIZZA	2ND QUARTER BIRTHDAY LUNCI	07/21/2016	82.04
		Total for Department: 41 ADMINISTRATION/HR		71,082.93
Department: 43 SAFETY				
0	T.R.Y. ENTERPRISES, INC.	PATROL SERVICE 07/01 - 07/31 & P	07/28/2016	985.00
52344	NEW PIG CORP.	ITEM - PLP201 - 22LB BAG LITE D	07/14/2016	385.63

Check No.	Vendor/Employee	Transaction Description	Date	Amount
52365	STEPHEN COFFEY	REIMBURSE FOR PURCHASE OF S	07/26/2016	150.00
52374	JERRY KRAFT	REIMBURSE FOR PURCHASE OF S	07/28/2016	150.00
		Total for Department: 43 SAFETY		1,670.63
Department: 51 FINANCE				
7211609	FRED PRYOR SEMINARS	TEAM BUILDING SEMINAR	07/21/2016	199.00
		Total for Department: 51 FINANCE		199.00
Department: 52 CUSTOMER SERVICE				
0	TCN, INC	MONTHLY 48HR NOTICE CALLS	07/25/2016	15.56
		Total for Department: 52 CUSTOMER SERVICE		15.56
Department: 91 ENGINEERING				
0	NOBEL SYSTEMS	GIS Annual Subscription for Geoview	07/14/2016	50,000.00
52355	PETTY CASH	COUNTY RECORDER COPIES	07/25/2016	95.50
7211607	CORELOGIC INFORMATION	REALQUEST MAP SEARCH, MORT	07/21/2016	252.50
7211615	PROCOPIO, CORY, HARGREAVES	LEGAL SERVICES	07/21/2016	1,624.50
		Total for Department: 91 ENGINEERING		51,972.50
		Total for Fund:03 GENERAL FUND		133,827.87

Check No.	Vendor/Employee	Transaction Description	Date	Amount
Fund: 53 SEWER CAPITAL EXPANSION				
Department: 00				
0	TETRA TECH, INC.	Construction Support Services	07/14/2016	16,280.00
		Total for Department: 00		16,280.00
		Total for Fund:53 SEWER CAPITAL EXPANSION		16,280.00

Check No.	Vendor/Employee	Transaction Description	Date	Amount
		Grand Total		278,715.55

Comparative Water Sales YTD from Prior Years

FISCAL YEAR 2016-2017

Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
591	AD	36216												83
403	AG	156957												360
5	C	0												-
231	CM	47830												110
30	CN	4900												11
24	IS	3806												9
88	MF	11307												26
326	SC	183744												422
1034	SD	279246												641
5122	SF	187516												430
7854	Total	911522												2,093

FISCAL YEAR 2015-2016

Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
601	AD	29891												69
404	AG	143174												329
6	C	4342												10
221	CM	28620												66
37	CN	6680												15
24	IS	2773												6
88	MF	11351												26
326	SC	162756												374
1038	SD	245736												564
5092	SF	148573												341
7837	Total	783896												1,800

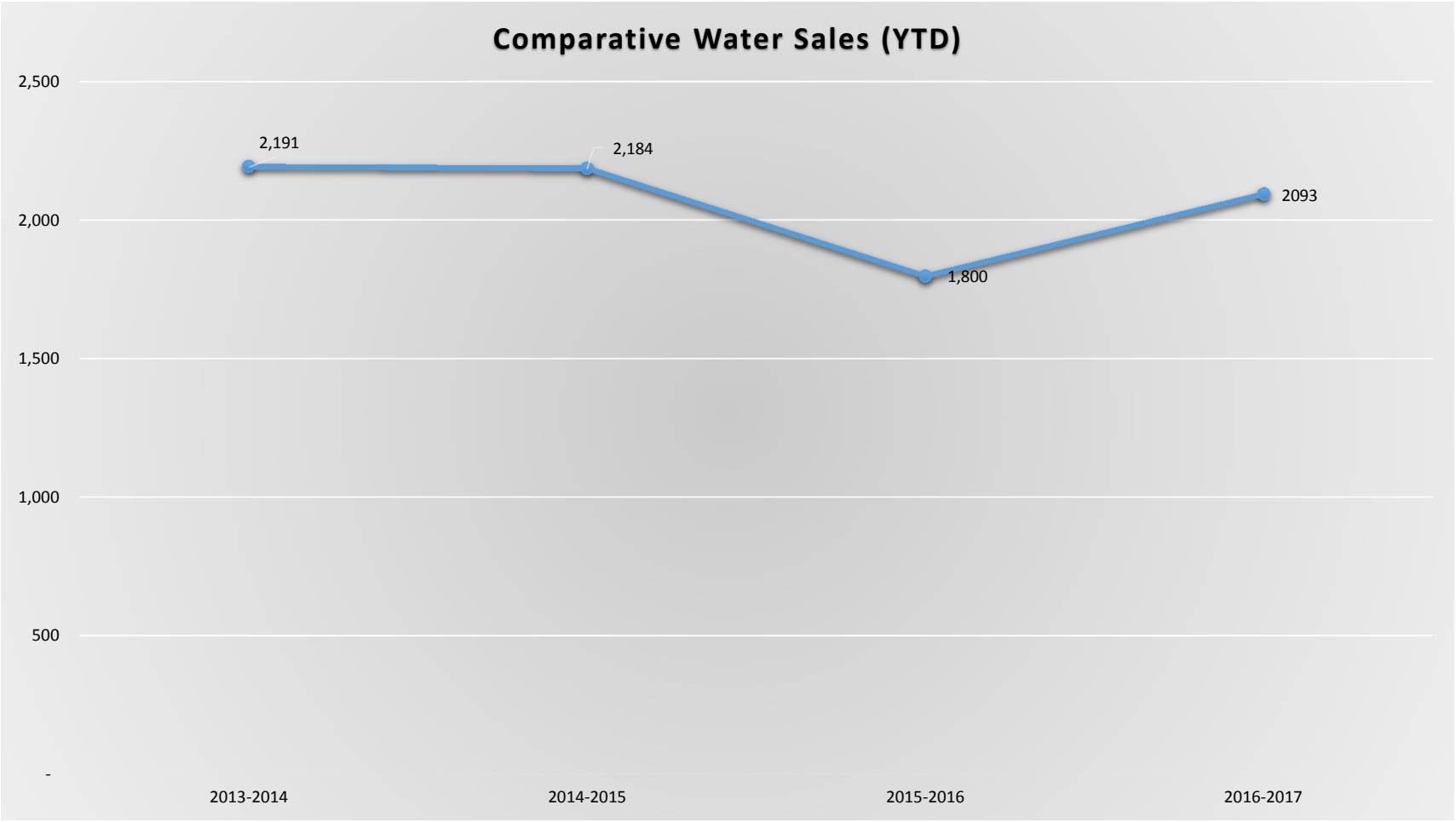
FISCAL YEAR 2014-2015

Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
426	A	118146												271
341	C	102461												235
36	CN	3175												7
5558	D	220019												505
96	MF	15917												37
323	SC	207708												477
1040	SD	284083												652
7820	Total	951509												2,184

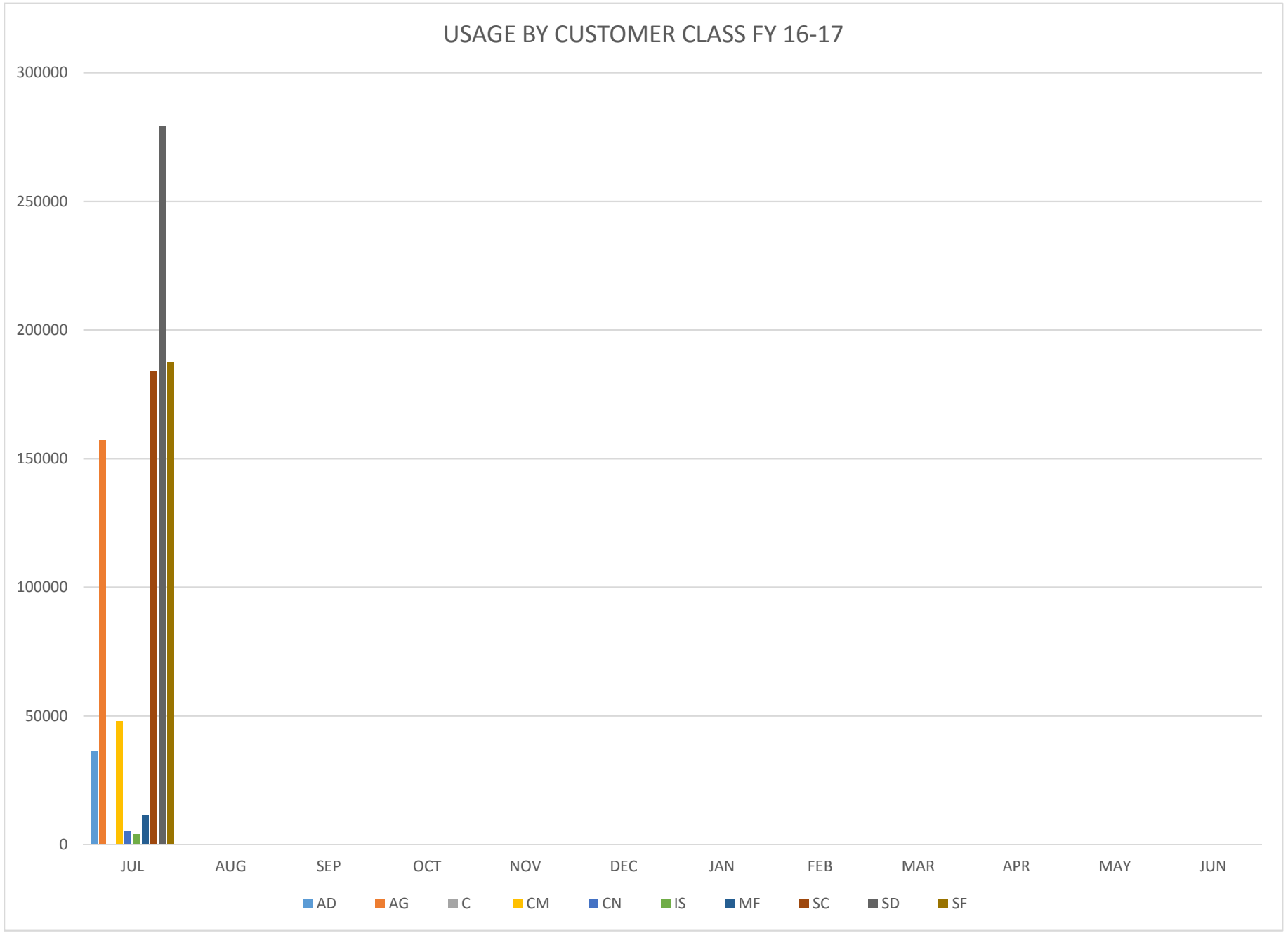
FISCAL YEAR 2013-2014

Quantity of Meters	User Code	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Acre Feet
426	A	130393												299
340	C	90317												207
36	CN	2965												7
5558	D	225641												518
96	MF	14703												34
323	SC	197030												452
1040	SD	293327												673
7819	Total	954376												2,191

Comparative Water Sales YTD from Prior Years



FY	Total
2013-2014	2,191
2014-2015	2,184
2015-2016	1,800
2016-2017	2093


USAGE BY CUSTOMER CLASS FY 16-17
300000
250000
200000
150000
100000
50000
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
AD
AG
C
CM
CN
IS
MF
SC
SD
SF

RAINBOW
MUNICIPAL WATER DISTRICT
Committed to Excellence

SEWER EQUIVALENT DWELLING UNITS (EDUs) STATUS REPORT
JULY 2016

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	3,907.60
EDUs Unconnected	1,300.84
Total EDUs Available for Purchase:	**2,648.23**

DEVELOPMENTS WITH UNCONNECTED EDUs	EDUs	CAPACITY FEES PAID	
Others (Misc. SFR)	18.40	$ 270,009	
Horse Creek Ridge/ Passarelle	850.57	$ -	
Palomar College	100.00	$ -	
Polo Club (Vista Valley Dev.)	59.85	$ 1,022,775	
Pala Mesa Highlands (Beazer Homes)	124.00	$ 965,007	*
Golf Green Estates (Dev. Solutions)	102.46	$ 1,743,180	
Lake Vista Estates (Arestad)	2.76	$ 27,195	
Vista Valley Country Club	5.00	$ 85,450	
Silver Holdings	9.00	$ 153,810	
Olive Hill Estates (Pardee Homes)	28.80	$ 687,018	
TOTAL UNCONNECTED:	**1,300.84**	**$ 4,954,444**	

*Deferred Total Payment until Building Permits are Issued.