SAN JUAN WATER DISTRICT

Board of Director's Meeting Minutes
May 11, 2016 – 7:00 p.m.

BOARD OF DIRECTORS

Pam Tobin	President
Ken Miller	Vice President
Ted Costa	Director
Dan Rich	Director
Bob Walters	Director

SAN JUAN WATER DISTRICT MANAGEMENT AND STAFF

Shauna Lorance	General Manager
Keith Durkin	Assistant General Manager
Donna Silva	Director of Finance
Teri Grant	Board Secretary/Administrative Assistant
Joshua Horowitz	Legal Counsel

OTHER ATTENDEES

Dave Underwood	Fair Oaks Water District
Vanessa Nishikawa	MWH
Ibrahim Khadam	MWH
Richard Shatz	GEI
Tony Barela	SJWD
Rob Watson	SJWD
Corey Smith	Student

AGENDA ITEMS

I. Public Forum
II. Consent Calendar
III. Presentation
IV. Old Business
V. Committee Reports
VI. Information and Action Items
VII. Upcoming Events
VIII. Adjourn

President Tobin called the meeting to order at 7:00 p.m.

I. PUBLIC FORUM

There were no public comments.

II. CONSENT CALENDAR

All items under the consent calendar are considered to be routine and are approved by one motion. There will be no separate discussion of these items

unless a member of the Board, audience, or staff request a specific item removed after the motion to approve the Consent Calendar.

1. Minutes of the Board of Directors Meetings

Approval of San Juan Water District's Board of Director's meeting minutes as follows:

1. Minutes of the Board of Directors Workshop #4, April 26, 2016
2. Minutes of the Board of Directors Meeting, April 27, 2016

Director Costa moved to approve the Consent Calendar. Director Walters seconded the motion and it carried unanimously.

In response to Director Costa's comment regarding water transfers, it was explained that the items listed on the workshop minutes reflect each stickie note that Board members placed on the board at the workshop.

III. PRESENTATION

1. Wholesale Water Management and Reliability Study Status Report

Mr. Durkin informed the Board that MWH will provide a status report on their work effort to date on the Wholesale Water Management and Reliability Study. He commented that at the conclusion of their presentation, staff recommends the Board consider a motion to approve the list of retained options that are recommended for further evaluation in their May 5, 2016 Technical Memorandum No. 4 (TM4).

Mr. Durkin reported that MWH provided the Board and Water Supply & Reliability (WS&R) Committee several briefings and updates. Those updates outlined their methodology for developing options for review and the screening process they would use to prioritize the options. The Board agreed with their approach. In addition, MWH completed a draft of TM4 that included a comprehensive list of projects identified to meet the water management and reliability objectives set forth as the goal of the study. The list of projects included the 13 identified by the WS&R Committee and approximately 15 additional projects.

Mr. Durkin explained that MWH reviewed draft TM4 with the WS&R Committee at the April 6th committee meeting. The committee discussed the draft project evaluation summaries and high-level screening process. The project list was modified by the committee and the committee agreed that the high-level screening process was appropriate to reduce the list of projects to a manageable subset for more detailed evaluation. In addition, the revised project list, Project Evaluation Summaries, and preliminary High-Level Project Evaluation Summary Comparison were further reviewed by staff and refined with MWH on April 19th.

Mr. Durkin reported that MWH prepared a final Draft TM4 that was included in the April 27th Board meeting packet for review and comment by Directors.

Based on the comments received from Directors, TM4 was finalized and provided to the Board in the agenda packet for tonight's meeting. He informed the Board that staff and MWH would like formal approval of the list of eleven options recommended for further evaluation in TM4 so that MWH can begin work on TM5: Refined Evaluation of Selected Water Management Options.

Mr. Durkin commented that it's important to recognize that even though a number of projects did not make the cut for retained options, conditions may change in the future and the Board may elect to reconsider an option that doesn't make sense today. Ms. Lorance commented that, should the Board elect to add an option into the report at a future time, additional budget would need to be approved.

Mr. Khadam conducted a presentation on *Status Report and Summary Wholesale Water Management and Reliability Study*. A copy of the presentation will be attached to the meeting minutes. He recapped the study objectives, process & schedule, and progress-to-date; described the results of preliminary screening efforts (TM4 analysis); and confirmed the short list of options for refined evaluations (upcoming TM5 analysis).

Mr. Khadam explained how MWH arrived at the short list of options. He informed the Board that the Summary of Evaluations lists all the options and the last columns show the Relative Scores, which is how MWH made the determination regarding the options to pursue in a second phase evaluation. He explained that, even though the list was reduced to eleven options, the short list of options fall into five buckets which will be evaluated.

Director Costa commented that there is a 20,000 AF site for pump storage on the north fork of the American River that PCWA completed a study on which was stopped due to the cost of a transmission pipeline. Ms. Lorance will obtain a copy of the study.

Mr. Khadam informed the Board that, moving into the refined evaluation of the selected options, MWH will provide additional descriptions of operations, availability of water supplies, and infrastructure needs; enhance performance of options through integration with other options; refine implementation requirements; and conceptual engineering and cost estimates for structural features. He reviewed the next steps with the Board which includes meeting with the Water Supply & Reliability Committee and the Wholesale Customer Agencies, separately. He anticipates providing the draft TM5, Refined Evaluation of Selected Water Management Options, to the Board in June.

Mr. Durkin informed the Board that TM4 is complete and to move forward, the Board needs to approve the list of retained water management options for further evaluation. Ms. Lorance explained that, by narrowing the list, MWH will be able to focus further evaluation on those options; however, the Board can add or remove options with the understanding that it will increase/decrease MWH's scope of work which may affect the cost of the study.

Director Rich moved to approve a list of retained water management options for further evaluation. Director Walters seconded the motion and it carried unanimously.

IV. OLD BUSINESS

1. Board Meeting Time

President Tobin reported that the Board previously discussed changing the start time of Board meetings. She recommended starting during normal business hours, like 2:00 pm, with the exception of any meetings which include public hearings or for town hall meetings. The Board discussed the topic and would like to move the Board meetings to a 6:30 pm start time.

Director Costa moved to change the meeting start time to 6:30 pm. Vice President Miller seconded the motion and it carried unanimously. However, Mr. Horowitz pointed out that the change might require a resolution or ordinance change.

Therefore, staff will research if the Board meeting times are referenced in the Code of Ordinances or if a resolution is sufficient to change the meeting time. Ms. Lorance will report back to the Board.

Director Rich commented that if more items were placed in the Consent Calendar then the meetings would be more efficient. President Tobin informed the Board that has been discussed with staff and is planned for future meetings.

For information only; no action requested.

2. Call to Action

President Tobin reminded the Board that she requested that each Director bring a list of their proposed involvement in outside activities. Each Board member presented their proposed activities as follows:

Director Walters – Continuation of the 2x2 meetings with Fair Oaks Water District Board members, RWA Lobbying Program as an alternate member, reinitiating the Drought Committee, working with legislation, and continuing as the JPIA representative.

Director Costa – Working with CVPWUA on the CVP rates, getting more information on power, and attending other agency board meetings (currently attending SSWD meetings).

President Tobin – Redefine the Drought Committee and use as community ambassadors to help the District with public outreach which is coordinated through the Public Information Committee, update the website

so that it is viewable on mobile devices, and look at District technologies to make sure they are up to date so that staff work efficiently.

Vice President Miller – Continue with assigned committee commitments and is unable at this time to take on added endeavors.

Director Rich – Continuation of the 2x2 meetings with Fair Oaks Water District Board members, would like to attend CHWD and FOWD board meeting periodically, and would like to contribute his knowledge and work with staff regarding the Prop. 218 notification.

President Tobin requested that the Board Secretary provide a list of board meetings for the other water districts in the area. President Tobin requested that the Directors coordinate attendance at other water district meetings. President Tobin would like the list of activities fine-tuned and discussed at the next meeting.

For information only; no action requested.

ACTION AND INFORMATIONAL ITEMS

V. COMMITTEE REPORTS

1. Finance Committee (5/10/16)

Director Costa reported that the committee met on May 10, 2016, and discussed the following:

- Review and Pay Bills (W & R)
- Purchase Additional Clarion (chemical used at Water Treatment Plant)
- Authorization to Purchase Vacuum Trailer
- Quarterly Financial Report – Quarter Ending 3/31/2016
- FY 2015-2016 Mid Year Budget Review
- Other Finance Matters
- Public Comment

The committee meeting minutes will be attached to the original board minutes.

Review and Pay Bills (W & R)

Director Costa reported that the committee reviewed bills and claims in the amount of $1,056,850.25 and found them to be in order.

Director Costa moved to approve Resolution 16-07. President Tobin seconded the motion and it carried unanimously.

Purchase Additional Clarion (chemical used at Water Treatment Plant)

Director Costa reported that additional Clarion A402P is needed prior to the end of FY 2015-16. A written staff report was included in the board packet. Director Costa informed the Board that the committee also discussed having more

routine items moved to the Consent Calendar for approval with staff reports provided in the Board packets. Director Walters would like the Public Information Committee to review items which are related to the drought which have increased costs.

Director Costa moved to approve the purchase of an additional 147.93 tons (6 truckloads) of Clarion A402P, liquid aluminum w/polymers blend, a water treatment chemical, at a total cost of $25,000 with a 10% contingency for a total cost of $27,500. Director Rich seconded the motion and it carried unanimously.

Authorization to Purchase Vacuum Trailer
Director Costa reported that the District's eleven year old "50HP-Ditch Witch FX60" (E#50) needs to be replaced. A written staff report was included in the board packet.

Director Miller inquired if staff looked into replacing the engine instead of the whole vehicle. It was pointed out that there are mechanical issues with the equipment and Mr. Durkin reported that the equipment will be put to auction in Nevada to help recover some costs. Ms. Lorance stated, and Mr. Barela confirmed, that the equipment was reviewed for repair or replacement with the cost of repair being a key factor in staff's recommendation to replace the equipment.

Director Costa moved to approve the purchase of a new Vacuum Trailer from the lowest bidder, RDO Equipment Co. in the amount of $80,175. President Tobin seconded the motion and it carried unanimously.

Quarterly Financial Report – Quarter Ending 3/31/2016
Ms. Silva informed the Board that the Quarterly Financial Report (Income Statement) for the quarter ending March 31, 2016, was included in the Board packet. She explained that the documents were created using a new format and completely system generated, which she believes will provide the right level of detail and summary information for the Board. She informed the Board that the only upcoming change would be the expansion of the report to include two capital reserve funds once the funds have been created.

Ms. Silva informed the Board that the Project Activity vs. Budget Report shows the CIP activity. She explained that the report is still under development as the budget information has not been incorporated into the report.

For information only; no action requested.

FY 2015-2016 Mid-Year Budget Review
Ms. Silva conducted a presentation on the FY 2015-16 Mid-Year Budget Review. A copy of the presentation will be attached to the meeting minutes. She explained that the purpose of the presentation was to update the Board and the public on the status of the current year budget as compared to actual

activity and expected activity through June. She explained that each department reviews spending activity in detail in order for the finance department to pull the overall budget together for the mid-year review.

Ms. Silva reviewed the FY 2015-16 budget, year-to-date data as of March 31, 2016, June 30th projections, and variance from the budget for the Wholesale Operating Revenue and Expenses, Wholesale Non-Operating Revenue and Expenses, and Wholesale Net Income/Loss, and reviewed the Wholesale CIP. She explained the variances for the high level categories which fell greatly above or below the budget projections.

Ms. Silva explained accrual based accounting and informed the Board that the groundwater reimbursement settlement expense will be recorded in either FY 2014-15 or FY 2015-16; however, the payment schedule for reimbursements will be decided by the Board via the financial plan. In addition, she informed the Board that the District has not budgeted for depreciation historically. She explained that best practices call for budgeting for depreciation, which would help the District fund replacement projects in the future. She explained that the wholesale depreciation would be approximately $2.5 million per year.

Ms. Silva explained that the non-operating expenses are significantly higher than budgeted due to the pump back project being moved from the CIP budget. She explained that since we do not own the asset, it is not our capital expenditure, and therefore it is a contribution to others and belongs in the non-operating expense category.

Ms. Silva informed the Board that the net impact to reserves will be approximately $2 million more than anticipated in the budget, which was due mostly to the groundwater reimbursement settlement expense. She explained that staff will be returning with a proposed wholesale budget amendment to the Board in June of approximately $200,000.

Ms. Silva reviewed the FY 2015-16 budget, year-to-date data as of March 31, 2016, June 30th projections, and variance from the budget for the Retail Operating Revenue and Expenses, Retail Non-Operating Revenue and Expenses, and Retail Net Income/Loss, and reviewed the Retail CIP. She explained the variances for the high level categories which fell greatly above or below the budget projections. In addition, she informed the Board that, in separating the wholesale and retail funds, some items have been moved in order to place them into the correct category.

Ms. Silva informed the Board that the District has not budgeted for depreciation for San Juan Retail. She explained that budgeting for depreciation would help the District fund future capital improvements. She explained that the retail depreciation would be approximately $1.5 million per year.

Ms. Silva informed the Board that the net impact to reserves will be approximately $2.6 million less than anticipated in the budget, which was mainly due to some projects being delayed.

For information only; no action requested.

Other Finance Matters (W or R)
Ms. Lorance will discuss the Governor's Executive Order and potential discussion of a different rate structure.

Ms. Lorance reported that the Personnel Committee will be discussing the email from the General Manager regarding the Assistant General Manager's contract.

For information only; no action requested.

VI. INFORMATION AND ACTION ITEMS

1. GENERAL MANAGER'S REPORT

1.1 Report Back Item
There were no items discussed.

1.2 Miscellaneous District Issues and Correspondence
Ms. Lorance reported that the State Water Resources Control Board has come out with draft modifications to the conservation requirements for the rest of 2016. She anticipates a zero percent mandatory conservation requirement for the District. She recommends that the District stay at the Stage 2 conservation requirement with a voluntary 10% reduction in water use in consideration of portions of the state still being in a drought. Mr. Horowitz explained that the District will self-certify its water supply availability and the State Water Board reserves the right to review the information submitted.

In response to Director Rich's question, Ms. Lorance explained that new development landscaping is regulated by county planning requirements; however, developers have to follow the model landscape ordinance.

Ms. Lorance informed the Board that a draft plan for long-term conservation is being requested by January 2017. She commented that it is expected that the State Board will need to have legislation passed in order to have the authority to regulate long-term conservation. The Governor's order requires the indoor per person water use be determined and included in any long term requirements. She expects that this is an indication of a desire to require water budgets in the future. Mr. Horowitz commented that the State Water Board committed to not placing legislation into a trailer bill; however, his firm will be monitoring legislation very closely.

Ms. Lorance commented that the Board needs to start discussing the option of changing the existing retail and wholesale water rate structures. She explained that with the current rate structure and declining water use, rates will continue to increase just to meet the fixed costs. She will be talking to Bob Reed, who is working on the District's financial plans, regarding moving the fixed costs, or the majority of fixed costs, that are currently in the volumetric water rate to the fixed portion of the water rate, and leaving only variable costs in the volumetric portion of the water rate.

Ms. Lorance informed the Board that a workshop will be scheduled to review the financial plans and to discuss the rate structure. Ms. Lorance informed the Board that she would like to send a letter to the State Water Board regarding their consideration of the District's request regarding mandatory conservation. The Board had no objection to a letter being sent.

Ms. Lorance reported that, as discussed at the last Board meeting, she spoke to California American Water Company. She informed the Board that California American Water might be interested in purchasing the retail portion of San Juan Water District if desired by the Board as part of the Water Reliability Study. The Board discussed the topic and directed Ms. Lorance to let them know that the Board is not interested at this time.

2. ASSISTANT GENERAL MANAGER'S REPORT

2.1 Permanent Easement at APN: 468-040-026

Mr. Durkin reported that there are property owners who are completing a four lot subdivision split and need to provide the District with an easement in order to put a water line on the property. He explained that there is no cost to the District. Director Rich suggested this is an item that could possibly be included on the Consent Calendar.

Director Walters moved to authorize staff to accept the permanent easement at APN: 468-040-026. Director Costa seconded the motion and it carried unanimously.

2.2 Report Back Items

There were no items discussed.

2.3 Miscellaneous District Issues and Correspondence

Mr. Durkin informed the Board that Mr. Rob Watson received an award on behalf of the District tonight from the American Society of Civil Engineers in recognition of the Energy Project associated with the Granite Bay Booster Pump Station. Mr. Watson thanked the Board for their support on this important project.

3. DIRECTOR OF FINANCE'S REPORT

3.1. Report Back Items
There were no items discussed.

3.2. Miscellaneous District Issues and Correspondence
There were no items discussed.

4. LEGAL COUNSEL'S REPORT

4.1 Legal Matters
No report.

5. DIRECTORS' REPORTS

5.1 SGA
No report.

5.2 RWA
President Tobin reported that RWA meets May 12, 2016.

5.3 ACWA

5.3.1 Local/Federal Government/Region 4 - Pam Tobin
President Tobin reported that she attended the ACWA Spring Conference where she attended the Local Government and Federal Affairs committee meetings. In addition, she reported to the general membership on Legal Affairs, Local Government, and Federal Affairs committee activities.

President Tobin reported that the Local Government Committee discussed the relaxation of the conservation requirements and they are reviewing certain bills that might affect the region. She reported that the Federal Affairs Committee is discussing returning to Washington, D.C. in July regarding the Warrant Act and the CVP. She reported that the Legal Affairs Committee discussed the amicus briefs. Mr. Horowitz commented that the Howard Jarvis Taxpayers Association (HJTA) sued Amador Water Agency for refusing to allow a rate referendum to go forward under Prop. 218. He stated that the trial court agreed with the water agency's position, and HJTA filed a writ of mandate and the court of appeal refused it. At this point, no further action has been taken by HJTA.

5.3.2 JPIA - Bob Walters
Director Walters reported that he will have a report at the next Board meeting.

5.3.3 Energy Committee - Ted Costa

Director Costa reported that he attended three meetings at the ACWA Spring Conference. He reported that solar and renewable energy was discussed. He informed the Board that any new solar installations should include installation of Tesla batteries which can hold the energy for future use. In addition, he attended a meeting regarding Prop. 218 and has a sample notice this he will provide to staff as an example of a suggested model for future notices.

5.4 CVP Water Users Association

No report.

5.5 Other Reports and Comments

Director Costa informed the Board that the 3.5 acre parcel off of Oak Avenue, where the District tried to drill a test well, is for sell.

President Tobin informed the Board that there is a Region 4 event on June 21st. The Board Secretary will send out the information to the Board.

VII. UPCOMING EVENTS

1. ACWA Region 2&4 Event – SGMA: The View From Above
   June 21, 2016
   Sacramento, CA
2. RWA 15th Anniversary Luncheon
   July 14, 2016
   Sacramento, CA

VIII. ADJOURN

The meeting was adjourned at 9:55 p.m.

_____
PAMELA TOBIN, President
Board of Directors
San Juan Water District

ATTEST:

_____
TERI GRANT, Board Secretary

AGENDA ITEM III-1

Board Meeting

May 11, 2016

SAN JUAN WATER
SINCE 1854

Status Report and Summary

Wholesale Water Management and Reliability Study

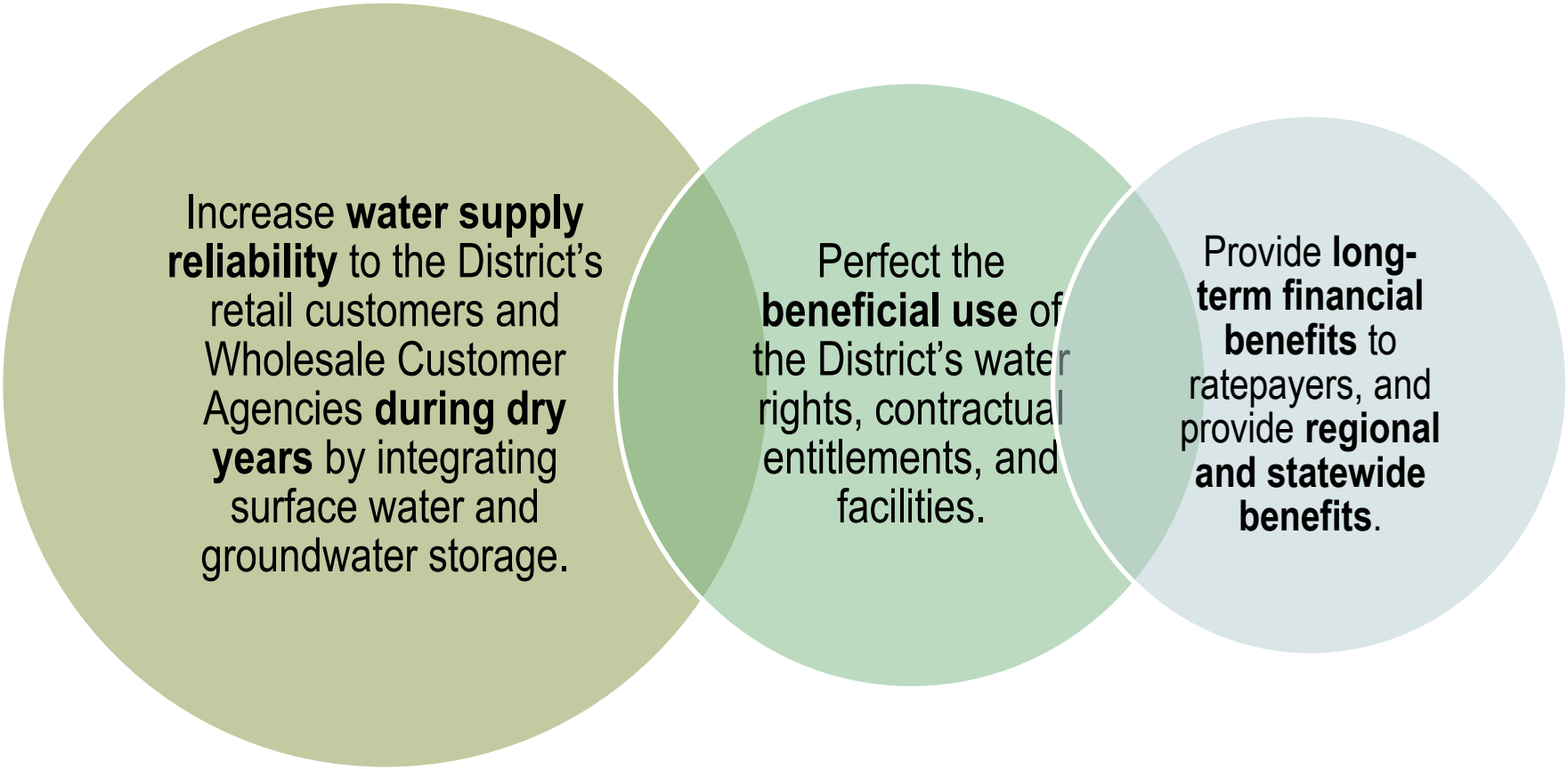
MWH®

BUILDING A BETTER WORLD

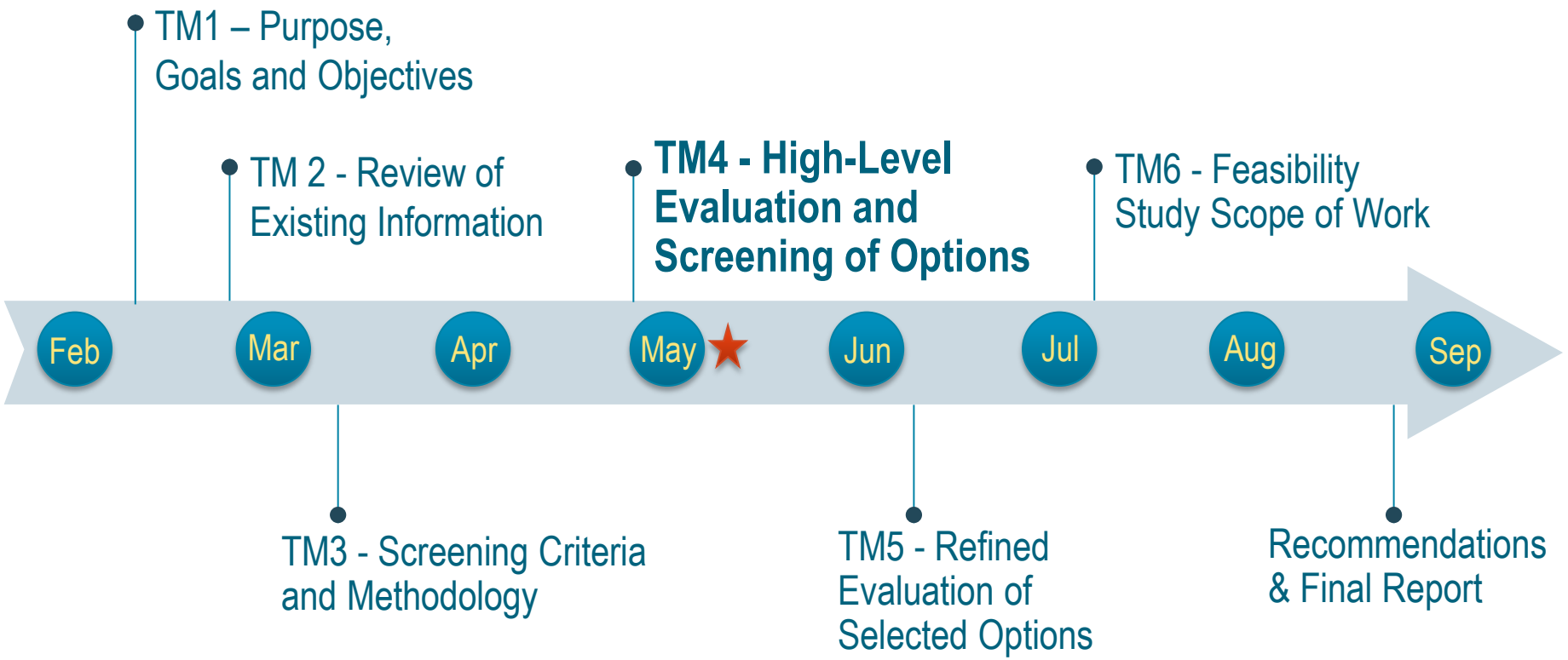
Agenda

- Recap Study objectives, process & schedule, and progress-to-date
- Describe results of preliminary screening effort (TM4 analysis)
- Confirm short list of options for refined evaluations (upcoming TM5 analysis)
- Next steps

Study Objectives



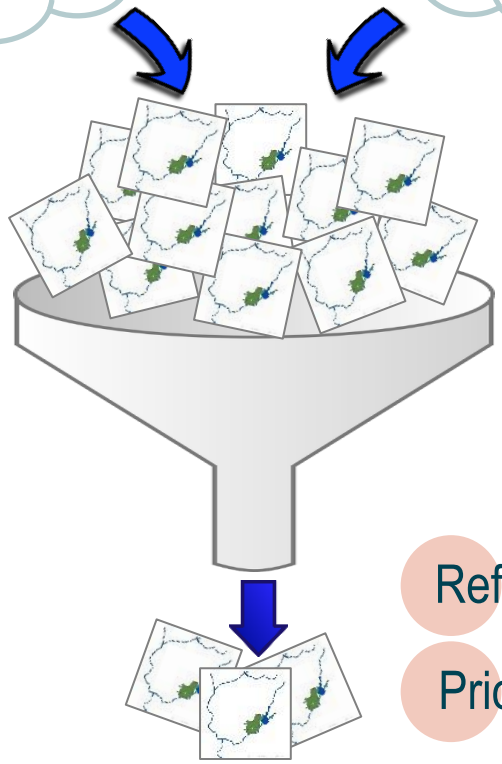
Study Process & Schedule



Two-Step Evaluation and Screening

WS&R Committee Options

Additional Options



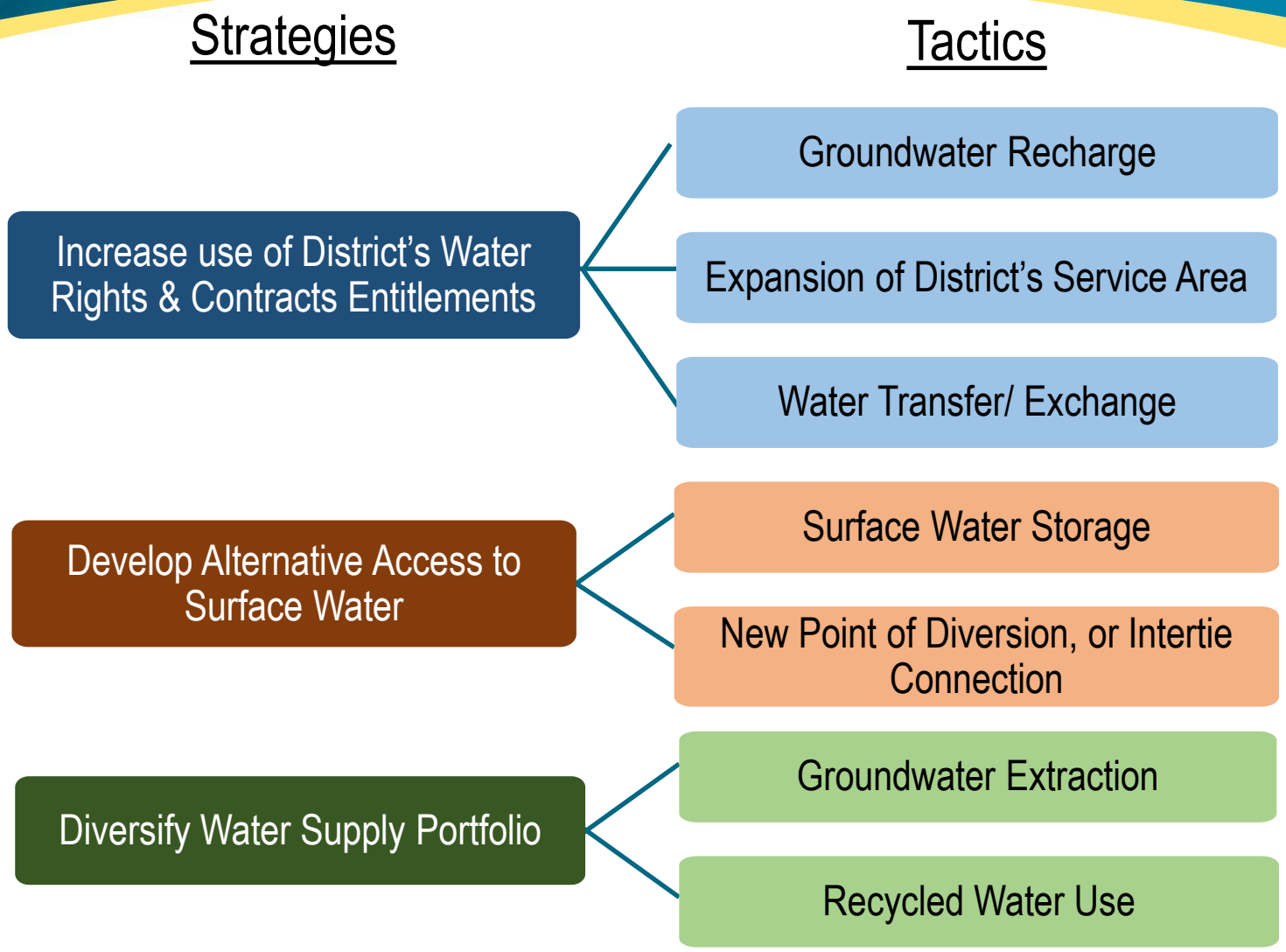
High-Level Evaluation

Preliminary Screening

Refined Evaluation of Retained Options

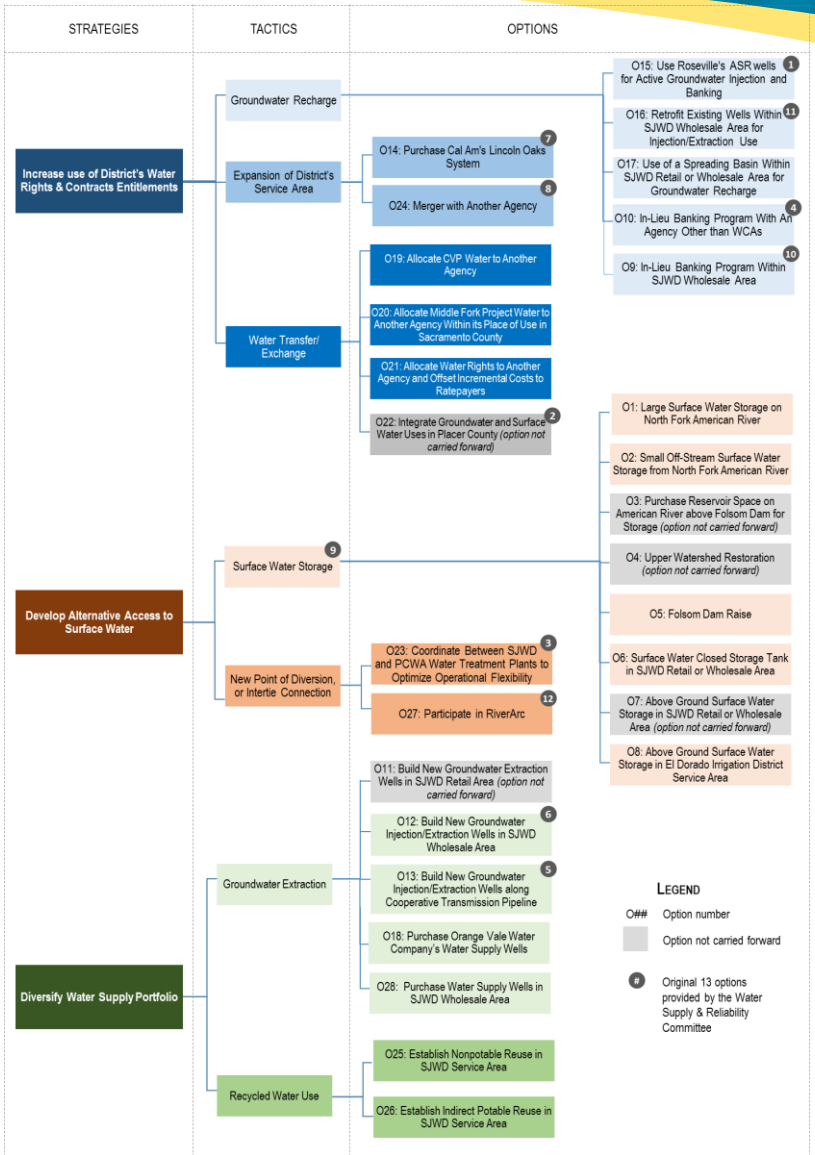
Prioritization

Development of Water Management Options



Identified Water Management Options

- A total of 28 water management options were identified
  - Including the 13 options identified by the Board WS&R committee



Evaluation Criteria and Metrics

Cost-Effectiveness	• Cost per acre-foot
Contribution to Objectives	• Dry year reliability & extreme drought conditions • Increase use of District's water supplies & treatment capacity • Provide long-term financial benefits to District ratepayers
Implementation Complexity	• Environmental & permitting requirements and approvals • Water rights and contracts requirements, Institutional • Land acquisitions, public support, & schedule
Uncertainty	• Costs • Yield and reliability

Preliminary Evaluation

- Existing information
- Qualitative & quantitative evaluation
- Consistent level of detail

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID:

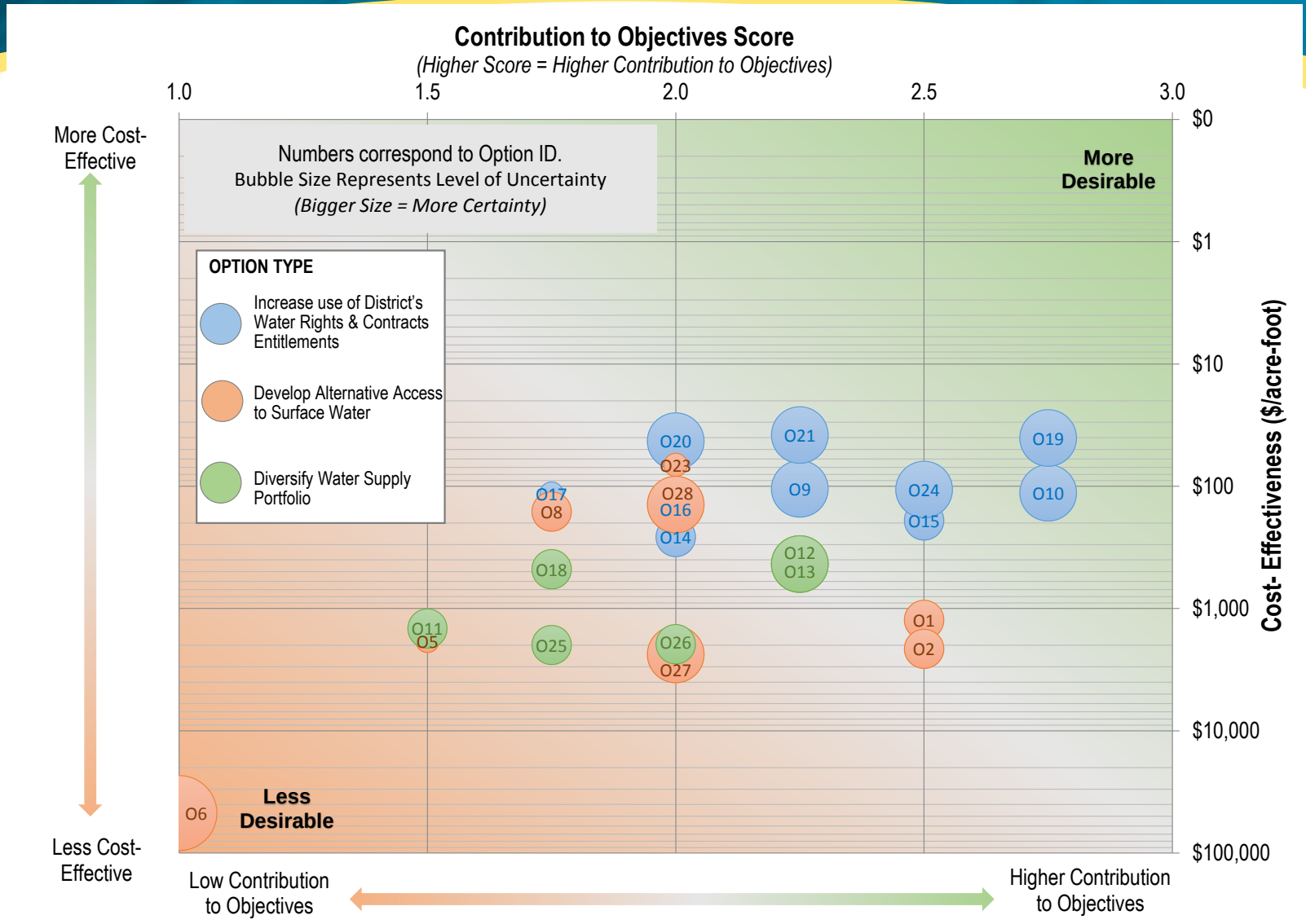
Project Name: Type:

CRITERIA / METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	1.0	N/A	
Water Supply Source	Pre-1914 and appropriative water right	APPR	
Total Cost ($)	$ 6,000,000,000	N/A	*6 to 10 billion dollar estimate (Reclamation, 2013)*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 326,228	N/A	*Annualized, 3.5% discount rate over 30 year project life*
Contribution to Objectives			
Perfect Beneficial Use	Moderate Potential	💧💧	
Improve Dry Year Reliability	High Potential	💧💧💧	
Provide Financial Benefit	Low Potential	💧	
Implementation Complexity			
Environmental Compliance Requirements	Complex: Likely EIS/EIR	💧	
Permitting Requirements	Complex: Likely Individual Permit, Formal Section 7 Consultation	💧	
Water Rights / Contracts	Moderate: Likely Change to Point of Diversion/Place of Use	💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	
Land Acquisition	High: No Willing Seller Identified	💧	
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	
Schedule	Greater than 3 years to implement	💧	
Uncertainity			
Costs	Moderate: Cost Information, No Engineering Details	💧💧	
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability	💧💧	

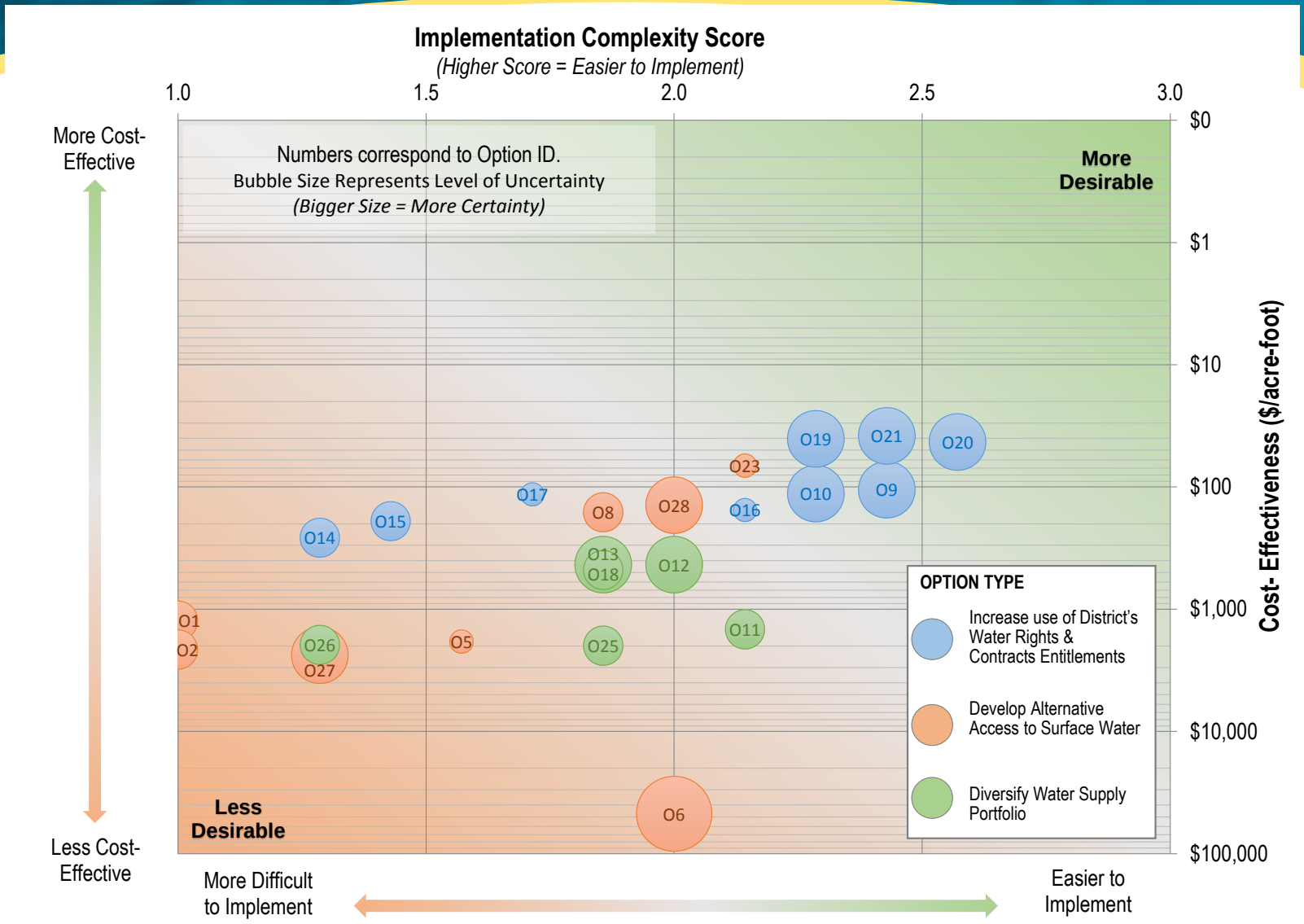
Example Summary of Evaluations

Option Information				Cost-Effectiveness			Contribution to Objectives				Implementation Complexity							Uncertainty		Relative Scores				
ID	Name	Type	Water Source	Yield - Long-term Average (TAF/year)	Total Cost ($)	Overall Cost-Effectiveness ($/AF)	Improve Dry Year Reliability	Perfect Beneficial Use	Provide Financial Benefit	Extreme Drought Conditions	Environmental Compliance Requirements	Permitting Requirements	Water Rights/Contracts	Institutional & Coordination	Land Acquisition	Public Acceptance & Support	Schedule	Costs	Yield & Reliability	Cost-Effectiveness Score	Objectives Score	Implementation Complexity Score	Uncertainty Score	Grouping
O1	Large Surface Water Storage on North Fork American River	SW	OTHR	200	$ 6,861,420,000	$ 1,241	♦♦♦	♦♦♦	♦	♦♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	0.00	2.50	1.00	1.50	C
O2	Small Off-Stream Surface Water Storage from North Fork American River	SW	OTHR	17	$ 1,011,500,000	$ 2,139	♦♦♦	♦♦♦	♦	♦♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	1.0	2.50	1.00	1.50	C
O3	Purchase Reservoir Space on American River above Folsom Dam for Storage	SW	OTHR	0	$ -	$ -	♦♦♦	♦♦♦	♦	♦♦♦	♦♦	♦♦	♦	♦	♦♦♦	♦♦	♦	♦	♦		2.50	1.71	1.00	x
O4	Upper Watershed Restoration	SW	OTHR	0	$ -	$ -	♦	♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦♦	♦♦♦	♦♦	♦	♦	♦		1.25	2.14	1.00	x
O5	Folsom Dam Raise	SW	OTHR	2	$ 87,035,000	$ 1,840	♦♦	♦	♦	♦♦	♦	♦	♦♦♦	♦	♦♦♦	♦	♦	♦	♦	1.0	1.50	1.57	1.00	C
O6	Surface Water Closed Storage Tank in SJWD Retail or Wholesale Area	SW	OTHR	0	$ 19,173,000	$ 53,076	♦	♦	♦	♦	♦♦	♦♦	♦♦♦	♦♦♦	♦	♦♦	♦	♦♦	♦♦♦	0.00	1.00	2.00	2.50	C
O7	Above Ground Surface Water Storage in SJWD Retail or Wholesale Area	SW	OTHR	0	$ -	$ -	♦♦♦	♦♦	♦	♦♦	♦	♦	♦♦♦	♦	♦	♦	♦	♦	♦		2.00	1.29	1.00	x
O8	Above Ground Surface Water Storage Basin in El Dorado Irrigation District Service Area	SW	APPR	1	$ 1,300,000	$ 161	♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦	♦	♦♦	♦♦♦	♦♦	♦	♦♦	1.00	1.75	1.86	1.50	C
O9	In-Lieu Banking Program Within SJWD Wholesale Area	GW	OTHR	1	$ 100,000	$ 105	♦♦	♦♦	♦♦♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	2.32	2.25	2.43	2.00	A
O10	In-Lieu Banking Program With an Agency Other than the WCAs	GW	OTHR	21	$ 5,200,000	$ 113	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦♦	♦♦	♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦	2.27	2.75	2.29	2.00	A
O11	Build New Groundwater Extraction Wells in SJWD Retail Area	GW	OTHR	0	$ 1,000,000	$ 1,459	♦♦	♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦♦♦	♦	♦♦♦	♦	♦	♦♦	1.0	1.50	2.14	1.50	x
O12	Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area	GW	OTHR	5	$ 27,000,000	$ 432	♦♦♦	♦♦	♦♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦	♦♦♦	♦♦	♦♦	♦♦	1.0	2.25	2.00	2.00	B
O13	Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline	GW	OTHR	5	$ 27,000,000	$ 432	♦♦♦	♦	♦♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦	♦♦♦	♦♦	♦♦	♦♦	1.0	2.25	1.86	2.00	B
O14	Purchase Cal Am's Lincoln Oaks System	GW	OTHR	17	$ 50,000,000	$ 260	♦♦	♦♦♦	♦	♦♦	♦	♦♦	♦♦	♦	♦	♦	♦	♦	♦♦	1.0	2.00	1.29	1.50	C
O15	Use Roseville's ASR wells for Active Groundwater Injection and Banking	GW	OTHR	2	$ 300,000	$ 191	♦♦	♦♦♦	♦♦	♦♦♦	♦	♦	♦♦	♦	♦	♦♦	♦♦	♦	♦♦	1.0	2.50	1.43	1.50	B
O16	Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use	GW	OTHR	13	$ 1,000,000	$ 154	♦♦	♦♦♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦♦♦	♦♦♦	♦	♦	♦	1.0	2.00	2.14	1.00	B
O17	Use of a Spreading Basin Within SJWD Retail or Wholesale Area for Groundwater Recharge	GW	OTHR	1	$ 300,000	$ 115	♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦	♦♦	♦	♦	♦	2.26	1.75	1.71	1.00	B

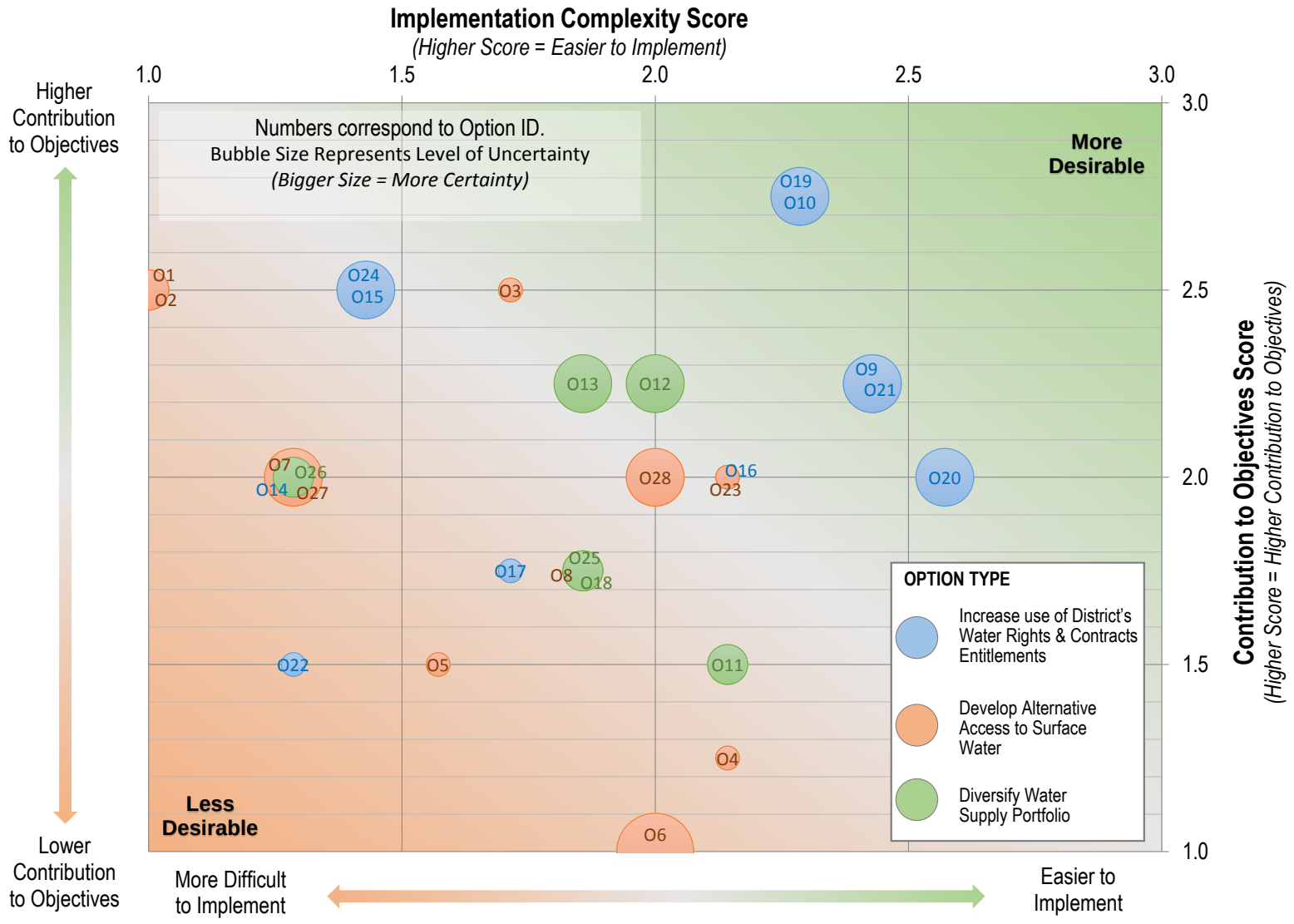
Trade-off Analysis 1/3



Trade-off Analysis 2/3



Trade-off Analysis 3/3



Process for Ranking Initial Options

Group options into 3 groups:

A. High potential – consistently high scores

B. Moderate potential – mixed scores

C. Low potential – consistently low scores

Example Summary
Initial Grouping of Options

ID	Name	Cost-Effectiveness Score	Objectives Score	Implementation Complexity Score	Uncertainty Score	Initial Grouping
O9	In-Lieu Banking Program Within SJWD Wholesale Area	2.08	2.50	2.43	2.00	A
O10	In-Lieu Banking Program With an Agency Other than the WCAs	2.35	2.50	2.29	2.00	A
O11	Build New Groundwater Extraction Wells in SJWD Retail Area	1.28	1.50	2.14	1.50	C
O12	Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area	1.85	2.25	2.00	2.00	B
O13	Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline	1.85	2.00	1.86	2.00	B
O14	Purchase Cal Am's Lincoln Oaks System	1.95	2.00	1.29	1.50	C
O15	Use Roseville's ASR wells for Active Groundwater Injection and Banking	1.98	2.75	1.43	1.50	B
O16	Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use	2.00	2.00	2.14	1.00	B
O17	Use of a Spreading Basin Within District Retail or Wholesale Area for Groundwater Recharge	2.30	1.75	1.71	1.00	B
O18	Purchase Orange Vale Water Company's Water Supply Wells	1.93	1.75	2.00	1.50	B
O19	Transfer CVP Water to Another Agency	2.75	2.75	2.43	2.00	A
O20	Transfer Middle Fork Project Water to Another Agency Within its Place of Use in Sacramento County	2.74	2.00	2.71	2.00	A

A - Mostly high scores “green”

B – Mixed scored “yellow”

C - Mostly low scores “red”

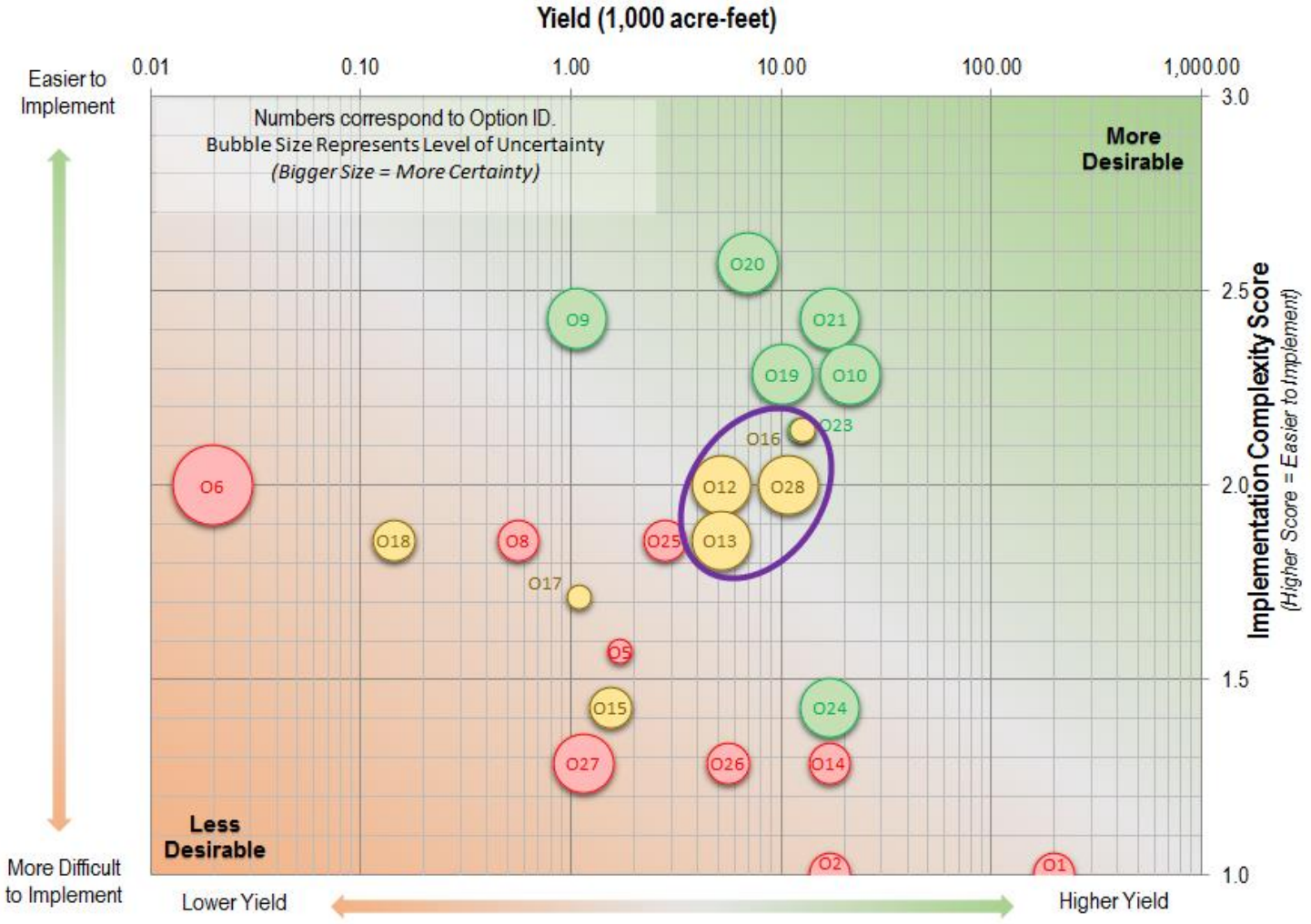
Preliminary Screening Results

Option Information				Cost-Effectiveness			Relative Scores				
ID	Name	Type	Water Source	Yield - Long-term Average (TAF/year)	Total Cost ($)	Overall Cost-Effectiveness ($/AF)	Cost-Effectiveness Score	Objectives Score	Implementation Complexity Score	Uncertainty Score	Grouping
O9	In-Lieu Banking Program Within SJWD Wholesale Area	GW	OTHR	1	$ 100,000	$ 105	2.32	2.25	2.43	2.00	A
O10	In-Lieu Banking Program With an Agency Other than the WCAs	GW	OTHR	21	$ 5,200,000	$ 113	2.27	2.75	2.29	2.00	A
O19	Allocate CVP Water to Another Agency	NS	CVP	10	$ 1,000,000	$ 40	2.74	2.75	2.29	2.00	A
O20	Allocate Middle Fork Project Water to Another Agency Within its Place of Use in Sacramento County	NS	MFP	7	$ 1,000,000	$ 43	2.72	2.00	2.57	2.00	A
O21	Allocate Water Rights to Another Agency and Offset Incremental Costs to Ratepayers	NS	APPR	17	$ 1,000,000	$ 38	2.75	2.25	2.43	2.00	A
O23	Coordinate Between SJWD and PCWA Water Treatment Plants to Optimize Operational Flexibility	SW	MFP	12	$ 15,000,000	$ 67	2.57	2.00	2.14	1.00	A
O24	Merger with Another Agency	NS	OTHR	17	$ 2,000,000	$ 106	2.31	2.50	1.43	2.00	A

Considerations of Potential Yield

OPTION GROUP RANKING

- A – High Potential
- B – Moderate Potential
- C – Low Potential



Recommendations for Retained Options

O9: In-Lieu Banking Program Within SJWD Wholesale Area	A
O10: In-Lieu Banking Program With An Agency Other than WCAs	A
O12: Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area	B
O13: Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline	B
O16: Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use	B
O28: Purchase Water Supply Wells in SJWD Wholesale Area	B
O19: Allocate CVP Water to Another Agency	A
O20: Allocate Middle Fork Project Water to Another Agency Within its Place of Use in Sac County	A
O21: Allocate Water Rights to Another Agency and Offset Incremental Costs to Ratepayers	A
O23: Coordinate Between SJWD and PCWA Water Treatment Plants to Optimize Operational Flexibility	A
O24: Merger with Another Agency	A

Refined Evaluation of Selected Options

- Additional descriptions of operations, availability of water supplies, and infrastructure needs
- Enhance performance of options through integration with other options
- Refine implementation requirements
- Conceptual engineering and cost estimates for structural features

Next Steps

District Board Comments on TM4	May 4, 2016
Revised TM4 & Presentation at District Board Meeting	May 11, 2016
Review Meeting with WS&R Committee	June 1, 2016 (tentative)
Status Meeting with Wholesale Customer Agencies	June 2, 2016 (tentative)
Draft TM5 – Refined Evaluation of Selected Water Management Options	Mid June, 2016

Technical Memorandum 4: High-Level Evaluation and Screening of Water Management Options

Wholesale Water Management and Reliability Study

PREPARED FOR

SAN JUAN WATER DISTRICT

SAN JUAN WATER
SINCE 1854

PREPARED BY

MWH
BUILDING A BETTER WORLD

5 May 2016

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Table of Contents

Tables

Figures

Attachments

List of Abbreviations and Acronyms

AF	acre-foot
ASR	aquifer storage and recovery
Cal Am	California American Water
CVP	Central Valley Project
District or SJWD	San Juan Water District
ID	Option identification number
option	water management option
O##	Option number
PCWA	Placer County Water Agency
Study	Wholesale Water Management and Reliability Study
TAF	thousand acre-feet
TM	technical memorandum
WCA	Wholesale Customer Agency
WSR	Water Supply & Reliability Committee

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1.0 Introduction and Background

This Technical Memorandum (TM) is the fourth of a series of memoranda that will look to improve management of surface water and groundwater resources within the San Juan Water District's (District) wholesale service area, and potentially outside the District's current service area. It contains the high-level evaluation and screening of the initial water management options (option) performed to help complete the District's Wholesale Water Management and Reliability Study (Study). This TM contains the following:

- Identification and screening of identified initial options.
- Results from the screening of the initial options using the developed evaluation criteria and metrics[1] to identify which options should be retained for further evaluation.
- Overview of the approach for prioritizing the retained options. This approach will use the results of a more detailed evaluation of each retained option and apply the same evaluation criteria and metrics, providing a consistent framework for evaluation, comparison, and prioritization of options.[2]

[1] Refer to TM 3 for details on the evaluation criteria and metrics.
[2] The application of this approach and the associated results will be included in a future TM.

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2.0 Water Management Options Identification and Screening

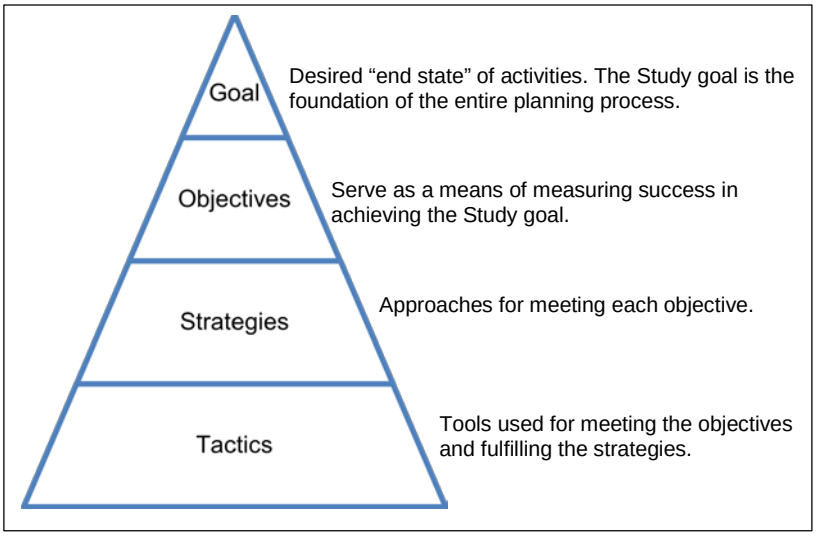
This section summarizes the Study goal, objectives, strategies, and tactics. It also lists the initial options developed for the Study, and describes how the options were identified and screened.

2.1 Study Goal, Objectives, Strategies, and Tactics

The Study goal is to improve management of surface water and groundwater resources within the District's wholesale service area, and potentially outside the District's current service area, through collaboration, consolidations, or other actions improve its water supply reliability. This goal will be achieved and measured using the following three objectives:

1. Increase water supply reliability to the District's retail customers and Wholesale Customer Agencies during dry years by integrating surface water and groundwater storage.

2. Perfect the beneficial use of the District's water rights, contractual entitlements, and facilities.



3. Provide long-term financial benefits to our ratepayers, and provide regional and statewide benefits.

In order to meet these objectives, several strategies were developed. These strategies, and associated tactics for achieving the strategies, are as follows:

A. **<u>Increase use of District's water rights and contract entitlements</u>** – Helps meet Objectives 2 and 3 of perfecting beneficial use and providing long-term financial benefits, respectively. To implement this strategy, the following tactics could be taken:

   – **Groundwater recharge** – Increases surface water supply use by recharging the groundwater basin during wet years either within or outside of the District service area. Provides both an increase in the use of water supplies and revenue received by the District from additional sales.

- **Expansion of District's service area** – Increases number of users and likely demand for District's surface water supplies. Provides both an increase in the use of water supplies and revenue received by the District from additional sales.

- **Water transfers/exchanges** – Increases use of District's surface water supplies during wet years by transferring supplies to another agency. Also, increases District revenue through implementing a new transfer.

B. **Develop alternative access to surface water** – Helps meet Objectives 1 and 2 of increasing water supply reliability and perfecting beneficial use, respectively. To implement this strategy, the following tactics could be taken:

   - **Surface water storage** – Increases use of surface water supplies in wet years by storing water when available. Consequently, increases stored surface water for later use when surface water supplies are reduced or may not be available.

   - **New point of diversion or intertie connection** – Decreases reliance on solely Folsom Lake. Unlikely to perfect beneficial use unless paired with another option such that in wet years, the District can increase its use of its surface water supplies.

C. **Diversify water supply portfolio** – Helps meet Objective 1 of increasing water supply reliability. To implement this strategy, the following tactics could be taken:

   - **Groundwater extraction** – Provides the District with another source of water aside from surface water supplies. During extreme drought conditions, when access to surface water supplies from Folsom Lake may be unavailable, the District will have access to groundwater.

   - **Recycled water use** – Provides the District with another source of water aside from surface water supplies. During extreme drought conditions, when access to surface water supplies from Folsom Lake may be unavailable, the District will have access to recycled water.

2.2 Initial Options

Figure 2-1 shows how the 28 initial options fit into the above strategies and tactics to help meet the Study's goal and objectives. Table 2-1 lists the initial options and associated identification numbering.

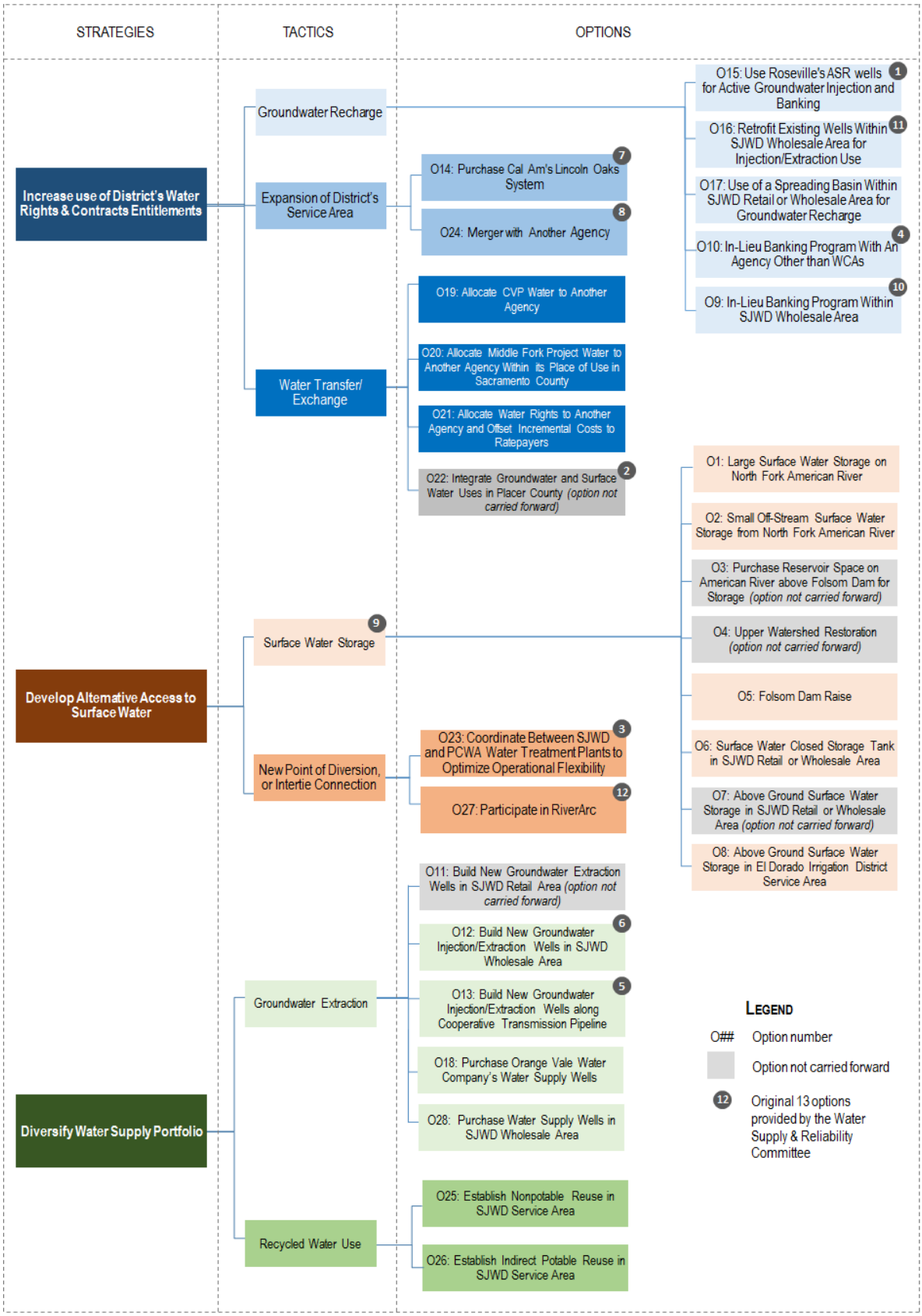


Figure 2-1. Initial Options Grouped by Strategy and Tactic

Table 2-1. List of Initial Options

ID	Name
O1	Large Surface Water Storage on North Fork American River
O2	Small Off-Surface Surface Water Storage from North Fork American River
O3	Purchase Reservoir Space on American River above Folsom Dam for Storage
O4	Upper Watershed Restoration
O5	Folsom Dam Raise
O6	Surface Water Closed Storage Tank in SJWD Retail or Wholesale Area
O7	Above Ground Surface Water Storage in SJWD Retail or Wholesale Area
O8	Above Ground Surface Water Storage Basin in El Dorado Irrigation District Service Area
O9	In-Lieu Banking Program Within SJWD Wholesale Area
O10	In-Lieu Banking Program With An Agency Other than WCAs
O11	Build New Groundwater Extraction Wells in SJWD Retail Area
O12	Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area
O13	Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline
O14	Purchase Cal Am's Lincoln Oaks System
O15	Use Roseville's ASR wells for Active Groundwater Injection and Banking
O16	Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use
O17	Use of a Spreading Basin Within SJWD Retail or Wholesale Area for Groundwater Recharge
O18	Purchase Orange Vale Water Company's Water Supply Wells
O19	Allocate CVP Water to Another Agency
O20	Allocate Middle Fork Project Water to Another Agency Within its Place of Use in Sacramento County
O21	Allocate Water Rights to Another Agency and Offset Incremental Costs to Ratepayers
O22	Integrate Groundwater and Surface Water Uses in Placer County
O23	Coordinate Between SJWD and PCWA Water Treatment Plants to Optimize Operational Flexibility
O24	Merger with Another Agency
O25	Establish Nonpotable Reuse in SJWD Service Area
O26	Establish Indirect Potable Reuse in SJWD Service Area
O27	Participate in RiverArc
O28	Purchase Water Supply Wells in SJWD Wholesale Area

Key:
ASR = aquifer storage and recovery
Cal Am = California American Water Company
CVP = Central Valley Project
ID = Identification
O## = Option number
PCWA = Placer County Water Agency
SJWD = San Juan Water District
WCA = Wholesale Customer Agency

2.3 Sources Consulted to Identify Initial Options

As part of the District's Request for Proposal for this Study (dated October 7, 2015), 13 options were provided. These options were identified by the Water Supply & Reliability Committee (WSR) for better water management of groundwater and surface water for the purpose of being included in this evaluation. These are identified with grey circles in Figure 2-1. These 13 options were expanded to 28 initial options through a wide range of input including meetings and document review. During the meetings, participants brainstormed and refined the initial options. The meetings conducted were as follows:

- Project Kick-Off Meeting with WSR and District Staff (February 2, 2016)
- District Board Meeting (March 9, 2016)
- Wholesale Customer Agency (WCA) Meeting (March 14, 2016)
- WSR Meeting (April 6, 2016)

In addition to the meetings listed above, a range of documents were reviewed to assist in identifying the initial options. Documents reviewed range from Urban Water Management Plans, Wholesale Master Plans, Integrated Regional Water Management Plans, Federal Feasibility Studies for specific projects such as Auburn Dam, Folsom Dam Raise, and Sacramento River Regional Water Reliability Project, and District reports such as the Phase 1 High-Level Feasibility Analysis for Water Supply Reliability. Refer to TM 2 for a list of documents provided by the District for this Study, and to Attachment 2 for specific references used to evaluate each individual option. This document review helped provide definition to the options discussed during the meetings, in addition to identifying other options that would help cover the full range of potential actions that the District could take to improve surface water and groundwater management.

2.4 Evaluation of Initial Options

The initial options were evaluated using both qualitative and quantitative screening criteria to support evaluation, comparison, and scoring of those options. The criteria were vetted with the District's WSR during the Project Kick-Off Meeting. Details on each criterion are presented in TM 3 and lookup tables used in the option evaluation forms for each criteria are in Attachment 1. The criteria are also summarized below as follows:

1. **Cost-effectiveness –** quantitatively measures the cost-effectiveness of an option's water supply benefits (yield) relative to its costs at a conceptual or pre-appraisal level
2. **Contribution to objectives –** quantitatively and qualitatively assesses an option's contribution to each of the Study objectives
    - Increase water supply reliability to the District's retail customers and WCAs by integrating surface water and groundwater storage thus: (1) increasing reliability

during dry years and (2) mitigating extreme drought conditions (i.e., improving the District's ability to receive water supplies during an extreme drought when there is very limited access to the District's current water rights and contract entitlements).

- Perfect the beneficial use of the District's water rights, contractual entitlements, and facilities

- Provide long-term financial benefits to District ratepayers, and provide regional and statewide benefits

3. **Implementation complexity –** qualitatively assesses how likely it is an option will be implemented within a reasonable timeframe to achieve its potential benefits relative to the following seven implementation factors or metrics:

   - Environmental compliance requirements

   - Permitting requirements and approvals

   - Water rights and contracts requirements

   - Institutional arrangements and coordination

   - Land acquisitions

   - Public acceptance and support

   - Schedule

- **Uncertainty –** qualitatively assesses level of confidence in the definition of the option with respect to the costs, and yield and reliability metrics

Using the above criteria and associated metrics, each initial options was evaluated. Refer to Attachment 2 for the full evaluations of each initial option.

2.5 Evaluation Results

Table 2-2 summarizes option evaluation results. The first four columns contain information on each option – identification number, name, project type, and water source. The next four column groupings correspond to the four evaluation criteria and show the range of scores assigned to each metric. For the cost-effectiveness criteria, the associated metrics are in terms of yield and cost. The color-scale employed for overall cost-effectiveness helps to visually group which options are the least expensive (green) to the most expensive (red). For the other three criteria, the metrics are all qualitative. Scores were developed based on each option's assigned assessment value (1, 2, or 3). The higher the value, the more likely an option will score higher.

Table 2-2. High-Level Evaluation Summary of Initial Options

Option Information				Cost-Effectiveness			Contribution to Objectives				Implementation Complexity							Uncertainty		Relative Scores				
ID	Name	Type	Water Source	Yield - Long-term Average (TAF/year)	Total Cost ($)	Overall Cost-Effectiveness ($/AF)	Improve Dry Year Reliability	Perfect Beneficial Use	Provide Financial Benefit	Extreme Drought Conditions	Environmental Compliance Requirements	Permitting Requirements	Water Rights/Contracts	Institutional & Coordination	Land Acquisition	Public Acceptance & Support	Schedule	Costs	Yield & Reliability	Cost-Effectiveness Score	Objectives Score	Implementation Complexity Score	Uncertainty Score	Grouping
O1	Large Surface Water Storage on North Fork American River	SW	OTHR	200	$ 6,861,420,000	$ 1,241	♦♦♦	♦♦♦	♦	♦♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	0.00	2.50	1.00	1.50	C
O2	Small Off-Stream Surface Water Storage from North Fork American River	SW	OTHR	17	$ 1,011,500,000	$ 2,139	♦♦♦	♦♦♦	♦	♦♦♦	♦	♦	♦	♦	♦	♦	♦	♦	♦♦	0.96	2.50	1.00	1.50	C
O3	Purchase Reservoir Space on American River above Folsom Dam for Storage	SW	OTHR	0	$ -	$ -	♦♦♦	♦♦♦	♦	♦♦♦	♦♦	♦♦	♦	♦	♦♦♦	♦♦	♦	♦	♦		2.50	1.71	1.00	x
O4	Upper Watershed Restoration	SW	OTHR	0	$ -	$ -	♦	♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦♦	♦♦♦	♦♦	♦	♦	♦		1.25	2.14	1.00	x
O5	Folsom Dam Raise	SW	OTHR	2	$ 87,035,000	$ 1,840	♦♦	♦	♦	♦♦	♦	♦	♦♦♦	♦	♦♦♦	♦	♦	♦	♦	0.96	1.50	1.57	1.00	C
O6	Surface Water Closed Storage Tank in SJWD Retail or Wholesale Area	SW	OTHR	0	$ 17,015,000	$ 47,102	♦	♦	♦	♦	♦♦	♦♦	♦♦♦	♦♦♦	♦	♦♦	♦	♦♦	♦♦♦	0.00	1.00	2.00	2.50	C
O7	Above Ground Surface Water Storage in SJWD Retail or Wholesale Area	SW	OTHR	0	$ -	$ -	♦♦♦	♦♦	♦	♦♦	♦	♦	♦♦♦	♦	♦	♦	♦	♦	♦		2.00	1.29	1.00	x
O8	Above Ground Surface Water Storage Basin in El Dorado Irrigation District Service Area	SW	APPR	1	$ 1,300,000	$ 161	♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦	♦	♦♦	♦♦♦	♦♦	♦	♦♦	1.00	1.75	1.86	1.50	C
O9	In-Lieu Banking Program Within SJWD Wholesale Area	GW	OTHR	1	$ 100,000	$ 105	♦♦	♦♦	♦♦♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	2.32	2.25	2.43	2.00	A
O10	In-Lieu Banking Program With an Agency Other than the WCAs	GW	OTHR	21	$ 5,200,000	$ 113	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦♦	♦♦	♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦	2.27	2.75	2.29	2.00	A
O11	Build New Groundwater Extraction Wells in SJWD Retail Area	GW	OTHR	0	$ 1,000,000	$ 1,459	♦♦	♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦♦♦	♦	♦♦♦	♦	♦	♦♦	0.97	1.50	2.14	1.50	x
O12	Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area	GW	OTHR	5	$ 27,000,000	$ 432	♦♦♦	♦♦	♦♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦	♦♦♦	♦♦	♦♦	♦♦	0.99	2.25	2.00	2.00	B
O13	Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline	GW	OTHR	5	$ 27,000,000	$ 432	♦♦♦	♦	♦♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦	♦♦♦	♦♦	♦♦	♦♦	0.99	2.25	1.86	2.00	B
O14	Purchase Cal Am's Lincoln Oaks System	GW	OTHR	17	$ 50,000,000	$ 260	♦♦	♦♦♦	♦	♦♦	♦	♦♦	♦♦	♦	♦	♦	♦	♦	♦♦	1.00	2.00	1.29	1.50	C
O15	Use Roseville's ASR wells for Active Groundwater Injection and Banking	GW	OTHR	2	$ 300,000	$ 191	♦♦	♦♦♦	♦♦	♦♦♦	♦	♦	♦♦	♦	♦	♦♦	♦♦	♦	♦♦	1.00	2.50	1.43	1.50	B
O16	Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use	GW	OTHR	13	$ 1,000,000	$ 154	♦♦	♦♦♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦♦♦	♦♦♦	♦	♦	♦	1.00	2.00	2.14	1.00	B
O17	Use of a Spreading Basin Within SJWD Retail or Wholesale Area for Groundwater Recharge	GW	OTHR	1	$ 300,000	$ 115	♦♦	♦♦	♦	♦♦	♦♦	♦♦	♦♦♦	♦	♦	♦♦	♦	♦	♦	2.26	1.75	1.71	1.00	B

Table 2-2. High-Level Evaluation Summary of Initial Options (continued)

Option Information				Cost-Effectiveness			Contribution to Objectives				Implementation Complexity							Uncertainty		Relative Scores				
ID	Name	Type	Water Source	Yield - Long-term Average (TAF/year)	Total Cost ($)	Overall Cost-Effectiveness ($/AF)	Improve Dry Year Reliability	Perfect Beneficial Use	Provide Financial Benefit	Extreme Drought Conditions	Environmental Compliance Requirements	Permitting Requirements	Water Rights/Contracts	Institutional & Coordination	Land Acquisition	Public Acceptance & Support	Schedule	Costs	Yield & Reliability	Cost-Effectiveness Score	Objectives Score	Implementation Complexity Score	Uncertainty Score	Grouping
O18	Purchase Orange Vale Water Company's Water Supply Wells	GW	OTHR	0	$ 1,000,000	$ 478	2	2	1	2	2	2	3	1	2	1	2	1	2	0.99	1.75	1.86	1.50	B
O19	Allocate CVP Water to Another Agency	NS	CVP	10	$ 1,000,000	$ 40	3	3	3	2	2	3	2	1	3	2	3	1	3	2.74	2.75	2.29	2.00	A
O20	Allocate Middle Fork Project Water to Another Agency Within its Place of Use in Sacramento County	NS	MFP	7	$ 1,000,000	$ 43	1	3	3	1	3	3	3	1	3	2	3	1	3	2.72	2.00	2.57	2.00	A
O21	Allocate Water Rights to Another Agency and Offset Incremental Costs to Ratepayers	NS	APPR	17	$ 1,000,000	$ 38	2	3	3	1	2	3	3	1	3	2	3	1	3	2.75	2.25	2.43	2.00	A
O22	Integrate Groundwater and Surface Water Uses in Placer County	SW	MFP	0	$ -	$ -	2	1	1	2	2	2	1	1	1	1	1	1	1		1.50	1.29	1.00	x
O23	Coordinate Between SJWD and PCWA Water Treatment Plants to Optimize Operational Flexibility	SW	MFP	12	$ 15,000,000	$ 67	2	2	1	3	2	2	3	1	2	3	2	1	1	2.57	2.00	2.14	1.00	A
O24	Merger with Another Agency	NS	OTHR	17	$ 2,000,000	$ 106	2	3	3	2	1	1	2	1	1	2	2	1	3	2.31	2.50	1.43	2.00	A
O25	Establish Nonpotable Reuse in SJWD Service Area	RW	OTHR	3	$ 51,000,000	$ 1,989	2	1	1	3	1	2	3	1	1	3	2	1	2	0.96	1.75	1.86	1.50	C
O26	Establish Indirect Potable Reuse in SJWD Service Area	RW	OTHR	6	$ 98,600,000	$ 1,956	3	1	1	3	1	1	3	1	1	1	1	1	2	0.96	2.00	1.29	1.50	C
O27	Participate in RiverArc	SW	OTHR	1	$ 64,300,000	$ 2,376	2	2	1	3	1	1	2	1	1	2	1	2	2	0.95	2.00	1.29	2.00	C
O28	Purchase Water Supply Wells in SJWD Wholesale Area	GW	OTHR	11	$ 8,200,000	$ 141	2	3	1	2	2	2	3	1	3	1	2	1	3	2.09	2.00	2.00	2.00	B

Key: AF = acre-feet, ASR = aquifer storage and recovery, Cal Am = California American Water Company, CVP = Central Valley Project, ID = Identification, O## = Option number, PCWA = Placer County Water Agency, SJWD = San Juan Water District, TAF = thousand acre-feet, WCA = Wholesale Customer Agency
Type: SW = Surface Water, GW = Groundwater, NS = Transfer/Exchanges, RW = Recycled Water
Water Source: APPR = Pre-1914 and senior appropriative water rights, CVP = CVP Entitlement, MFP = Middle Fork Project Entitlement from Placer County Water Agency, OTHR = Other or multiple water supplies
Assessment Value score: 1 = 1, 2 = 2, 3 = 3

Notes: Grouping Designations: A = high potential, B = moderate potential, C = low potential, x = not computed because of lack of quantitative information or option not carried forward
Grey shaded options were not carried forward.
Cell shading corresponds to assessment values. Better performing metrics (e.g., lower cost-effectiveness or higher relative score) are shaded green, while lower performing metrics are shaded red. Moderate performing metrics are shaded yellow.

The last columns in Table 2-2 show the numerical scores for each option. To develop the scores for the quantitative cost-effectiveness metric, the cost per acre-foot was normalized to a standard range (1 to 3). The options with the highest cost-effectiveness (lowest cost per acre-foot) received a score of 3, while the options with the lowest cost-effectiveness (highest cost per acre-foot) received a score of 1.

All other options were assigned scores based on a linear relationship between 1 and 3. For the other qualitative criteria, the score is the average of all the assigned assessment values for that criterion.

These scores were then used to conduct a trade-off analysis to support screening of the initial options. The results from the trade-off analysis are shown in the last column in Table 2-2 (details on the initial groupings are included in Section 2.5). The trade-off analysis investigated how the options ranked across two or more criteria. It allowed for identification of options that scored well across multiple criteria and those that scored well on one metric, but not on others. The following three trade-offs were used to evaluate the options:

1. **Cost-Effectiveness and Contribution to Objectives Trade-off** – Options were ranked according to their cost-effectiveness and overall contribution to objectives scores. Options with lower cost per acre-foot and higher overall contribution to objectives scores ranked higher.

2. **Cost-Effectiveness and Implementation Complexity Trade-off** – Options were ranked according to their cost-effectiveness and implementation complexity scores. Options with lower cost per acre-foot and higher overall implementation factors (easier to implement) scores ranked higher.

3. **Contribution to Objectives and Implementation Complexity Trade-off** – Options were ranked according to their contribution to objectives and implementation complexity scores. Options with higher overall contribution to objectives and higher overall implementation factors (easier to implement) scores ranked higher.

Figures 2-2 through 2-4 present the results from these three trade-offs analyses. Each figure plots the two considered criteria on the y- and x-axes. For example, in Figure 2-2 (cost-effectiveness and contribution to objectives trade-off), the y-axis represents the cost-effectiveness and the x-axis the overall contribution to objectives score. An option plotting in the upper right corner of the figure would be more efficient and contribute better to the objectives; therefore, it would be more desirable than an option represented in the bottom left corner of the figure. Similarly for Figure 2-3 (cost-effectiveness and implementation complexity trade-off), and Figure 2-4 (contribution to objectives and implementation complexity trade-off), the upper right regions represent the more desirable ranges and the lower left regions represent the less desirable ranges.

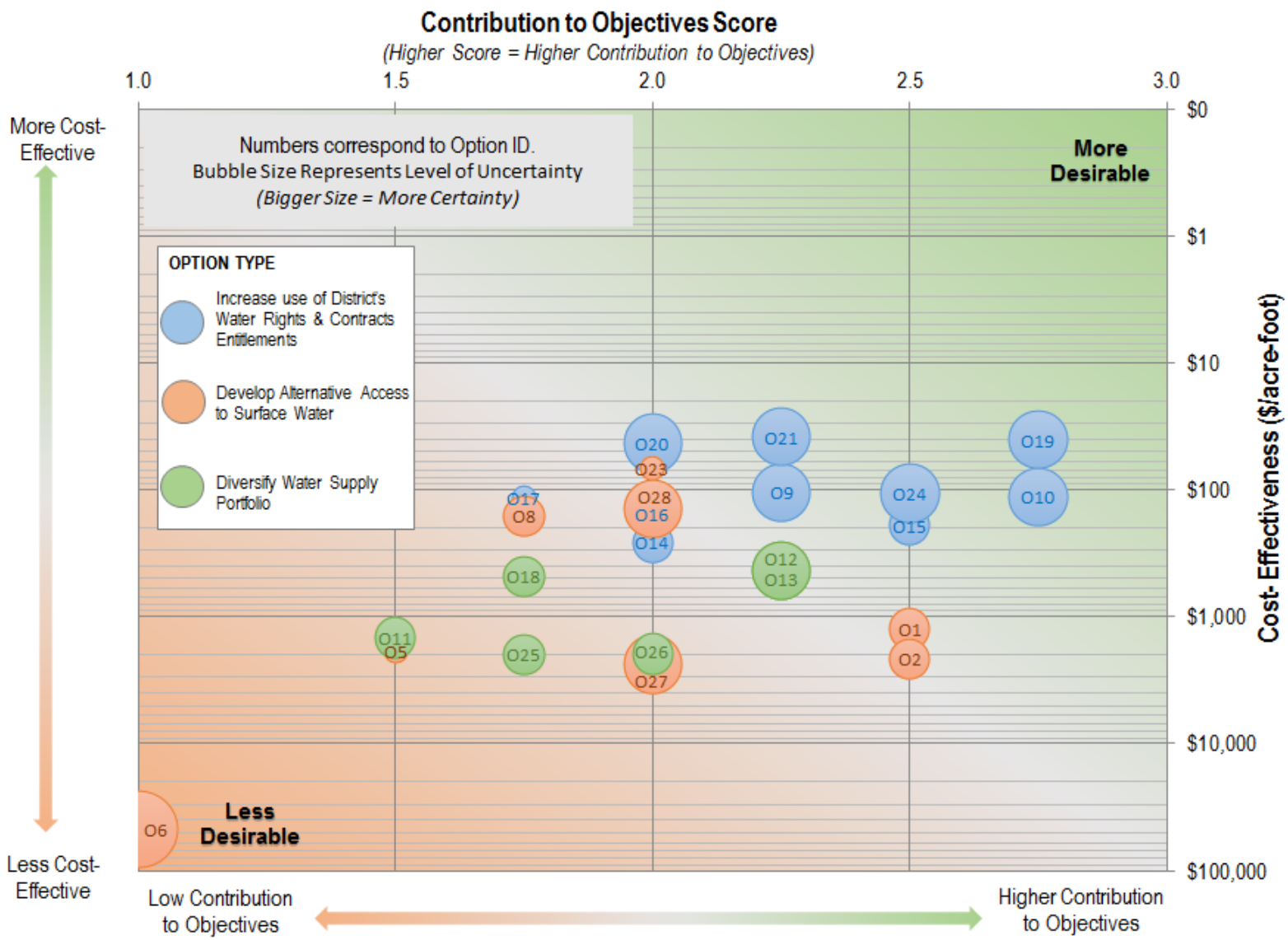


Figure 2-2. Initial Options – Cost-Effectiveness and Contribution to Objectives Trade-off Analysis

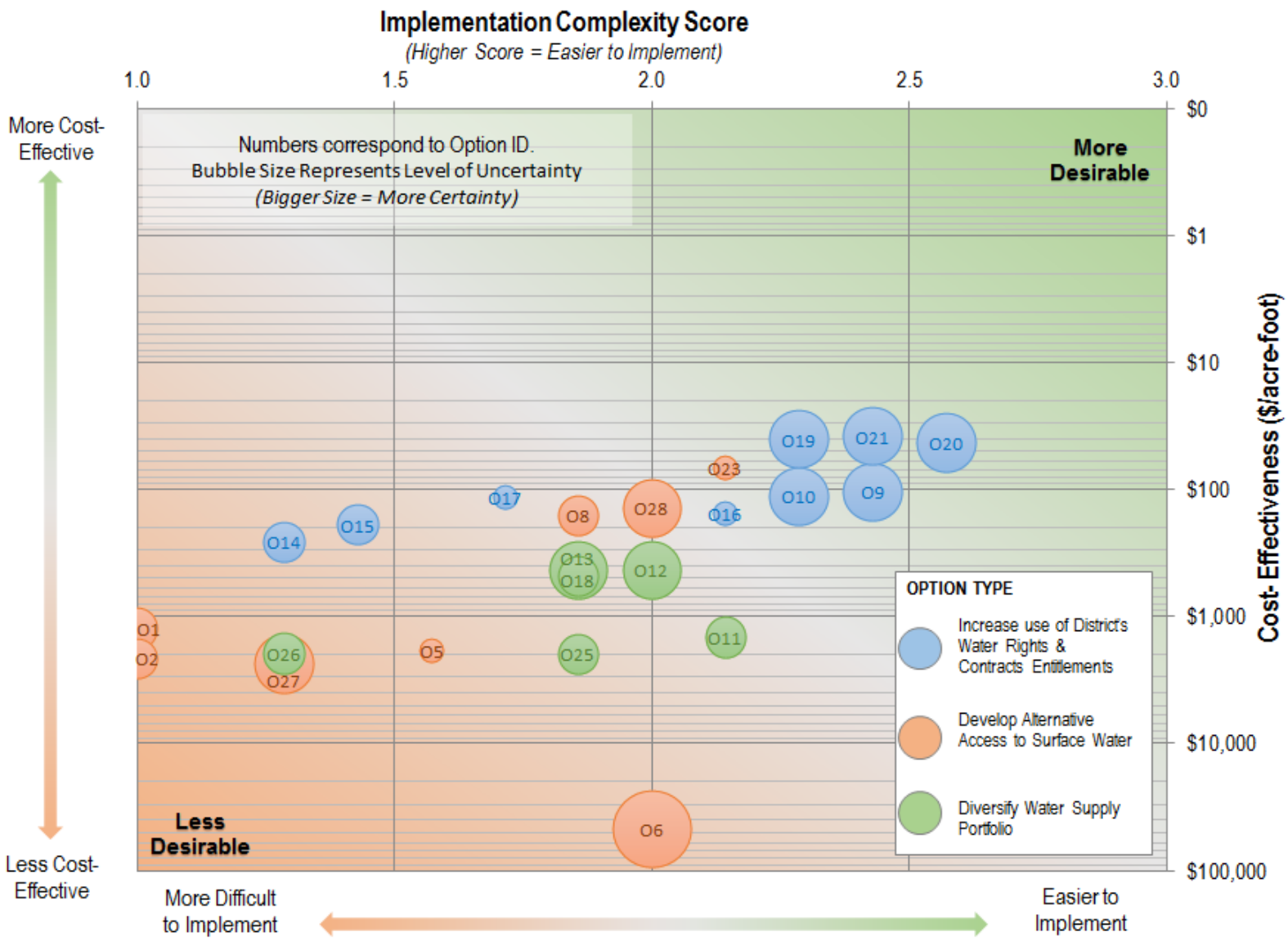


Figure 2-3. Initial Options – Cost-Effectiveness and Implementation Complexity Trade-off Analysis

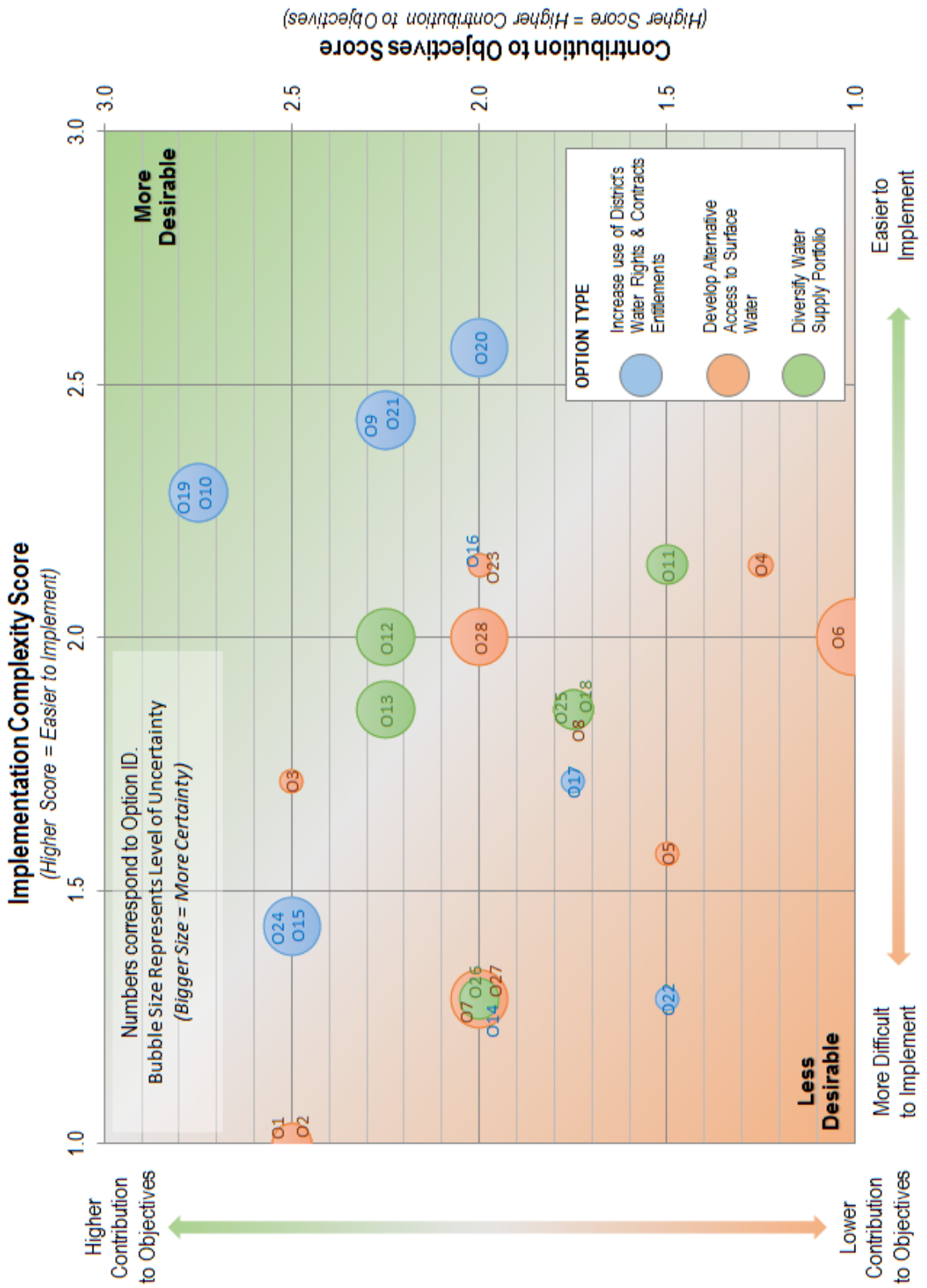


Figure 2-4. Initial Options – Contribution to Objectives and Implementation Complexity Trade-off Analysis

2.6 Grouping

The findings of the trade-off analysis were used to identify options that consistently ranked in the more desirable regions and those that consistently rank in the less desirable regions. This allowed for organizing the options into three groups:

- A – high potential
- B – moderate potential
- C – low potential

If the criteria's score was below 1.5, then it was considered low potential, whereas if the score was in the mid-2 range or above, then it was considered high potential. An option that consistently scored high across all (or most) of the trade-off scenarios was selected to be carried forward as a retained option (see Figure 2-5). This approach provided a means for identifying those options with a greater chance of achieving the District's goals and objectives for this Study in a cost-efficient manner, within a reasonable timeframe, and with higher degree of confidence.

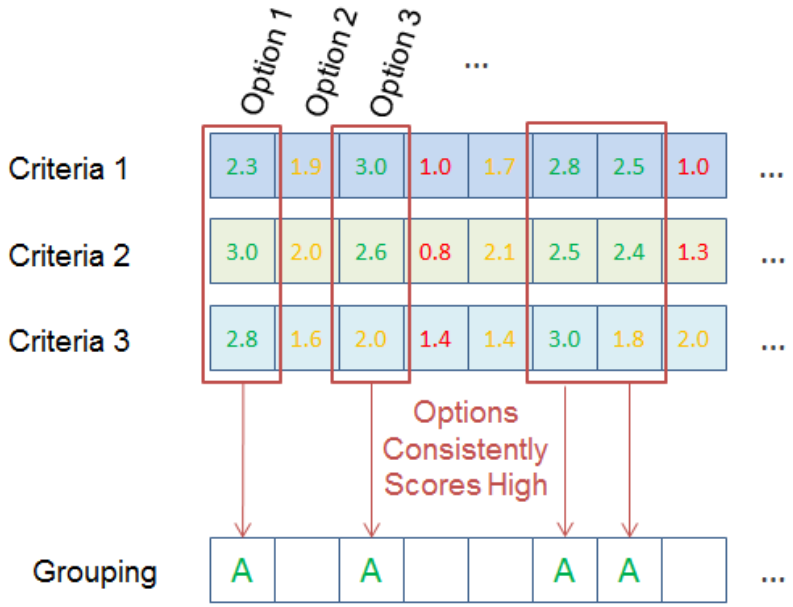


Figure 2-5. Process for Grouping Initial Options

Using this methodology, the 28 initial options were categorized into A, B, or C groupings. Table 2-2 shows the results from this initial grouping. From the initial options, 6 were in the A grouping and are being recommended to be carried forward as retained options. Of the remaining options, 7 were in the B grouping and 10 in the C grouping. Note that 5 initial options were carried forward for evaluation, which are deemed unviable, and are labeled group X.

2.7 Considerations of Yield Potential

Potential yield of these initial options were considered qualitatively as part of the contribution to the objectives score. However, to ensure that options with high yield potential, and moderate potential (group), are not prematurely eliminated from further analysis, additional analysis is conducted. Figure 2-6 shows the trade-off between yield and implementation complexity score. In this figure, the options are color coded to reflect group A, B, and C designation.

The figure shows 4 additional group B options with relatively high yields (5 to 10 TAF per year) that are clustered around an implementation complexity score of 2 (i.e., moderate complexity overall). These 4 options are, therefore, recommended also for further evaluation.

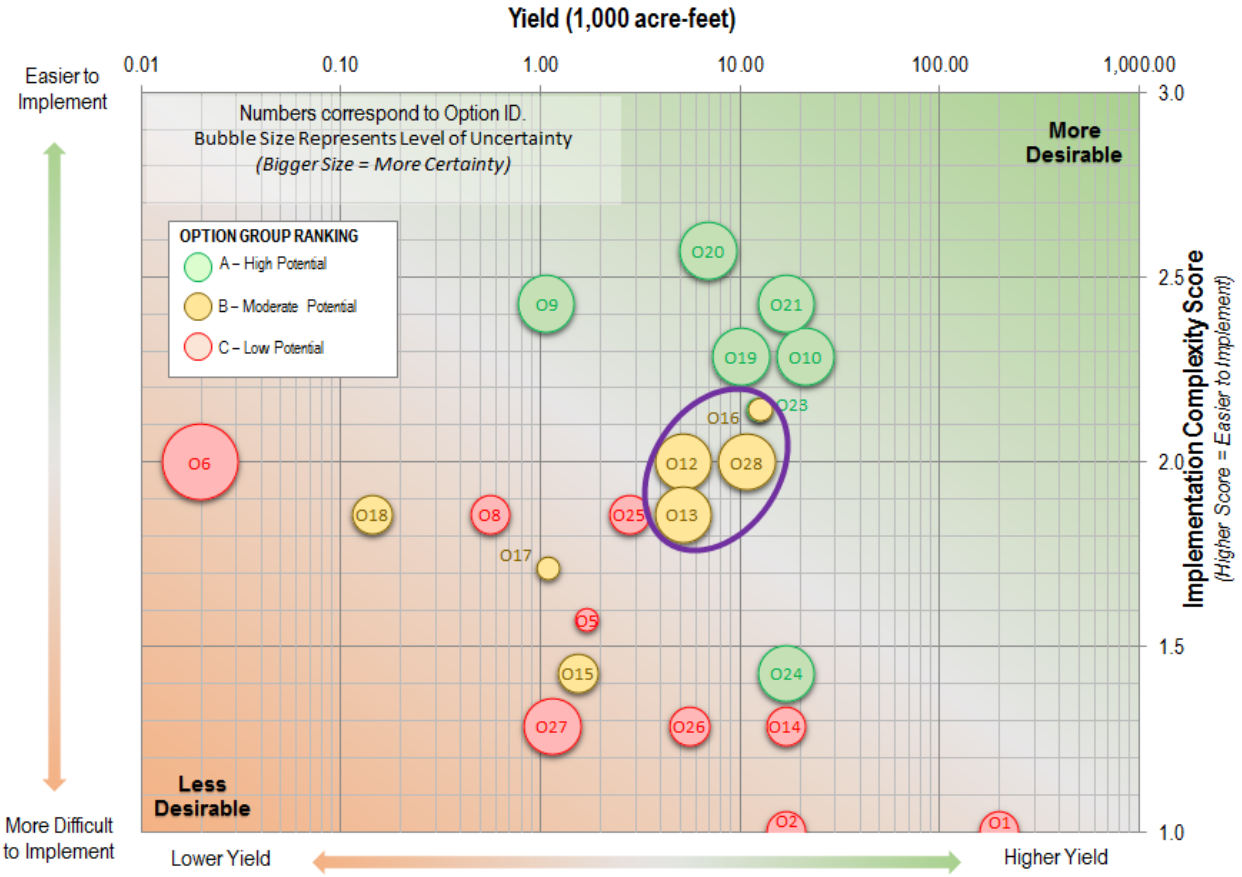


Figure 2-6. Initial Options – Yield and Implementation Complexity Trade-off Analysis

2.8 List of Retained Water Management Options

As discussed above, of the 28 initial options, 7 ranked in the high potential grouping (group A). In addition, 4 more options that are ranked in the moderate potential grouping (group B) are also retained because of their relatively high yield potential and moderate implementation complexity. These ten options (Table 2-3) are recommended for further evaluation as retained options.

The results of this initial screening analysis will be discussed with the District's WSR and Board to solicit feedback and direction. Input received will provide guidance to finalize the screening of initial options.

Table 2-3. Draft Recommendations for Retained Options

Retained Options for Further Evaluation
O9: In-Lieu Banking Program Within SJWD Wholesale Area
O10: In-Lieu Banking Program With An Agency Other than WCAs
O12: Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area
O13: Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline
O16: Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use
O19: Allocate CVP Water to Another Agency
O20: Allocate Middle Fork Project Water to Another Agency Within its Place of Use in Sacramento County
O21: Allocate Water Rights to Another Agency and Offset Incremental Costs to Ratepayers
O23: Coordinate Between SJWD and PCWA Water Treatment Plants to Optimize Operational Flexibility
O24: Merger with Another Agency
O28: Purchase Water Supply Wells in SJWD Wholesale Area

Key: CVP = Central Valley Project, O## = Option number, PCWA = Placer County Water Agency, SJWD = San Juan Water District, WCA = Wholesale Customer Agency

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3.0 Next Steps

Based on the initial screening described in Section 2, the retained options (i.e., options falling into group A, subject to District Board and WSR approval) will be evaluated in more detail as refined options. TM 5 will document the evaluation and prioritization of the refined options to be conducted under Study Task 5.

3.1 Evaluation of Refined Options

Evaluation of the refined options will include the following activities:

- Additional analysis to verify options and develop more detailed descriptions regarding operations, availability of water supplies, and infrastructure needs to allow for a more refined operations analysis to better estimate option yield and potential benefits
- Assessment of the potential to enhance performance of options through integration with other options
- Refinement of information on option location and site-specific information to allow for a more thorough assessment of implementation requirements (e.g., environmental and permitting requirements)
- Conceptual engineering and cost estimates for structural features

3.2 Scoring of Refined Options

The scoring of the refined options will use a similar approach to the screening of initial options. The four evaluation criteria and associated metrics described in Section 3 will remain applicable to provide a consistent framework for evaluation, comparison, and prioritization of the options.

3.3 Priortization of Refined Options

In addition to the trade-offs described in Section 2, a composite weighted score of all four of the evaluation criteria will also be used to aid in the prioritization of the refined options relative to one another. The weights for each of the criteria and metrics will be determined using input from the District's WSR and Board on the relative importance of the four criteria.

In addition, a sensitivity analysis of the assigned weights will be performed to identify any potential effects that varying weights may have on the prioritized list of refined options.

This analysis will result in a prioritized list of refined options available to the District to implement to improve its water supply reliability and management as funds become available. A detailed scope of work for the subsequent feasibility study will be developed for these prioritized options under Study Task 6 and documented in TM 6.

Technical Memorandum 4

Attachment A – Water Management Options Evaluation Summaries

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List of Abbreviations and Acronyms

AF	acre-feet
ASR	aquifer storage and recovery
Cal Am	California American Water
CHWD	Citrus Heights Water District
CM	construction management
CPI	U.S. Department of Labor, Bureau of Statistics, Consumer Price Index
CVP	Central Valley Project
CWD	Carmichael Water District
District or SJWD	San Juan Water District
EID	El Dorado Irrigation District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FOWD	Fair Oaks Water District
gpm	gallons per minute
GSWC	Golden State Water Company
HP	horsepower
IPR	indirect potable reuse
IS	Initial Study
MFP	Middle Fork Project
MGD	million gallons per day
MND	Mitigated Negative Declaration
N/A	not applicable
ND	Negative Declaration
NEPA	National Environmental Policy Act
O##	Option number
O&M	operations and maintenance

OTHR	other/multiple sources
OVWC	Orange Vale Water Company
PCE	tetrachloroethylene
PCWA	Placer County Water Agency
PG&E	Pacific Gas and Electric Company
POU	place of use
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
RLECWD	Rio Linda/Elverta Community Water District
ROW	right of way
RUSD	Rescue Union School District
RWQCB	Regional Water Quality Control Board
SCWA	Sacramento County Water Agency
SGA	Sacramento Groundwater Authority
SMUD	Sacramento Municipal Utility District
SSWD	Sacramento Suburban Water District
SW	surface water
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
WCA	wholesale customer agency
WTP	water treatment plant
WWTP	wastewater treatment plant

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O1**

Project Name: **Large Surface Water Storage on North Fork American River** Type: **SW**

Project Description:

Auburn Dam has been extensively studied by the federal government since the authorization of the Auburn-Folsom South Unit in 1965. Through these studies, the federal government has decided that it will not build an instream reservoir at this location. As a result, this option would need to be led through local initiatives. Since this option would be beyond what the District would move forward alone, the District would partner with other agencies to build this 2.5 million acre-foot reservoir on the American River near Auburn.

-Wet year storage: Would capture flows in the reservoir during wet years to maximize use of existing supplies if the District's successfully changed the point of diversion and acquired additional water rights for storage, and there would be potential changes in point of delivery for contract water. Otherwise, there would be no benefit in using existing supplies.

-Dry year augmentation: Would release stored water during dry years to supplement currently available supplies.

NOTE: A similar project evaluation could be developed for Alder Reservoir on a tributary of the South Fork American River. This project has received federal authorization for a feasibility study.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	200	N/A	*Only a portion of the yield would be attributed to the District. The District's exact amount was not determined. Source: Reclamation 2013*
Water Supply Source	Other/Multiple Sources	OTHR	*In addition to either a new water right or modifying the District's appropriative rights, the reservoir would store and release water for other partners. Partners' water sources are unknown.*
Total Cost ($)	$ 6,861,420,000	N/A	*Estimate of $6 - 10 Billion was in 2007 dollars for the entire project, excluding O&M (Reclamation, 2013). Increased to 2016 dollars using the Bureau of Labor Statistics' CPI Index. The District's portion of the total cost was not determined.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 1,241	N/A	*Annualized, 3.5% discount rate over 100-year project life.*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Would increase ability to store water when available for later use in dry conditions*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Assuming the District could modify the point of diversion of its appropriative rights or point of delivery for contract water, this would increase average annual use of the District's existing water supplies.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Extremely high upfront costs for ratepayers. Some improved ability for District to engage water transfers.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	💧💧💧	*Would increase storage to provide supply during extreme drought conditions.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*EIR for potential construction and/or operational impacts associated with building a new in-stream reservoir.*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	💧	*Complex, as it would require building a new in-stream reservoir.*
Water Rights / Contracts	High: New Water Right	💧	*Would require a new water right for storage and new rights for diversions if District could not justify the change in existing water rights. For contract deliveries, it would require the original water right holders to obtain additional water rights to divert and/or store, and consequently a change in point of delivery for the District.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Partnerships would be imperative to build new in-stream reservoir both for construction and operation of the reservoir.*

Land Acquisition	High: No Willing Seller Identified	💧	*Large area of land would need to be purchased or leased from the federal government; much of the site is owned by Reclamation.*
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	*Low support for building a large reservoir. Auburn Dam has encountered significant technical and political challenges since its authorization and has not been constructed.*
Schedule	Greater than 3 years to implement	💧	*Would take 20+ years to design and construct.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*Based on Reclamation estimates; however these are outdated, and there is high uncertainty for dam costs.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Based on Auburn Dam estimates (Reclamation 2013).*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

Reclamation. 2013 (edited). Auburn Dam, Auburn Folsom Unit American River Division Central Valley Project.

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O2**

Project Name: **Small Off-Stream Surface Water Storage from North Fork American River** Type: **SW**

Project Description:

Option would include constructing an approximately 400,000 AF reservoir off of the North Fork American River for wet year storage. No specific location has been evaluated at this stage. Various reservoir sizes are possible, but were not evaluated. It is anticipated that the overall cost-effectiveness and other metrics would be scalable and therefore not significantly change despite different reservoir size variations.

-Wet year storage: Would capture flows in the reservoir during wet years to maximize use of existing supplies if the District's successfully changed the point of diversion and acquired additional water rights for storage, and there would be potential changes in point of delivery for contract water. Otherwise, there would be no benefit in using existing supplies.

-Dry year augmentation: Would release stored water during dry years to supplement currently available supplies.

NOTE: A similar project evaluation could be developed for Clay Station Reservoir or storage off Knickerbocker Creek.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	17.1	N/A	*Based on 2030 demands, the District has 21,377 AF/year of currently unused surface water rights/contract entitlements during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF).*
Water Supply Source	Other/Multiple Sources	OTHR	*New water right or modified District's appropriative rights.*
Total Cost ($)	$ 1,011,500,000	N/A	*Based on an off-stream reservoir project, excludes O&M (Los Vaqueros Reservoir Expansion, Alternative 3 (Reclamation 2008)). Unit costs escalated to 2016 value using the Bureau of Labor Statistics' CPI Index.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 2,139	N/A	*Annualized, 3.5% discount rate over 100-year project life*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	♦♦♦	*Large annual acre-foot increase would occur in dry year supply.*
Perfect Beneficial Use of Existing Supplies	High Potential	♦♦♦	*Assuming the District could modify its appropriative rights, this would increase average annual use of the District's water supply and treatment capacity (as compared to usage).*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	♦	*Extremely high upfront costs for ratepayer. Some improved ability for District to engage in water transfers.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	♦♦♦	*Would increase storage to provide supply during extreme drought conditions.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	♦	*EIR for potential construction and/or operational impacts associated with building a new in-stream reservoir.*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	♦	*Complex, as it would require building a new in-stream reservoir.*
Water Rights / Contracts	High: New Water Right	♦	*Would require a new water right for storage and new rights for diversions if District could not justify the change in existing water rights. For contract deliveries, it would require the original water right holders to obtain additional water rights to divert and/or store, and consequently a change in point of delivery for District.*

Institutional & Coordination	High: Partnerships Needed, Likely New Agreement		*Partnerships would be imperative to build new in-stream reservoir both for construction and operation of the reservoir.*
Land Acquisition	High: No Willing Seller Identified		*Large area of land would need to be purchased; much of the site is owned by PCWA.*
Public Acceptance & Support	Low: Low Public Acceptance and Support		*Low support for building a large reservoir.*
Schedule	Greater than 3 years to implement		*Would take multiple years to design and construct.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*While costs were based on a similar off-stream reservoir project (Los Vaqueros Reservoir Expansion (Reclamation 2008)), no specific site was chosen and evaluated.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term		*Based on 2030 demands provided in the Urban Water Management Plan (2010).*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

Reclamation. 2008. Draft Appendix C, Engineering Designs and Costs, Los Vaqueros Reservoir Expansion Investigation, California Draft Feasibility Report.
2010 Urban Water Management Plan for SJWD, CHWD, OVWC, City of Folsom, and FOWD

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O3**

Project Name: **Purchase Reservoir Space on American River above Folsom Dam for Storage**

Type: **SW**

OPTION NOT CARRIED FORWARD

Project Description:

Option would include either purchasing capacity in an existing upstream hydropower reservoir, or entering into an agreement with the current owners for use of capacity in the reservoir. The purchase or or use of storage space would provide reservoir capacity for District use.

-Wet year storage: Would capture flows in reservoir during wet years to maximize use of existing supplies and/or additional contract amount.

-Dry year augmentation: Would release stored water during dry years to supplement currently available supplies.

Note: During this initial evaluation, it was determined that this option would not be carried forward. There are currently no hydropower reservoirs on the upper American River in the process of FERC license renewal. Reservoirs considered included those owned/operated by PCWA; Rock Creek Hydro, LLC; El Dorado Irrigation District; SMUD; and PG&E. The next hydropower reservoir to update its FERC license is not until approximately 2030. Additional exploration of such a storage opportunity may affect established FERC license conditions, resulting in the District possibly needing to compensate for the potential power generation revenue loss which would likely be a very challenging mitigation action.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)		N/A	*Not quantified, as there are currently no hydropower reservoirs in which the District could purchase capacity or utilize capacity (via an agreement), and none will be undergoing FERC relicensing during the next decade.*
Water Supply Source	Other/Multiple Sources	OTHR	*Unknown, as a specific reservoir was not evaluated.*
Total Cost ($)		N/A	*Not quantified, as there are currently no hydropower reservoirs in which the District could purchase capacity or utilize capacity (via an agreement), and none will be undergoing FERC relicensing during the next decade.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)		N/A	
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Would increase ability to store water when available for use when surface water supplies are low.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Assuming the District could modify the point of diversion of its appropriative rights and acquire a new water right for storage, this would increase average annual use of the District's existing water supplies.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Would increase the ability to facilitate a water transfer; however, the high cost is not likely to be compatible with currently available transfer markets.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	💧💧💧	*Would increase storage to provide supply during extreme drought conditions.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Purchasing a portion of a reservoir (with no new construction) may require IS/MND.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Moderate, as it would require purchasing a portion of a reservoir (with no new construction).*
Water Rights / Contracts	High: New Water Right	💧	*Current point of diversion for District's water rights is Folsom Dam. This option would require the District to either modify its water rights to allow for upstream diversion and storage, or enter into exchange and operation agreements with the owner to operate its facility for the District's benefit.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would need a new partnership with the reservoir owner.*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*N/A*

Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support		*Moderate support, as option would likely be costly and yield is uncertain.*
Schedule	Greater than 3 years to implement		*Would be over a decade until another hydropower reservoir needs to renew its FERC license.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*None available.*
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term		*None available.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O4**

Project Name: **Upper Watershed Restoration** Type: **SW**

OPTION NOT CARRIED FORWARD

Project Description:

Option would include forest management activities in the Sierra Nevada such as removal of excess brush and trees. This could lead to an increase in the snowpack by creating the right-sized gaps in the canopy so that snow can fall to the ground but still receive enough shade to be protected from direct exposure to sunlight and higher winds that would otherwise cause the snowpack to melt earlier. A larger snowpack along with later snowmelt could increase the available water supplies for the District in addition to providing wider environmental and public benefits. Another benefit would be lower potential for high-intensity wildfires which could otherwise dramatically increase runoff and sediment that degrades water quality and reduces reservoir storage capacity.

-Wet year storage: None.

-Dry year augmentation: Would have potential for larger snowpack and therefore more water supplies in the watershed to which the District could have access.

Note: While this option could provide widespread public and environmental benefits, it is unlikely that any increase in snowpack, and thereby potentially water supply reliability, could be quantified or directly attributed to the District.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)		N/A	*Research did not provide any conclusive results for estimating yield for the proposed forest management activities.*
Water Supply Source	Other/Multiple Sources	OTHR	*Would be indirect, through natural hydrologic processes.*
Total Cost ($)		N/A	*No specific amount was been determined.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)		N/A	
Contribution to Objectives			
Improve Dry Year Reliability	Low Potential	1	*Given the large uncertainty associated with this alternative, this alternative would be unlikely to improve dry year reliability.*
Perfect Beneficial Use of Existing Supplies	Low Potential	1	*Would not increase use of existing supplies.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	1	*Would be unlikely to include new water transfers.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	2	*The extent of improved conditions during extreme drought would depend on the effectiveness of this proposed strategy.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	2	*Removing excess brush and tress may require IS/MND.*
Permitting Requirements	Moderate: Some State and/or Local Permits	2	*Removing excess brush and trees may require State and/or local permits.*
Water Rights / Contracts	Low: No Change	3	*Would not change water rights.*
Institutional & Coordination	Moderate: Partnerships Needed, Likely Similar to Existing Arrangement	2	*Would require coordination with the management authority and implementation agencies because the District would likely not be the implementation agency.*
Land Acquisition	Low: Existing ROW / Not Applicable	3	*No land acquisition would be required.*
Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	2	*Would provide greater public benefits, but District-specific benefits cannot be quantified.*
Schedule	Greater than 3 years to implement	1	*Implementation of this option would require long-term efforts currently being led by the State and conservative groups.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	1	*Not calculated.*
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term	1	*Not calculated.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

Reclamation. 2013 (edited). Measurement of snow interception and canopy effects on snow accumulation and melt in a mountainous maritime climate, Oregon, United States

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O5**

Project Name: **Folsom Dam Raise** Type: **SW**

Project Description:

Option would include the District partnering in the Folsom Dam raise. As this is a federal facility, Reclamation would be the implementation agency under Congressional authorization. If the authority is for increasing water supply, it would be for the CVP, which would include the District's contract delivery. It would not increase the current commitment from Reclamation to honor the District's water rights.

-Wet year storage: None, as the increased storage would belong to Reclamation.

-Dry year augmentation: Could improve the District's dry year reliability because the increased storage may delay the State's curtailment actions and improve contract delivery.

Note: The Folsom Dam Raise Project was authorized by the Energy and Water Development and Appropriations Act of 2004 (Public Law 108-137) to improve flood protection by increasing the reservoir storage capacity at the Folsom Facility. However, the 3.5-foot raise is not authorized for water supply. This raise is expected to be completed by 2021. This option would be in addition to the existing authorization.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	1.7	N/A	*Based on 2030 demands, the District has 21,377 AF/year of currently unused surface water rights/contract entitlements during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF). When water supply authorization is secured, a 3.5-foot raise would increase storage by approximately 46,200 AF, which would benefit the entire CVP and reduce the potential for low storage to affect water right deliveries. However, the potential yield would be uncertain, and the realized benefit for the District would likely be limited. Assume the District would only receive 10%.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 87,035,000	N/A	*First cost of $74 Million (Oct 2006 price level) for a 3.5 foot raise from its existing elevation (USACE 2007). Converted to 2016 dollars using the Bureau of Labor Statistics' CPI Index. As the District would need an additional raise (in addition to the Folsom Dam Raise Project's 3.5 foot raise), the cost would be more expensive due to impacts on property and the need to modify the dam, dikes, tainter gate, berms, etc. This additional cost was not calculated. With authorization, Reclamation may pay for the project and recover the costs using the CVP repayment process.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 1,840	N/A	*Annualized, 3.5% discount rate over 100-year project life*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would increase the ability for Reclamation to provide CVP deliveries to all contractors.*
Perfect Beneficial Use of Existing Supplies	Low Potential	💧	*Would not increase demands to drive additional diversions.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Extremely high upfront costs for users. Some improved ability for District to engaged in water transfers.*

Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought		*Would provide additional storage capacity in Folsom Lake which could reduce the occurrence of extreme drought conditions (i.e., the District being unable to take water from the lake).*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR		*EIR for potential construction and/or operational impacts associated with modifying a dam.*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits		*Complex permitting for modifying a dam.*
Water Rights / Contracts	Low: No Change		*Reclamation has existing water rights for the raise, which is unlikely to result in additional contracts or changes in contract amount.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement		*Would need to partner with Reclamation as this would be a federally-led project.*
Land Acquisition	Low: Existing ROW / Not Applicable		*No additional land would be required.*
Public Acceptance & Support	Low: Low Public Acceptance and Support		*A 3.5-foot dam raise is already being explored. An additional raise or further change to the existing authorization may have limited support.*
Schedule	Greater than 3 years to implement		*10+ year timeframe expected.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*Based on American River Common Features project estimates for the authorized 3.5-foot dam raise.*
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term		*Potential District yield not quantified.*

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Relative Ranking

References:

USACE. 2007. Engineering Documentation Report. Folsom Dam Raise Project. American River Watershed Project, California. March.

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O6**

Project Name: **Surface Water Closed Storage Tank in SJWD Retail or Wholesale Area** Type: **SW**

Project Description: Option would build multiple 8 million gallon storage tanks in the SJWD Retail or Wholesale Area to capture wet year flows. For this analysis, a single 8 million gallon storage tank was used. Tanks were assumed to be in-ground, lined, covered basins storing untreated surface water. Pipeline would also be required to connect tanks to the water treatment facility. Multiple tanks would be needed to contribute substantial volumes of water. The proposed tank would need to store raw water prior to treatment because treated water cannot be stored for long periods of time (e.g., several years) without risk of formation of disinfection byproducts and loss of chlorine residual.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	0.0196	N/A	*Assumed one tank. Assumed tank would fill every Water Forum wet/average year. Assumed Water Forum wet/average years were 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF).*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements*
Total Cost ($)	$ 17,015,000	N/A	*Cost estimate assumptions for a rectangular, in-ground lined basin with floating cover: - 8 million gallon storage basin: $5.2 Million - 3 MGD, 150 HP pump station: $0.825 Million - 10,000 feet of 18" transmission pipeline: $2.13 Million - 2.2 acre land purchase for basin: $1.54 Million - Plus 30% contingency, 30% engineering, CM & Admin, 3% environmental documentation, 2% legal*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 47,102	N/A	*Annualized, 3.5% discount rate over 30-year project life.*
Contribution to Objectives			
Improve Dry Year Reliability	Low Potential	1	*Limited yield given small tank size. Would require many tanks.*
Perfect Beneficial Use of Existing Supplies	Low Potential	1	*Would not increase wet year beneficial use, but would allow redirected beneficial use in dry years.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	1	*Would minimally reduce or avoid the need for dry year purchases from another agency (e.g., groundwater from SSWD).*
Extreme Drought Conditions	Limited Potential to Improve Conditions During an Extreme Drought	1	*Would slightly improve, but would require a large number of tanks and land purchases.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	2	*While tank installation typically would not pose major environmental compliance issues, the site(s) are unknown and environmental compliance requirements would be uncertain.*
Permitting Requirements	Moderate: Some State and/or Local Permits	2	*Tank installation may require some local permits.*
Water Rights / Contracts	Low: No Change	3	*Would use existing water rights.*
Institutional & Coordination	Low: No Partnerships Needed	3	*No external coordination would be needed.*
Land Acquisition	High: No Willing Seller Identified	1	*Each tank would require purchase of 2+ acres within the service area.*
Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	2	*Potential issues regarding construction in multiple locations within the service area.*
Schedule	Greater than 3 years to implement	1	*Land acquisition plus multiple sites/tanks could increase project duration.*
Uncertainty			
Costs	Moderate: Cost Information, No Engineering Details	2	*Based on similar costs for tanks in same area.*
Yield & Reliability	High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term	3	

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O7**

Project Name: **Above Ground Surface Water Storage in SJWD Retail or Wholesale Area** Type: **SW**

OPTION NOT CARRIED FORWARD

Project Description: Option would build a 20,000 AF above ground open basin to capture wet year flows in the SJWD Retail or Wholesale Area for use during dry years.

-Wet year storage: Would capture flows in reservoir during wet years to maximize use of contract supplies.

-Dry year augmentation: Would release stored water during dry years to supplement available supplies.

Note: The SJWD service area was evaluated using a parcel-based geospatial analysis for suitable sites for the proposed 20,000 AF reservoir. The only parcel identified that would be large enough for this facility would be in the American River Parkway, which was not considered a feasible location. Combining parcels was also evaluated, however, first estimates show land acquisition costs upwards of $140 Million. This estimate was based on a sum of 2013 county assessor total values of a representative selection of parcels sufficient to accommodate construction.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)		N/A	*Unable to find land parcel(s) for reservoir. No yield calculated.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)		N/A	*First estimates indicated land acquisition costs upwards of $140 Million based on a sum of 2013 county assessor total values of a representative selection of parcels sufficient to accommodate construction.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)		N/A	
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Would use stored water during dry years when adequate surface water is unavailable to meet demands.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Could increase wet year use by storing supplies during wet years.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Would avoid or reduce dry year cost to purchase water when it would have otherwise been required. Likely high upfront costs to purchase land if it was available.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would provide an additional location for the District to get water when access to Folsom Lake supplies are limited.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*EIR for potential construction impacts associated with building above ground storage.*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	💧	*Complex permitting for building above ground storage.*
Water Rights / Contracts	Low: No Change	💧💧💧	*No change.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Unknown as a site could not be identified.*
Land Acquisition	High: No Willing Seller Identified	💧	*No seller(s) identified, and unlikely to find any within the District as the land is mostly residential and commercial parcels of high value.*
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	*Would require large purchase of land.*
Schedule	Greater than 3 years to implement	💧	*Long timeframe, as the land not not been acquired or identified.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*Not calculated.*
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term	💧	*Not calculated.*

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O8**

Project Name: **Above Ground Surface Water Storage Basin in El Dorado Irrigation District Service Area** Type: **SW**

Project Description:

Option would purchase the 700 AF Bass Lake for an above ground basin to store wet year flows for use during dry years. This would require a water exchange agreement with EID.

Bass Lake, along with 58 acres of surrounding land, was purchased by Rescue Union School District (RUSD) in 2015 from El Dorado Irrigation District (EID) to develop a 20-acre environmental science and technology site. The remaining land is planned to be parkland that would be shared with the El Dorado Hills Community Services District. Since purchasing the property from EID, the RUSD has decided to build elsewhere. The property is located off of Bass Lake Road, south of Green Valley Road in El Dorado Hills.

EID sold the lake as it was deemed surplus property. The lake originally consisted of potable water, direct precipitation, and runoff from a local drainage basin. It was last used by EID as an emergency source to supplement recycled water demands when there were insufficient recycled water supplies. The lake has not received supplemental potable water for over five years.

-Wet year storage: Would capture flows in reservoir during wet years to maximize use of surface water supplies.

-Dry year augmentation: Would release stored water during dry years to supplement available supplies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	0.56	N/A	*Based on 2030 demands, the District has 21,377 AF/year of currently unused surface water rights/contract entitlements during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF). Assumed 700 AF of this water, when available, would go to Bass Lake for storage.*
Water Supply Source	Pre-1914 and Senior Appropriative Water Right	APPR	
Total Cost ($)	$ 1,300,000	N/A	*Assumed:* *Property: $300,000 (price paid by RUSD in 2015)* *Legal and Other Administrative Fees: $1,000,000* *Infrastructure: None*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 161	N/A	*Annualized, 3.5% discount rate over 30-year project life. Additional CVP annual cost of $35/AF (SJWD and SSWD 2014) to use CVP water to replace the water supply currently going to the WCAs. Would likely require an additional $/AF charge to use EID infrastructure.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would use stored water during dry years when adequate surface water is unavailable to meet demands.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Assumed the District could modify its appropriative rights, and could increase wet year use by storing water during wet years.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Would avoid or reduce the dry year cost to purchase water when it would have otherwise been required. Likely high upfront costs to develop the storage basin and enter into an agreement with EID.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would provide an additional location for the District to get water when access to Folsom Lake supplies are limited.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Purchasing a reservoir (with no new construction) may require IS/MND.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Moderate, as it would require purchasing a reservoir (with no construction).*

Water Rights / Contracts	High: New Water Right	💧	*Would require a new water right to divert water for storage. Resulting water supply impacts could be alleviated by establishing the Area of Origin of the District's appropriative water right.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would need agreement with EID.*
Land Acquisition	Moderate: Willing Seller Identified	💧💧	*The land would be purchased from RUSD.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	
Schedule	1-2 years to implement	💧💧	*Moderate timeframe to purchase and enter into agreements.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*General estimate.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Based on 2030 demands provided in the Urban Water Management Plan (2010).*

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Relative Ranking

References:

Sacramento Bee. 2014. EID's Bass Lake Property Sought for School Focusing on Environment, Technology. June 3.
Village Life. 2015. School District to Purchase Second School Site Property. September 14.
El Dorado Irrigation District. 2011. Water Resources and Service Reliability Report.
El Dorado Irrigation District. 2010 Urban Water Management Plan.

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O9**

Project Name: **In-Lieu Banking Program Within SJWD Wholesale Area** Type: **GW**

Project Description: Option would construct new and/or expand existing infrastructure to (1) supply existing groundwater users in the SJWD Wholesale Area with surface water in wetter years for use in-lieu of those users pumping groundwater, such that (2) in dry years, those users would expand their use of stored groundwater, thus leaving surface water for the District to use or make available for purchase by others. Currently, groundwater is pumped during wetter years for well maintenance purposes and those groundwater users have access to surface water supplies. This option would analyze the minimum amount of groundwater pumping needed for well maintenance purposes, such that surface water supplies would be used in-lieu of the current amount being pumped. Note that while stored groundwater is affected by the basin's cone of depression, this option would both improve overall basin conditions and the ability of the District to extract groundwater from the WCAs when needed.

-Wet year storage: Would maximize use of contract surface water to preserve groundwater supply in wet years when surface water is abundant.

-Dry year augmentation: Additional surface water would be available, as groundwater users would use stored groundwater instead of surface water.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	1.1	N/A	*Wet/average year groundwater production for well maintenance purposes on average (AF/year): CHWD: 390, FOWD: 840, OVWC: 0. Assumed that CHWD and FOWD would lower maintenance-required pumping to several hours per month, equalling 80 AF/year per agency. Groundwater production would be 1,070 AF/year.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 100,000	N/A	*Assumed: - Cost to enter into contracts/agreements: $100,000 - Infrastructure: None, existing access to surface water supplies*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 105	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed $100/AF (for pumping, energy, and O&M costs) to produce groundwater which is the price wholesalers would then pay the District to take surface water. (Note that the $/AF cost for using wells would increase as usage decreases. This is not reflected in the $/AF cost at this stage.)*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*A small volume of additional surface water would be available since groundwater users would use stored groundwater instead of surface water in dry years.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Increased use of contract surface water to preserve groundwater supply in wet years (when surface water is abundant) would occur but be limited, so dry year allocations could be slightly increased.*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	💧💧💧	*Reduced groundwater extraction during wet years would increase groundwater recharge and provide opportunities for SJWD water transfers of similar amount.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would improve groundwater conditions by allowing basin to recharge during wet years.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	
Water Rights / Contracts	Low: No Change	💧💧💧	*No change.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	🔴	*Agreements would be needed with WCAs*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*Assumed minor infrastructure changes within ROW.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	

Schedule	Less than 1 year to implement	💧💧💧	
Uncertainty			
Costs	Moderate: Cost Information, No Engineering Details	💧💧	
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O10**

Project Name: **In-Lieu Banking Program With an Agency Other than the WCAs** Type: **GW**

Project Description: Option would construct new and/or expand existing infrastructure to supply surface water to existing groundwater users outside the SJWD Wholesale Area (but within the Sacramento Groundwater Authority (SGA) area that do not currently have surface water sources) in wetter years for use in-lieu of groundwater use.

-Wet year storage: Would maximize use of contract surface water to preserve groundwater supply in wet years when surface water is abundant.

-Dry year augmentation: Would make additional surface water available as groundwater users would use stored groundwater instead of surface water.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	21.4	N/A	*Wet/average years (2006, 2011) groundwater production average of 53.9 TAF/yr (SSWD = 24.2, RLECWD = 3.0, SCWA = 5.0, GSWC = 1.2, Cal Am = 16.5, CWD = 2.45) Based on 2030 demands, the District has 21,377 AF/year of currently unused surface water rights/contract entitlements during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF).*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 5,200,000	N/A	*Assumed:* *- Cost to enter into contracts/agreements: $200,000* *- Infrastructure: $5 Million (conservative representative estimate which would vary by agency)*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$113.23	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed $100/AF (for pumping, energy, and O&M costs) to produce groundwater which is the price wholesalers would then pay the District to take surface water.*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Additional surface water would be available since groundwater users will use stored groundwater instead of surface water in dry years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would maximize use of contract surface water to preserve groundwater supply in wet years when surface water is abundant, thus increasing dry year allocations.*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	💧💧💧	*Reduced groundwater extraction during wet years would increase groundwater recharge and provide opportunities for SJWD water transfers of similar amount.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would improve groundwater conditions by allowing basin to recharge during wet years.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Low: No Permits	💧💧💧	
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	💧💧	*A change in Place of Use could be needed, depending on the participating agencies.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would require new agreements for the District.*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*Assumed some infrastructure changes within ROW (either owned by the District or participating agency).*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	
Schedule	1-2 years to implement	💧💧	
Uncertainty			

Costs	Moderate: Cost Information, No Engineering Details	💧💧	
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O11**

Project Name: **Build New Groundwater Extraction Wells in SJWD Retail Area** Type: **GW**

OPTION NOT CARRIED FORWARD

Project Description: Option would install new groundwater extraction wells within the SJWD Retail Area to supplement existing supplies during dry years.

-Wet year storage: None.

-Dry year augmentation: Would provide limited ability to extract groundwater in dry years to supplement existing supplies.

Note: This option was not carried forward because previous evaluations determined that there was no potential to extract groundwater in the SJWD Retail Area.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	0.04	N/A	*Assumed 1 well pumping at 300 gpm, pumping 1/2 day, 365 days during dry years only (1 in 5 years)*
Water Supply Source	Other/Multiple Sources	OTHR	*Groundwater*
Total Cost ($)	$ 1,000,000	N/A	*Assumed: - Construction cost for 1 well and facility - Land cost of $0.5 Million*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 1,459	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed costs of $100/AF (including pumping, energy, and O&M costs) to produce groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would provide limited ability to pump groundwater in dry years to supplement existing supplies.*
Perfect Beneficial Use of Existing Supplies	Low Potential	💧	*None, as this would be a new source of water.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Limited potential for groundwater production.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would provide another source of water should surface water supplies from Folsom Lake become unavailable.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	
Water Rights / Contracts	Low: No Change	💧💧💧	*N/A*
Institutional & Coordination	Low: No Partnerships Needed	💧💧💧	*No outside coordination would be needed.*
Land Acquisition	High: No Willing Seller Identified	💧	*Location of well(s) to be identified.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	*Could have localized complaints, but overall high public support.*
Schedule	Greater than 3 years to implement	💧	*Long time-frame as land to be acquired has not be identified.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*No specific site(s) have been identified.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Estimated from typical extraction wells in this region.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

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SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O12**

Project Name: **Build New Groundwater Injection/Extraction Wells in SJWD Wholesale Area** Type: **GW**

Project Description:

Option would facilitate groundwater banking by installing new groundwater extraction wells within the SJWD Wholesale Area to enable either the sale of groundwater to another agency, or groundwater extraction and conveyance to the SJWD Retail Area via the Cooperative Transmission Pipeline.

-Wet year storage: None

-Dry year augmentation: Would provide ability to utilize groundwater in dry years to supplement existing supplies. With the SJWD Retail Area using groundwater, more surface water could be made available to other agencies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	5.2	N/A	*Assumed 9 new wells (3 in OVWD, 3 in CHWD, 3 in FOWD). Extraction would occur in dry years only, with each well extracting at 1,000 gpm, pumping 1/2 day, 360 days (5 maintenance days). Injection would occur in wet/average years only, assuming 24 hours at 360 days (5 maintenance days) at 500 gpm. Water Forum wet/average years constituted 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF). Assumed a 10 percent loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*Groundwater*
Total Cost ($)	$ 27,000,000	N/A	*Assumed: - Cost for water right/contract for water supplies for injection - Average well and facility cost - Land cost of $3 Million*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 432	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed O&M of $150/AF to produce groundwater and inject groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Would provide ability to extract groundwater in dry years to supplement existing supplies. The SJWD Retail Area would be able to use groundwater, leaving more surface water supplies available for others to use.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Some potential if this option is operated as groundwater bank.*
Provide Financial Benefit	Moderate upfront costs and/or limited ability to perform new water transfers	💧💧	*Would increase use of surface water supplies. Also, during dry years, these users would use groundwater, making surface water supplies available for SJWD to transfer (generate revenue).*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would improve groundwater conditions by allowing basin to recharge during wet years.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Potential for well interference impacts. Potentially higher costs to ratepayers.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Would require application for General Order for ASR in addition to general permits for construction and management.*
Water Rights / Contracts	Low: No Change	💧💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*New agreements would be needed.*
Land Acquisition	High: No Willing Seller Identified	💧	*Location(s) to be identified.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	*Could have localized complaints, but overall high public support.*
Schedule	1-2 years to implement	💧💧	

Uncertainty			
Costs	Moderate: Cost Information, No Engineering Details	💧💧	*Based on similar costs in region. Specific sites unknown.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Number of wells estimated and unknown at this point.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

New well costs from construction of Sky Crest well by CHWD, 2015

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O13**

Project Name: **Build New Groundwater Injection/Extraction Wells along Cooperative Transmission Pipeline** Type: **GW**

Project Description:

Option would facilitate groundwater banking by installing new groundwater extraction wells along the Cooperative Transmission Pipeline to enable either the selling of groundwater to another agency, or groundwater extraction and conveyance to the SJWD Retail Area via the Cooperative Transmission Pipeline.

-Wet year storage: Would store surface water supplies in groundwater banks to maximize use of existing supplies.

-Dry year augmentation: Would provide ability to utilize groundwater in dry years to supplement existing supplies. With the SJWD Retail Area using groundwater, more surface water could be made available to other agencies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	5.2	N/A	*Assumed 9 wells, each extracting in dry years only at 1,000 gpm, pumping 1/2 day, 360 days (5 maintenance days). Injection would occur in wet/average years only, assuming 24 hours at 360 days (5 maintenance days) at 500 gpm. Water Forum wet/average years constituted 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF). Assumed a 10 percent loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*Groundwater*
Total Cost ($)	$ 27,000,000	N/A	*Assumed: - Cost for average injection well and facility - Land cost of $3 Million*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 432	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed O&M of $150/AF to produce groundwater and inject groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Would provide ability to extract groundwater in dry years to supplement existing supplies. The SJWD Retail Area would be able to use groundwater, leaving more surface water supplies available for others to use.*
Perfect Beneficial Use of Existing Supplies	Low Potential	💧	*None*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	💧💧💧	*Reduced groundwater extraction during wet years would increase groundwater recharge and provide opportunities for SJWD water transfers of similar amount.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would provide another source of water.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*Potential for well interference impacts. Potentially higher costs to ratepayers.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Would require application for General Order for ASR in addition to general permits for construction and management.*
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	💧💧	
Institutional & Coordination	Moderate: Partnerships Needed, Likely Similar to Existing Arrangement	💧💧	*New agreements would be needed.*
Land Acquisition	High: No Willing Seller Identified	💧	*Location(s) to be identified.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	*Could have localized complaints, but overall high public support.*
Schedule	1-2 years to implement	💧💧	

Uncertainty			
Costs	Moderate: Cost Information, No Engineering Details	💧💧	*Based on similar costs in region. Specific sites unknown.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Number of wells estimated and unknown at this point.*

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Relative Ranking

References:

New well costs from construction of Sky Crest well by CHWD, 2015

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O14**

Project Name: **Purchase Cal Am's Lincoln Oaks System** Type: **GW**

Project Description: Option would purchase California American Water's (Cal Am) Lincoln Oaks System which serves the western portion of the City of Citrus Heights and the unincorporated area west of I-80 and east of the UPRR. This would enable construction or expansion of infrastructure to provide surface water for use in-lieu of pumping groundwater. Then in dry years, those users would only use groundwater. Also, higher allocations would be available.

-Wet year storage: Maximize use of contract water to preserve groundwater supply in wet years when surface water is abundant, and increase average contract use.

-Dry year augmentation: Potentially higher contract water allocation because the allocation is based on usage from previous years. As stated above, the District will increase its use of contract water in non-dry years by supplying this water to the Lincoln Oaks System. In addition, instead of purchasing surface water from SSWD and Citrus Height WD, this area would rely on groundwater, leaving more surface water available for the District.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	17.0	N/A	*Wet/average year groundwater production averages.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 50,000,000	N/A	*Rough estimate to purchase a private system.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 260	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed costs of $100/AF (including pumping, energy, and O&M costs) to produce groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Instead of purchasing surface water from SSWD and CHWD, this area would rely on groundwater, leaving more surface water available for the District. Also, potential for higher contract allocations from increased surface water use during wet years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would provide a new demand for District's supplies. Would improve use of contract surface water in wet years to preserve groundwater supply when surface water is abundant.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*High upfront cost. Could have potential to facilitate transfers.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would improve groundwater conditions by allowing basin to recharge during wet years.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*Would have to be approved by California Public Utilities Commission. Tetrachloroethylene (PCE) contamination present in groundwater.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	💧💧	*Depending on which water source the District used, a change in place of use, modification of Exhibit A, or other action could be needed.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would need to enter into an agreement with Cal Am to purchase system.*
Land Acquisition	High: No Willing Seller Identified	💧	
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	*Unknown at this time.*
Schedule	Greater than 3 years to implement	💧	*Long timeframe to purchase system and construct infrastructure.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*Unknown purchase price from Cal Am. Cal Am has indicated that it would not want to sell.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Estimated from number of wells.*

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Relative Ranking

References:

References: Personal Communication. 2016. Regarding Cal Am not wanting to sell the Lincoln Oaks system.

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O15**

Project Name: **Use Roseville's ASR wells for Active Groundwater Injection and Banking** Type: **GW**

Project Description: Option would deliver the District's surface water for storage into Roseville's ASR wells in wet/above years. In dry years, the District would take one of the following actions:
(a) Sell banked water to Roseville and Roseville would forgo some of its surface water.
(b) Enter into an agreement with Roseville to extract groundwater and convey it to SJWD (which would require the construction of infrastructure by potentially modifying the pipeline to be able to reverse the direction of flow).
(c) Extract an equivalent amount of groundwater from existing wells in the Wholesale Area.
This option assumed that method (c) could be used for dry year augmentation.

-Wet year storage: Would maximize use of contract water by injecting currently unused surface water into the groundwater basin.

-Dry year augmentation: See (a), (b), and (c) above.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	1.5	N/A	*Assumed total groundwater extraction of 8,100 gpm, pumping 1/2 day, 360 days (5 maintenance days). For injection wells, assumed 24 hours at 360 days (5 maintenance days) with total injection of 5,400 gpm. Recharge frequency would be during Water Forum wet/average years (which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF)) and with a 10 percent loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 300,000	N/A	*Assumed:* *- Contractual cost: $100k* *- Minor infrastructure: $200k* *- Roseville fee for capital recovery (assumed): $30/AF* *Costs were based on the assumption that this would occur only during non-peak season, thus extensive infrastructure improvements would not be needed.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 191	N/A	*Annualized, 3.5% discount rate over 30 year project life. Assumed operations and maintenance costs of $150/AF to produce groundwater and inject groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Assuming Roseville has capacity to bank the District's surface water, this would provide opportunity to receive a small volume of stored water in dry years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would maximize use of contract water by using extra surface water for groundwater injection.*
Provide Financial Benefit	Moderate upfront costs and/or limited ability to perform new water transfers	💧💧	*Would have some improved ability for District to make transfers*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	💧💧💧	*Would include building infrastructure to receive groundwater when supplies at Folsom Lake are limited.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	💧	
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	💧💧	*Depending on which water source the District would use, a change in POU, modification of Exhibit A, or other action could be needed..*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would need new agreement with Roseville.*
Land Acquisition	High: No Willing Seller Identified	💧	*Infrastructure requirements and location unknown.*

Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	💧💧	*Public is already aware of ASR system.*
Schedule	1-2 years to implement	💧💧	*Roseville assumed to be a willing partner.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Roseville willingness to take District water has not been confirmed. With future build out, there would be an additional 5 wells with an additional capacity of about 6,500 AF/year.*

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O16**

Project Name: **Retrofit Existing Wells Within SJWD Wholesale Area for Injection/Extraction Use** Type: **GW**

Project Description: Option would retrofit existing wells for injection in the District's Wholesale Area. The District's water rights and contract entitlements would be use for injection during wet years. In dry years, the District would extract the banked water using existing extraction wells.

-Wet year storage: Would maximize use of contract water by injecting currently unused surface water into the groundwater basin.

-Dry year augmentation: Would be able to use stored groundwater to supplement dry year supplies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	12.7	N/A	*Total groundwater extraction capacity in Wholesale area of 29,000 gpm (23.4 TAF/year). Assumed 50 percent of all wells could be retrofitted for injection and 6 months of injection during Water Forum wet/average years, the capacity would be 5.8 TAF/year. Recharge frequency would be during Water Forum wet/average years (which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF)) and with a 10 percent loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 1,000,000	N/A	*21 wells in Wholesale Area. Retrofit of 50 percent or 10 wells at average cost of $100,000 each. RWQCB permitting or O&M costs not included.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 154	N/A	*Annualized, 3.5% discount rate over 30 year project life. Assumed operations and maintenance costs of $150/AF to produce groundwater and inject groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would not improve WCAs ability to pump groundwater, as it is already existing. Could result in contract allocations from increased use during wet years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would increase surface water use during wet years.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*No new transfers unless paired with another option. Low upfront costs as infrastructure is already in place with only some minor improvements needed.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would improve groundwater conditions by allowing basin to recharge during wet years.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Would require application for General Order for ASR in addition to general permits for construction and management.*
Water Rights / Contracts	Low: No Change	💧💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would require agreements with WCAs.*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*No new land anticipated.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	
Schedule	Greater than 3 years to implement	💧	*Would likely take several years as there would be 20 wells to investigate and retrofit. Some wells would be on-line earlier than others.*

Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term		*Unknown if all wells are constructed to allow use as ASR wells.*

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O17**

Project Name: **Use of a Spreading Basin Within SJWD Retail or Wholesale Area for Groundwater Recharge** Type: **GW**

Project Description: Option would use existing defined recharge areas (e.g., golf courses, conservation areas, parks) to develop spreading basins to capture wet year flows. In dry years, the District would extract groundwater using existing wells.

-Wet year storage: Would maximize use of contract water by using surface water for groundwater injection during wet years.

-Dry year augmentation: Would be able to use stored groundwater to supplement dry year supplies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	1.1	N/A	*Potential Miners Ravine, Baldwin Creek. Assumed: - 600'x600' surface recharge basin - Infiltration rate of 1 foot/day - Would be used 6 month/year during Water Forum wet/average years - Recharge frequency would be during Water Forum wet/average years (which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF)) and with a 10 percent loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 300,000	N/A	*Assumed existing conservation district or land owner favorable, minor grading improvements or pipeline needed, no land purchase.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 115	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed O&M and cost of water of $100/AF.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would allow a small volume of stored groundwater to supplement dry year supplies.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Would help maximize use of surface water supplies by using them for groundwater injection during wet years.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*No new transfers. Could avoid or reduce potential need to purchase additional water in dry years.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would allow a small volume of stored groundwater to be extracted to supplement Folsom Lake supplies.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	
Water Rights / Contracts	Low: No Change	💧💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	
Land Acquisition	High: No Willing Seller Identified	💧	*No location identified yet.*
Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	💧💧	*Would improve habitat by providing additional water surface.*
Schedule	Greater than 3 years to implement	💧	*Long timeframe, as land has not yet been identified.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*No specific site(s) have been identified.*
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term	💧	

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Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O18**

Project Name: **Purchase Orange Vale Water Company's Water Supply Wells** Type: **GW**

Project Description: Option would include purchase of existing OVWC groundwater wells by SJWD. Wells would be retrofitted to allow both injection and extraction.

-Wet year storage: Would maximize use of contract water by utilizing currently unused surface water for groundwater injection.

-Dry year augmentation: Would be able to use stored groundwater to supplement dry year supplies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	0.1	N/A	*For groundwater extraction, assumed 2 wells with total extraction at 1,000 gpm, pumping 1/2 day, 360 days (5 maintenance days). For groundwater injection, assumed 24 hours at 360 days (5 maintenance days) with a total injection of 500 gpm. Recharge frequency would be 0.2 occurrence and with a 10% loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 1,000,000	N/A	*Assumed OVWC has two existing supply wells that it would sell to SJWD to own and operate. One well has perchlorate detections above MCL. One produces sand.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 478	N/A	*Annualized, 3.5% discount rate over 30-year project life. Assumed O&M of $100/AF to produce groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would allow a small volume of stored groundwater to supplement dry year supplies.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Would help maximize use of contract water by utilizing currently unused surface water for groundwater injection.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*No new transfers.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would allow a small volume of stored groundwater to be extracted to supplement Folsom Lake supplies.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Use of contaminated wells may have more complex permitting requirements.*
Water Rights / Contracts	Low: No Change	💧💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would need to enter into an agreement with OVWC for purchase of wells.*
Land Acquisition	Moderate: Willing Seller Identified	💧💧	*Land would need to be purchased from private land owner at one site.*
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	*Unknown at this time due to contamination issues.*
Schedule	1-2 years to implement	💧💧	
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*Unknown rehabilitation feasibility and costs.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	💧💧	*Number of wells and capacity assumed. Land not owned by District at one well.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

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SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O19**

Project Name: **Allocate CVP Water to Another Agency** Type: **NS**

Project Description: Option would include delivering a portion of the District's CVP water to another agency in wetter years. Potential agencies include SSWD, RLECWD, and other groundwater users in the North American River Basin. As a condition of this option, the potential agency(ies) would become a new WCA, at a minimum. This analysis looked specifically at SSWD, because other agencies would require additional infrastructure. As SSWD is not a CVP user, this option would require an update to the District's Exhibit A Service Map to include SSWD as a WCA which would allow them use of CVP supplies, likely without a contract modification.

-Wet year storage: Would maximize use of contract water by allocation surface water to SSWD in wet years.

-Dry year augmentation: The District would have a higher allocation of and access to supplies due to higher usage in wet/average years.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	10.2	N/A	*Based on 2030 demands, the District has 12,690 AF/year of currently unused CVP supplies during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF).*
Water Supply Source	CVP Entitlement	CVP	
Total Cost ($)	$ 1,000,000	N/A	*Assumed:* *-Cost to modify Exhibit A, form new agreements, and legal and other administration fees: $1 Million* *-Capital and O&M: $0*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 40	N/A	*Annualized, 3.5% discount rate over 30-year project life. Additional CVP annual cost of $35/AF (SJWD and SSWD 2014).*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Would have a higher allocation of and access to supplies due to higher usage in wet/average years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would maximize use of contract water by allocating currently unused surface water to SSWD.*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	💧💧💧	*Would implement a new water transfer with SSWD.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would not provide an alternate way to receive water unless SJWD entered into an agreement with SSWD to receive groundwater when needed.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Would likely not need an EIS/EIR to modify Exhibit A map, but according to the Phase 1 Merger Report, NEPA and ESA may be required.*
Permitting Requirements	Low: No Permits	💧💧💧	*Likely no requirements from SWRCB.*
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	💧💧	*Would require modifying Exhibit A map to include SSWD. CVP contract would remain within control of District.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*New inter-agency agreement with SSWD would be needed, as the existing contract between SJWD and Reclamation would need to expand their place of use to include SSWD's service area boundary (i.e., modify Exhibit A map). To be included into Exhibit A map, SSWD would need to sign as a part of the District's wholesale agencies.*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*N/A*
Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	💧💧	*Would not increase rates for existing WCAs. Contract would remain within control of District.*

Schedule	Less than 1 year to implement	💧💧💧	*Should take less than a year to implement, as the main tasks would be the agreement with SSWD and an administrative action by Reclamation to modify Exhibit A. SSWD is already within the place of use of Reclamation's water right, and once a part of the District's member agencies, the justification for modifying Exhibit A could be readily accepted by Reclamation.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*General estimate for all nonstructural projects.*
Yield & Reliability	High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term	💧💧💧	*Based on 2030 demands provided in the Urban Water Management Plan (2010).*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

2010 Urban Water Management Plan for SJWD, CHWD, OVWD, City of Folsom, and FOWD.
2014. SJWD and SSWD. San Juan Water District & Sacramento Suburban Water District Phase I Evaluation of Water Management Alternatives. May

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O20**

Project Name: **Allocate Middle Fork Project Water to Another Agency Within its Place of Use in Sacramento County** Type: **NS**

Project Description: Option would include delivering a portion of the District's Middle Fork Project (MFP) water to another agency within the existing place of use in Sacramento County in wetter years. Currently, MFP water can be used in portions of Sacramento County including SJWD, SSWD, and RLECWD service areas, so no modifications in POU would be needed. This analysis looked specifically at SSWD, because other agencies would require additional infrastructure.

-Wet year storage: Would maximize use of contract water by allocating currently unused surface water to another agency.

-Dry year augmentation: None.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	6.9	N/A	*Based on 2030 demands, the District has a 8,687 AF/year of MFP water currently unused during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF).*
Water Supply Source	PCWA Middle Fork Project Entitlement	MFP	
Total Cost ($)	$ 1,000,000	N/A	*Assumed:* *-Cost to form new agreements, and legal and other administration fees: $1 Million* *-Capital and O&M: $0*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 43	N/A	*Annualized, 3.5% discount rate over 30-year project life. Additional CVP annual cost of $35/AF (SJWD and SSWD 2014) to use CVP to replace the water supply currently being provided to the WCAs.*
Contribution to Objectives			
Improve Dry Year Reliability	Low Potential	1	*Would not increase supply.*
Perfect Beneficial Use of Existing Supplies	High Potential	3	*Would be able to maximize use of contract supplies through sales to others outside of District.*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	3	*Would implement a new transfer. Would maximize use of contract supplies through sales to others outside of District. Would redirect the District's MFP "take or pay" basis fees to another agency.*
Extreme Drought Conditions	Limited Potential to Improve Conditions During an Extreme Drought	1	*Would not provide an additional water source.*
Implementation Complexity			
Environmental Compliance Requirements	Low: Categorical Exemption	3	*Potential allocations are already within MFP POU.*
Permitting Requirements	Low: No Permits	3	*Potential allocations are already within MFP POU.*
Water Rights / Contracts	Low: No Change	3	*Would use existing MFP contract. Contract would remain within control of District.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	1	*New/modified agreement or concurrence would be needed with PCWA for use of its MFP water, as well as with the buyer(s).*
Land Acquisition	Low: Existing ROW / Not Applicable	3	*N/A*
Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	2	*Would not increase rates for existing WCAs. Contract would remain within control of District.*
Schedule	Less than 1 year to implement	3	*Short timeframe to implement option, as no structural improvements should be needed.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	1	*General estimate for all nonstructural projects.*
Yield & Reliability	High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term	3	*Based on 2030 demands provided in the Urban Water Management Plan (2010).*

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Relative Ranking

References:

2010 Urban Water Management Plan for SJWD, CHWD, OVWD, City of Folsom, and FOWD.
2014. SJWD and SSWD. San Juan Water District & Sacramento Suburban Water District Phase I Evaluation of Water Management Alternatives. May

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O21**

Project Name: **Allocate Water Rights to Another Agency and Offset Incremental Costs to Ratepayers** Type: **NS**

Project Description: Option would include the District maximizing its CVP and MFP water, and allocating its water right to another agency in wetter years. Potential agencies include SSWD, RLECWD, Cal Am, and other groundwater users in the North American River Basin. As a condition of this option, the potential agency(ies) would become a new WCA, at a minimum. This analysis looked specifically at SSWD, because other agencies would require additional infrastructure. As the water right does not have a specified POU, only environmental documentation would be needed to justify the transfer. To avoid impacting fees to the District's ratepayers, the potential agency(ies) would pay the cost differential for the District to use its CVP and MFP water versus its water right.

-Wet year storage: Would maximize use of contract water by transferring currently unused surface water to SSWD.

-Dry year augmentation: The District would have a higher allocation of and access to supplies due to higher usage in wet/average years.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	17.1	N/A	*Based on 2030 demands, the District has 21,377 AF/year of currently unused surface water rights/contract entitlements during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF).* *Assumed that SJWD would use all of its CVP and MFP contracts (24,200 and 25,000 AF/year, respectively) first to meet District demands, thus only using a portion of its water rights.*
Water Supply Source	Pre-1914 and Senior Appropriative Water Right	APPR	
Total Cost ($)	$ 1,000,000	N/A	*Assumed:* *-Cost to form new agreements, and legal and other administration fees: $1 Million* *-Capital and O&M: $0*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 38	N/A	*Annualized, 3.5% discount rate over 30-year project life. Additional CVP annual cost of $35/AF (SJWD and SSWD 2014) to use CVP water to replace the water supply currently going to the WCAs.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would have a higher allocation of and access to CVP supplies due to higher usage in wet/average years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would maximize use of contract water by allocating a portion of the District's surface water to SSWD.*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	💧💧💧	*Would implement a new water transfer with SSWD.*
Extreme Drought Conditions	Limited Potential to Improve Conditions During an Extreme Drought	💧	*Would not provide an alternate way to receive water unless SJWD entered into an agreement with SSWD to receive groundwater when needed.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Environmental documentation would likely be needed to allocate the District's water right to another agency in wetter years.*
Permitting Requirements	Low: No Permits	💧💧💧	*No complex permitting anticipated. SWRCB approval not anticipated because the water right does not have a POU, but would need proper justification for the transfer.*
Water Rights / Contracts	Low: No Change	💧💧💧	*District's water right could be allocated to another agency without changing its POU. Water right would remain within control of District.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*New agreement needed with SSWD.*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*N/A*

Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support		*Transfer would not increase rates for existing WCAs. Water right would remain within control of District.*
Schedule	Less than 1 year to implement		*Short timeframe as the main task would be entering into an agreement with SSWD.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*General estimate for all nonstructural projects.*
Yield & Reliability	High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term		*Based on 2030 demands provided in the Urban Water Management Plan (2010).*

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Relative Ranking

References:

2010 Urban Water Management Plan for SJWD, CHWD, OVWD, City of Folsom, and FOWD.
SJWD. Adopted Budget. Fiscal Year 2015-2016.

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O22**

Project Name: **Integrate Groundwater and Surface Water Uses in Placer County** Type: **SW**

OPTION NOT CARRIED FORWARD

Project Description: Option would provide the District with access to surface water above Folsom Lake. In wet years, the District would provide a portion of its MFP supplies to Western Placer County as this would require fewer infrastructure modifications compared to what PCWA would need to directly deliver water to this same area. In return, PCWA would provide additional water to the District in dry years.

Note: There are limited opportunities for this option. If PCWA should want/need additional water, it would be more likely that PCWA would take water back from SSWD, SJWD, Nevada Irrigation District, etc., instead of implementing this option.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)		N/A	*Not calculated as option not carried forward.*
Water Supply Source	PCWA Middle Fork Project Entitlement	MFP	
Total Cost ($)		N/A	*Not calculated as option not carried forward.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)		N/A	*Not calculated as option not carried forward.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would have access to PCWA's water supply in dry years.*
Perfect Beneficial Use of Existing Supplies	Low Potential	💧	*Would require contract entitlement transfer. District would no longer own the supply.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Supplies would not be sold; instead entitlement would be transferred to PCWA.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would provide a method for the District to receive water from above Folsom Lake.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Moderate environmental compliance for groundwater/surface water agreements.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Likely State permit(s) required for groundwater/surface water agreements.*
Water Rights / Contracts	High: New Water Right	💧	*Would require contract entitlement transfer. District would no longer own the supply.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*New agreement with PCWA would be needed.*
Land Acquisition	High: No Willing Seller Identified	💧	*N/A*
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	*Degree of public acceptance currently unknown.*
Schedule	Greater than 3 years to implement	💧	*Unlikely to get agreement on this option in near-term.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	*Not calculated as option not carried forward*
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term	💧	*Not calculated as option not carried forward*

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Relative Ranking

References:

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SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O23**

Project Name: **Coordinate Between SJWD and PCWA Water Treatment Plants to Optimize Operational Flexibility** Type: **SW**

Project Description:

This option would optimize the use of both the Foothill and Peterson Water Treatment Plants (WTP) and provide operational flexibility. During wet years, Peterson WTP capacity would be maximized and would serve part of PCWA's service area. This would require water to be pumped uphill and infrastructure improvements to convey water to PCWA. In return, during dry years, the District would reduce its use of Peterson WTP and instead divert some of its MFP supply above Folsom Lake to be treated at Foothill WTP. This water would be convyed south to SJWD's service area in Placer County (specifically Granite Bay). Infrastructure improvements would be needed to Foothill WTP to increase capacity, in addition to improving existing/constructing new interties.

-Wet year storage: Would maximize use of District's water supplies by using Peterson WTP to treat water for delivery to PCWA.

-Dry year augmentation: The District would have a higher allocation of and access to supplies due to higher usage in wet/average years. District would also have access to PCWA's MFP water supplies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	12.3	N/A	*Assumed upper end to be equal to the average demand of SJWD Retail Area in Placer County (12,313 AF/year). Yield would need to be refined based on Foothill WTP capacity.*
Water Supply Source	PCWA Middle Fork Project Entitlement	MFP	
Total Cost ($)	$ 15,000,000	N/A	*Included increasing Foothill WTP capacity and improving/constructing infrastructure to move water from District to PCWA.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 67	N/A	*Annualized, 3.5% discount rate over 30-year project life. Would likely require an additional $/AF charge to pump water from District to PCWA.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	
Perfect Beneficial Use of Existing Supplies	Moderate Potential	💧💧	*Would increase use of MFP contract entitlement.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Would only improve operational flexibility.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	💧💧💧	*Would provide access to supplies above Folsom Lake.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	*Unknown pending potential infrastructure improvement needs.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*Unknown pending potential infrastructure improvement needs.*
Water Rights / Contracts	Low: No Change	💧💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would require agreement with PCWA for coordinated use of WTPs and conveyance facilities.*
Land Acquisition	Moderate: Willing Seller Identified	💧💧	*Unknown if ROW would be required.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	
Schedule	1-2 years to implement	💧💧	
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied	💧	
Yield & Reliability	Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term	💧	*Need to determine ability to move water, detailed operational agreements, operations of WTPs.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O24**

Project Name: **Merger with Another Agency** Type: **NS**

Project Description: Option would include a consensus-based merger of the District with another agency. A merger would provide access to other supplies, perfect beneficial use, and provide opportunities for a conjunctive use program. A merger would provide the District with a reliable and long-term arrangement, in addition to control in operations. Potential candidates for consideration because of their proximity to the District, previous coordination/transfers with the District, existence of existing infrastructure, etc. would be as follows:
1) RLECWD: Would require buy-in to the Cooperative Transmission Pipeline and building of some new infrastructure to receive District supplies.
2) SSWD: Would allow the District to have a larger area to maximize use of its supplies and have access to groundwater. In return, SSWD would have access to District contract supplies.
3) CWD: Similar to SSWD above.
4) Others, to be determined.

-Wet year storage: Would maximize use of contract water by utilizing currently unused extra surface water in its expanded area.

-Dry year augmentation: The District would have a higher allocation of and access to supplies due to higher usage in wet/average years. Also, the District would have access to groundwater supplies as an additional source of water.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	17.1	N/A	*Based on 2030 demands, the District has 21,377 AF/year of currently unused surface water rights/contract entitlements during Water Forum wet/average years, which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF). Assumed the merger agenci(es) would use all available surplus supplies.*
Water Supply Source	Other/Multiple Sources	OTHR	*All sources.*
Total Cost ($)	$ 2,000,000	N/A	*Assumed legal, administration, and miscellaneous fees of $2 Million.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 106	N/A	*Annualized, 3.5% discount rate over 30-year project life. Additional CVP annual cost of $35/AF (SJWD and SSWD 2014) to use CVP water to replace the supply currently being provided to the WCAs. Also assumed capital and O&M of $100/AF, as well as likely additional $/AF charges for Cooperative Transmission Pipeline use and treatment costs.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would have a higher allocation of and access to CVP supplies due to higher demand and increased CVP use in wet/average years. May also have access to other supplies based on the merger agency.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would maximize use of contract water by utilizing currently unused surplus surface water in merger.*
Provide Financial Benefit	Low upfront costs and/or able to implement new water transfers	💧💧💧	*Would increase water demands and number of ratepayers.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Could provide an alternate way to receive water pending the District's new water portfolio (e.g., access to groundwater).*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*NEPA and ESA may be required (SJWD and SSWD 2014).*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	💧	*Interaction with SWRCB may be needed.*
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	💧💧	*Depending on the agency involved in the merger with the District, a change in POU may or may not be needed.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would require consolidation of the administrative organizations.*
Land Acquisition	High: No Willing Seller Identified	💧	*N/A*

Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support		*Public acceptance unknown, but likely would be supported as this option would provide a financial benefit to ratepayers.*
Schedule	1-2 years to implement		*Detailed evaluation and agreements would be needed. Assumed no structural changes would be needed.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*General estimate for all nonstructural projects.*
Yield & Reliability	High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term		*Based on 2030 demands provided in the Urban Water Management Plan (2010).* *Amount would depend on merger agency.*

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Relative Ranking

References:

2010 Urban Water Management Plan for SJWD, CHWD, OVWD, City of Folsom, and FOWD.
2014. SJWD and SSWD. San Juan Water District & Sacramento Suburban Water District Phase I Evaluation of Water Management Alternatives. May

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O25**

Project Name: **Establish Nonpotable Reuse in SJWD Service Area** Type: **RW**

Project Description:

Option would establish nonpotable reuse in the SJWD Service Area. Reclaimed water could be used for flushing toilets, watering parks or residential lawns, supplying fire hydrants, washing cars and streets, filling decorative fountains, or many other purposes. Methods to accomplish this could be as follows:
(1) Build a pipeline from City of Roseville's wastewater treatment plant to SJWD Service Area and utilizing existing tertiary treatment facilities *(note, this method was selected for this high-level evaluation as it was anticipated to have the lowest total cost).*
(2) Build a pipeline from Sacramento Regional County Sanitation District's wastewater treatment plant to the SJWD's Service Area.
(3) Build a scalping plant within SJWD's Service Area to treat liquid raw wastewater.
(4) Build a pipeline from EID's wastewater treatment plant to the SJWD's Service Area.

-Wet year storage: None.

-Dry year augmentation: Would use recycled water to meet certain nonpotable water demands, leaving more water right and contract entitlement water available for District use.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	2.8	N/A	*Assumed average supply of 2.5 MGD based on similar facilities.*
Water Supply Source	Other/Multiple Sources	OTHR	*recycled water*
Total Cost ($)	$ 51,000,000	N/A	*Assumed:* *- 64,000 feet of 24" transmission pipe : $21.5 Million* *- 50,000 feet of 6" distribution pipe: $4.6 Million* *- 375 HP pump station: $2 Million* *- Valves and turnouts: $1 Million* *- Plus 30% contingency, 30% engineering, CM & Admin, 3% environmental documentation, 2% legal* *-No additional recycled water storage required*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 1,989	N/A	*Annualized, 3.5% discount rate over 30-year project life and a recycled water wholesale cost of $1,000/AF.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would use recycled water to meet certain nonpotable water demands, leaving more water right and contract entitlement water available for District use. Volume of recycled water available would be subject to potential reductions in dry years (due to reduced production related to water conservation activities).*
Perfect Beneficial Use of Existing Supplies	Low Potential	💧	*Would not increase use of existing supplies.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Would not support new transfers. High upfront costs.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	💧💧💧	*Would provide another source of water (recycled water) when supplies from Folsom Lake are unavailable.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*EIR for potential construction and/or operational impacts associated with pipeline and plant construction.*
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*California Title 22 requirements, RWQCB permit, Petition for Change, Ownership of Discharge, Water Right application.*
Water Rights / Contracts	Low: No Change	💧💧💧	*No change.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would required new partnership with City of Roseville.*
Land Acquisition	High: No Willing Seller Identified	💧	*POW would be required for new pipeline.*
Public Acceptance & Support	High: Public Acceptance and Wide Support	💧💧💧	*Likely high support for use of recycled water.*
Schedule	1-2 years to implement	💧💧	

Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*Users for recycled water have not yet been identified, but would likely be parks, golf courses, schools, and other nonpotable water uses.*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term		*Based on similar facilities. Long-term availability from Roseville has not yet been evaluated.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

2013. Bartle Wells Associates. City of Sunnyvale Recycled Water Pricing Recommendations

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O26**

Project Name: **Establish Indirect Potable Reuse in SJWD Service Area** Type: **RW**

Project Description: Option would establish indirect potable reuse (IPR) by conveying advanced treated wastewater treatment plant effluent from the Dry Creek WWTP to groundwater injection wells in the SJWD Wholesale Area. A groundwater study would need to be conducted to identify the movement of water and ensure that existing drinking water wells would not be affected by the injected effluent. It was also assumed that existing extraction wells within the District would be used for this option.

-Wet year storage: Would inject water or utilize a spreading basin during all year types, including wet years.

-Dry year augmentation: Stored water could be extracted in dry years, providing an additional source of water for the District to use when contract supplies are not sufficient to meet demand.

Related Options: Options 11, 12, and 13

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	5.6	N/A	*Assumed 5 MGD average day production from Dry Creek WWTP. Higher than O24 because IPR would allow for utilization of recycled water during off peak periods.*
Water Supply Source	Other/Multiple Sources	OTHR	*recycled water*
Total Cost ($)	$ 98,600,000	N/A	*Assumed:* *- Full advanced treatment as required to meet Title 22 Groundwater Replenishment Requirements: $32.5 Million* *- 64,000 feet of 24" transmission pipe : $21.5 Million* *- 225 HP pump station: $1.4 Million* *- (4) 250 foot deep injection wells: $.25 Million* *- Plus 30% contingency, 30% engineering, CM & Admin, 3% environmental documentation, 2% legal* *- Use of existing extraction wells.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 1,956	N/A	*Annualized, 3.5% discount rate over 30-year project life and a recycled water wholesale cost of $1,000/AF.*
Contribution to Objectives			
Improve Dry Year Reliability	High Potential	💧💧💧	*Stored water could be extracted in dry years, providing an additional source of water for the District to use when contract supplies are not sufficient to meet demand.*
Perfect Beneficial Use of Existing Supplies	Low Potential	💧	*While effluent would be injected or spread in a basin during all year types, including wet years, use of existing surface water supplies would not be increased.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*Would not support new transfers. High upfront costs.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	💧💧💧	*Would provide another source of water (recycled water) when supplies from Folsom Lake are unavailable.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	💧	*EIR for potential construction and/or operational impacts associated with pipeline and treatment facility construction.*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	💧	*Complex permitting required by California Title 22 regulations for groundwater replenishment projects. Modify Roseville's permits.*
Water Rights / Contracts	Low: No Change	💧💧💧	*No change.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Utilizing recycled water stored in groundwater basins would require coordination with agencies with access to the groundwater basin.*
Land Acquisition	High: No Willing Seller Identified	💧	*If surface spreading ponds are utilized, land would need to be acquired in strategic locations (permeable soil, away from potable supply wells, etc.).*

Public Acceptance & Support	Low: Low Public Acceptance and Support		*There would be the potential for public opposition to IPR due to perceived health risks and discomfort with consuming recycled water.*
Schedule	Greater than 3 years to implement		*Advanced treatment facilities and permitting could take significant time to implement.*
Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term		

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

2013. Bartle Wells Associates. City of Sunnyvale Recycled Water Pricing Recommendations

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O27**

Project Name: **Participate in RiverArc** Type: **SW**

Project Description: Option would create a link between the Sacramento River and the Cooperative Transmission Pipeline that would enable the District to receive some of its water supplies from the Sacramento River when needed as part of the RiverArc Project. The project would divert water through existing intakes/diversions from the Sacramento River, deliver that water via raw water pipelines to a new regional WTP, and distribute the treated surface water through new and existing pipelines to local water agencies. This project would require coordination with other agencies to help fund the project in addition to the District moving some of its water rights from the American River to the Sacramento River.

-Wet year storage: None.

-Dry year augmentation: Would provide more reliability as the District would have access to surface water from another location, should very limited supplies be available at Folsom Lake (i.e., during extreme drought conditions). The volume of water supplies available/allocated would be the same, but the District would have the flexibility to take delivery of water from two different access points.

Related Options: Options 18, 19, 20, and 23

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	1.2	N/A	*10.3 MGD maximum day demand (5.15 MGD average daily demand) during dry years only. Assumed dry years would occur every 1 in 5 years, for the entire year.*
Water Supply Source	Other/Multiple Sources	OTHR	*MFP and CVP water*
Total Cost ($)	$ 64,300,000	N/A	*Preliminary portion of District's total project cost.*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 2,376	N/A	*Annualized, 3.5% discount rate over 50-year project life.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	◆◆	*Would diversify supply options, but the District's total volume of water allocated/received would not increase.*
Perfect Beneficial Use of Existing Supplies	Moderate Potential	◆◆	*Would not increase use of contract supplies unless paired with another option (e.g., purchasing another agency, building infrastructure to enable transfers) such that in wet years, the District could increase its use of contract entitlements.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	◆	*Could include new transfers if combined with other options. High upfront costs.*
Extreme Drought Conditions	High Potential to Improve Conditions During an Extreme Drought	◆◆◆	*Would decrease the District's reliance on Folsom Lake by providing access to its supplies from the Sacramento River.*
Implementation Complexity			
Environmental Compliance Requirements	Complex: EIR	◆	*EIR for potential construction impacts associated with building a large, new pipeline. Also, NEPA for moving CVP diversion.*
Permitting Requirements	Complex: Multiple Federal, State and Local Permits	◆	*Complex, as it would require building a new, large pipeline.*
Water Rights / Contracts	Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	◆◆	*Change in point of delivery for contract entitlements.*
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	◆	*Would require partnering with other agencies to build the project.*
Land Acquisition	High: No Willing Seller Identified	◆	*To be determined.*
Public Acceptance & Support	Moderate: Some Public Acceptance and Moderate Support	◆◆	*Moderate support within District as the costs are high, even though it would improve dry year reliability.*
Schedule	Greater than 3 years to implement	◆	*Would take over 25 years to design and construct.*
Uncertainty			
Costs	Moderate: Cost Information, No Engineering Details	◆◆	*(West Yost Associates, 2015)*
Yield & Reliability	Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	◆◆	*(West Yost Associates, 2015)*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

2015. West Yost Associates. Sacramento River Regional Water Reliability Project. Planning Phase 1. September.

SAN JUAN WATER DISTRICT WATER SUPPLY & RELIABILITY STUDY

Project Evaluation Summary

ID: **O28**

Project Name: **Purchase Water Supply Wells in SJWD Wholesale Area** Type: **GW**

Project Description: Option would transfer O&M responsibility and ownership of mutually agreed groundwater supply wells and associated facilities in the WCAs to the District. The District would centrally operate production wells, storage, and selected transmission pipelines. This option would implement the District's Policy F: Full Service Demand Responsibility. It would help the District achieve full integration of groundwater management and conjunctive use, and provide economies of scale. Purchasing the wells would provide the District with operational flexibility and avoid the need for numerous agreements. Wells would be retrofitted to allow for both injection and extraction, to the extent possible.

-Wet year storage: Would maximize use of contract water by utilizing currently unused surface water for groundwater injection.

-Dry year augmentation: Would be able to use stored groundwater to supplement dry year supplies.

Related Options: None

METRICS	ASSESSMENT/ VALUE	SCORE	NOTES
Cost-Effectiveness			
Yield - Long-term Average (TAF/year)	10.9	N/A	*Wholesale Area total extraction capacity of 29,000 gpm (23.4 TAF/year). Assuming 50 percent of all wells could be retrofitted for injection and 6 months of injection during Water Forum wet/average years, the capacity would be 5.8 TAF/year. Recharge frequency would be during Water Forum wet/average years (which constitute 80 percent of the years from 1921 through 2015 (November-March unimpaired flows to Folsom Lake exceeding 950,000 AF)) and with a 10 percent loss in aquifer.*
Water Supply Source	Other/Multiple Sources	OTHR	*District's water rights and contract entitlements.*
Total Cost ($)	$ 8,200,000	N/A	*Assumed purchase price would be the book value (capital assets, less depreciation) of the wells:* *- FOWD, 8 wells: $3.5 Million (FOWD, 2015)* *- CHWD, 4 wells: $3.7 Million (CHWD, 2015)* *- OVWC, 2 wells: $1 Million (estimated)*
Overall Cost-effectiveness ($/AF) (Total Cost / Yield)	$ 141	N/A	*Annualized, 3.5% discount rate over 30-year project life. O&M of $100/AF to produce groundwater.*
Contribution to Objectives			
Improve Dry Year Reliability	Moderate Potential	💧💧	*Would not improve wholesale agencies ability to pump groundwater, as it is already existing. Could result in higher contract allocations from increased use during wet years.*
Perfect Beneficial Use of Existing Supplies	High Potential	💧💧💧	*Would increase surface water use during wet years.*
Provide Financial Benefit	High upfront costs and/or unlikely to include new water transfers	💧	*High cost to purchase.*
Extreme Drought Conditions	Moderate Potential to Improve Conditions During an Extreme Drought	💧💧	*Would improve groundwater conditions by allowing basin to recharge during wet years.*
Implementation Complexity			
Environmental Compliance Requirements	Moderate: IS/ND/MND	💧💧	
Permitting Requirements	Moderate: Some State and/or Local Permits	💧💧	*ASR permitting, Division of Drinking Water source water amendments.*
Water Rights / Contracts	Low: No Change	💧💧💧	
Institutional & Coordination	High: Partnerships Needed, Likely New Agreement	💧	*Would require agreements with WCAs for purchase of wells.*
Land Acquisition	Low: Existing ROW / Not Applicable	💧💧💧	*No new land anticipated.*
Public Acceptance & Support	Low: Low Public Acceptance and Support	💧	*Public opinion of selling off water production capacity, less reliability and control of costs.*
Schedule	1-2 years to implement	💧💧	

Uncertainty			
Costs	Low: No Planning Documents, Best Engineering Judgment Applied		*Unknown if willing sellers.*
Yield & Reliability	High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term		*Number of wells and capacity well established. Modifications required for ASR would need further assessment.*

Key: AF = acre-feet, CVP = Central Valley Project, EIR = Environmental Impact Report, IS = Initial Study, MND = Mitigated Negative Declaration, N/A = not applicable, ND = Negative Declaration, PCWA = Placer County Water Agency, ROW = Right-of-Way, TAF = thousand acre-feet

Relative Ranking

References:

2015. Fair Oaks Water District. Comprehensive Annual Financial Report for the Year Ended December 31, 2014.
2015. Citrus Heights Water District. Audited Financial Statements for December 31, 2014.

Project Evaluation Criteria - Metrics and Scoring

Objective: Financial Benefit	
Low upfront costs and/or able to implement new water transfers	♦♦♦
Moderate upfront costs and/or limited ability to perform new water transfers	♦♦
High upfront costs and/or unlikely to include new water transfers	♦

Completeness of Project Definition - Cost	
High: Planning Documents/Studies Available	♦♦♦
Moderate: Cost Information, No Engineering Details	♦♦
Low: No Planning Documents, Best Engineering Judgment Applied	♦

Implementation Factor - Environmental Compliance Requirements	
Low: Categorical Exemption	♦♦♦
Moderate: IS/ND/MND	♦♦
Complex: EIR	♦

Uncertainty - Yield/Reliability	
High: Confirmed Yield, High Reliability, and/or Agreement is Long-Term	♦♦♦
Moderate: Confirmed Yield, Moderate Reliability, and/or Agreement is Long-Term	♦♦
Low: Unconfirmed Yield, Low Reliability, and/or Agreement is Short-Term	♦

Implementation Factor - Permitting Requirements	
Low: No Permits	♦♦♦
Moderate: Some State and/or Local Permits	♦♦
Complex: Multiple Federal, State and Local Permits	♦

Implementation Factor - Public Acceptance and Support	
High: Public Acceptance and Wide Support	♦♦♦
Moderate: Some Public Acceptance and Moderate Support	♦♦
Low: Low Public Acceptance and Support	♦

Implementation Factor - Water Right/Contract	
Low: No Change	♦♦♦
Moderate: Change to Point of Diversion/Delivery, and/or Place of Use	♦♦
High: New Water Right	♦

Implementation Factor - Schedule	
Greater than 3 years to implement	♦
1-2 years to implement	♦♦
Less than 1 year to implement	♦♦♦

Implementation Factor - Institutional Requirements	
Low: No Partnerships Needed	♦♦♦
Moderate: Partnerships Needed, Likely Similar to Existing Arrangement	♦♦
High: Partnerships Needed, Likely New Agreement	♦

Implementation Factor - Land Acquisition	
Low: Existing ROW / Not Applicable	♦♦♦
Moderate: Willing Seller Identified	♦♦
High: No Willing Seller Identified	♦

Type	Code
Surface Water	SW
Groundwater	GW
Transfer/Exchanges	NS
Recycled Water	RW

Water Supply Source	Code
Pre-1914 and Senior Appropriative Water Right	APPR
CVP Entitlement	CVP
PCWA Middle Fork Project Entitlement	MFP
Other/Multiple Sources	OTHR

Extreme Drought Objective Contribution	
High Potential to Improve Conditions During an Extreme Drought	♦♦♦
Moderate Potential to Improve Conditions During an Extreme Drought	♦♦
Limited Potential to Improve Conditions During an Extreme Drought	♦

Objective Contribution	
High Potential	♦♦♦
Moderate Potential	♦♦
Low Potential	♦

Key:

AF = acre-feet

EIR = Environmental Impact Report

IS = Initial Study

MND = Mitigated Negative Declaration

ND = Negative Declaration

DRAFT

Finance Committee Meeting Minutes
San Juan Water District
May 10, 2016
4:00 p.m.

Committee Members: Ted Costa, Director (Chair)
Pam Tobin

District Staff: Shauna Lorance, General Manager
Keith Durkin, Assistant General Manager
Donna Silva, Director of Finance
Michael Stemple, Purchasing Agent
Teri Grant, Board Secretary/Administrative Assistant

Topics: Review and Pay Bills (W & R)
Purchase Additional Clarion (chemical used at Water Treatment Plant)
Authorization to Purchase Vacuum Trailer
Quarterly Financial Report – Quarter Ending 3/31/2016
FY 2015-2016 Mid-Year Budget Review
Other Finance Matters
Public Comment

1. Review and Pay Bills (W & R)

The committee reviewed the presented bills and claims. There were no reimbursements to the General Manager for review in this packet of bills and claims. The reviewed bills and claims were found to be in order.

Staff update: the total amount of bills and claims provided for approval for April payables is $1,056,850.25.

The Finance Committee recommends consideration of a motion to adopt Resolution 16-07.

2. Purchase Additional Clarion (chemical used at Water Treatment Plant)

Mr. Stemple reported that additional Clarion A402P is needed prior to the end of FY 2015-16. A written staff report was included in the board packet and will be attached to the meeting minutes. Clarion is a chemical used to process out sediments from the water. Staff is requesting authorization to purchase an additional 148 tons of Clarion for this fiscal year. In addition, he noted that the District does not need to initiate a separate bidding process at this time since the original bid from Chemtrade Chemicals set the price per ton and is good for the entire fiscal year.

In response to President Tobin's question, Ms. Lorance informed the committee, that since this is above her authorization limit of $15,000, the Board needs to approve the purchase; however, staff will be bringing a request to the committee at a later date for increasing the General Manager's spending limit as discussed in a previous workshop.

The Finance Committee recommends consideration of a motion to approve the purchase of an additional 147.93 tons (6 truckloads) of Clarion A402P, liquid aluminum w/polymers blend, a water treatment chemical, at a total cost of $25,000 with a 10% contingency for a total cost of $27,500.

3. Authorization to Purchase Vacuum Trailer

Mr. Stemple informed the committee that the District's eleven year old "50HP-Ditch Witch FX60" (E#50) needs to be replaced. A written staff report was included in the board packet and will be attached to the meeting minutes. He explained that the vacuum equipment serves a key role for Field Services and the District by automating manual labor activities.

Mr. Stemple explained that due to the age of the engine, the vacuum is environmentally non-compliant to the EPA – Clean diesel requirement & State of California Air Resources Board "CARB"- particulate matter emissions. Therefore, starting in 2017 use of the existing equipment will be limited to a maximum of 100 total hours of annual operation. The District currently operates this equipment well over 124 hours annually for routine use. This limitation would hamper our ability to effectively utilize this equipment for its intended purpose. This item came in under the budgeted amount of $92,000.

The Finance Committee recommends consideration of a motion to approve the purchase of a new Vacuum Trailer from the lowest bidder, RDO Equipment Co. in the amount of $80,175.

4. Quarterly Financial Report – Quarter Ending 3/31/2016

Ms. Silva informed the committee that the Quarterly Financial Report (Income Statement) for the quarter ending March 31, 2016 were created using a new format, which she believes will provide the right mix of detail and summary information for the Board. As per Board request, the new reports are completely system generated. Ms. Silva informed the committee that the only upcoming change would be the expansion of the report to include two capital reserve funds once the funds have been created.

Ms. Silva informed the committee that the Project Activity vs. Budget Report shows the CIP activity. She explained that the report is still under development as the budget information has not been incorporated into the report.

For information only; no action requested.

5. FY 2015-2016 Mid-Year Budget Review

Ms. Silva informed the committee that she will be providing the FY 2015-16 Mid-Year Budget Review at the Board meeting on Wednesday. She explained that the information provided to the committee in the Quarterly Financial Report only goes through March 2016 and the information that she will present to the Board will show projections through June 30, 2016.

For information only; no action requested.

6. Other Finance Matters (W or R)

Ms. Lorance informed the committee that she expects the existing mandatory conservation to be lifted for the District based on the Governor's Executive Order that just came out; however, she expects there will be ongoing impacts to revenues due to long term conservation efforts. She informed the committee that she will be talking to Bob Reed, who is working on the District's financial plans, regarding moving the fixed costs that are currently in the volumetric water rate to the fixed portion of the water rate, and leaving only variable costs in the volumetric portion of the water rate. Both the wholesale and retail rate structures should be considered for revision. Once he provides that information, Ms. Lorance will report back to the committee.

Director Costa commented that he received the email from the General Manager regarding the Assistant General Manager's contract. Ms. Lorance informed the committee that Mr. Durkin came forward with the request to terminate the contract and revert back to a non-contracted employee. She explained that the Personnel Committee will be reviewing the request.

7. Public Comment

There were no public comments.

The meeting was adjourned at 4:38 p.m.

San Juan Water District

RESOLUTION 16-07
PAYMENT OF BILLS AND CLAIMS

WHEREAS, the Finance Committee of the Board of Directors has reviewed the bills and claims in the amount of $1,056,850.25; and

WHEREAS, the Finance Committee of the Board of Directors has found the bills and claims to be in order.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the San Juan Water District as follows:

1. The bills and claims attached hereto totaling $1,056,850.25 are hereby approved.

2. That the depositary be and the same is hereby authorized to pay said bills and claims in the total sum of $1,056,850.25 of the General Fund Account.

PASSED AND ADOPTED by the Board of Directors of the San Juan Water District on the 11th day of May 2016, by the following vote:

AYES: DIRECTORS:
NOES: DIRECTORS:
ABSENT: DIRECTORS:

PAMELA TOBIN
President, Board of Directors
San Juan Water District

ATTEST

TERI GRANT
Secretary, Board of Directors

May 2016 Payment Register

Paid in Advance:

Check Date:	Vendor:			Amount:
04/30/2016	Payroll			511,357.59
04/28/2016	Cappo Management XXIX Inc - GM's New Car	CK	49929	37,494.48
04/25/2016	AFLAC - Payroll	CK	49922	577.34
04/26/2016	AFLAC - Payroll	CK	49927	577.34
04/25/2016	Galic Disbursing Company - Payroll	CK	49925	400.00
05/04/2016	Galic Disbursing Company - Payroll	CK	49930	400.00
04/25/2016	Franchise Tax Board - Payroll	CK	49924	295.00
05/09/2016	Franchise Tax Board - Payroll	CK	49932	295.00
04/25/2016	CalPERS Long Term Care - Payroll	CK	49923	167.39
05/09/2016	CalPERS Long Term Care - Payroll	CK	49931	167.39
05/04/2016	ACWA / JPIA - Employee Assistance Program	EFT	404497	105.75
04/26/2016	PG&E - Electric Bill	CK	49928	82.33
	Total Paid in Advance			**551,919.61**

Checks:

** Checks cut from approved Open Payable List and Pending Payables. **- See Attached Check Register**

Regular Checks	285,551.13
EFT's	207,700.98
Total Check Register	**493,252.11**

Pending Payables:

Invoice No.:	Vendor - Description:	Invoice Amount	Vendor Total
April Statement	US Bank - CalCards	11,678.53	11,678.53
	Total Pending Payables		**11,678.53**

REPORTED TO FINANCE COMMITTEE AS PAID AND PAYABLE	**1,056,850.25**
Adjustments: *None*	
TOTAL PAID AND PAYABLE	**1,056,850.25**

Signature_____

Signature_____

San Juan Water District, CA

Check Register

Packet: APPKT00927 - 2016-05-11 May Board Approved AP-MS

By Check Number

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: APBNK-APBNK						
03091	Ace Hardware - Auburn Folsom Act#2(	05/11/2016	Regular	0.00	257.08	49933
01073	Amarjeet Singh Garcha	05/11/2016	Regular	0.00	1,500.00	49934
01026	American River Ace Hardware, Inc.	05/11/2016	Regular	0.00	47.93	49935
02463	AnswerNet	05/11/2016	Regular	0.00	167.10	49936
03364	Ashby, Leslie	05/11/2016	Regular	0.00	100.00	49937
01138	AT&T Mobility II LLC	05/11/2016	Regular	0.00	61.51	49938
01165	Backflow Technologies	05/11/2016	Regular	0.00	195.84	49939
01182	Bartkiewicz, Kronick & Shanahan	05/11/2016	Regular	0.00	17,632.63	49940
01234	Bryce Consulting, Inc.	05/11/2016	Regular	0.00	975.00	49941
01250	C & D Contractors, Inc.	05/11/2016	Regular	0.00	14,915.44	49942
01437	California Utilities Emergency Associat	05/11/2016	Regular	0.00	500.00	49943
03345	Cessna, Chris	05/11/2016	Regular	0.00	164.00	49944
03372	Chapman, Edward	05/11/2016	Regular	0.00	338.76	49945
03365	Christe, Angelica	05/11/2016	Regular	0.00	75.00	49946
01372	City of Folsom	05/11/2016	Regular	0.00	28.00	49947
01373	City of Roseville	05/11/2016	Regular	0.00	3,731.49	49948
01375	CITY OF SACRAMENTO	05/11/2016	Regular	0.00	6,842.50	49949
01398	Colorado Lining International, Inc.	05/11/2016	Regular	0.00	11,887.00	49950
02410	Desjardin, Scott	05/11/2016	Regular	0.00	140.00	49951
01494	Dewey Services Inc.	05/11/2016	Regular	0.00	82.00	49952
01554	Electrical Equipment Co	05/11/2016	Regular	0.00	7,432.38	49953
01609	Federal Express Corporation	05/11/2016	Regular	0.00	21.27	49954
01623	FISHER SCIENTIFIC COMPANY LLC	05/11/2016	Regular	0.00	631.86	49955
01634	Folsom Lake Ford, Inc.	05/11/2016	Regular	0.00	55.14	49956
03089	Fulton, Jonathan	05/11/2016	Regular	0.00	105.00	49957
01657	Galic Disbursing Company	05/11/2016	Regular	0.00	400.00	49958
02567	Grant, Teri	05/11/2016	Regular	0.00	114.00	49959
02567	Grant, Teri	05/11/2016	Regular	0.00	25.92	49960
01454	Griego, Daniel	05/11/2016	Regular	0.00	200.00	49961
03363	Griffin, Pam OR Scott	05/11/2016	Regular	0.00	110.39	49962
01733	Harris Industrial Gases	05/11/2016	Regular	0.00	135.00	49963
01741	HDR Engineering, Inc.	05/11/2016	Regular	0.00	7,424.96	49964
02047	Heasley, Mike	05/11/2016	Regular	0.00	106.20	49965
03349	Independent Electric Supply	05/11/2016	Regular	0.00	922.73	49966
03110	Lance, Soll & Lunghard, LLP	05/11/2016	Regular	0.00	27,582.00	49967
03366	Lawrence, Tyler	05/11/2016	Regular	0.00	200.00	49968
02024	MCI WORLDCOM	05/11/2016	Regular	0.00	105.13	49969
02022	Morgan, Daren P.	05/11/2016	Regular	0.00	417.70	49970
03339	Moule's Elk Grove Glass	05/11/2016	Regular	0.00	2,342.16	49971
03367	Noble, Michele	05/11/2016	Regular	0.00	100.00	49972
02129	Occu-Med Ltd.	05/11/2016	Regular	0.00	256.00	49973
02131	Office Depot, Inc.	05/11/2016	Regular	0.00	1,183.03	49974
	Void	05/11/2016	Regular	0.00	0.00	49975
02150	Pace Supply Corp	05/11/2016	Regular	0.00	791.20	49976
03374	Pamela Kay Hurt	05/11/2016	Regular	0.00	9,181.44	49977
03026	PFM Asset Management	05/11/2016	Regular	0.00	903.18	49978
02146	PG&E	05/11/2016	Regular	0.00	4,667.57	49979
02205	Placer County Air Pollution Control Dis	05/11/2016	Regular	0.00	1,082.68	49980
02208	Placer County Environmental Health	05/11/2016	Regular	0.00	12,400.00	49981
02207	Placer County Facility Services	05/11/2016	Regular	0.00	2,737.07	49982
02210	Placer County Water Agency	05/11/2016	Regular	0.00	69,350.00	49983
03150	PROFESSIONAL ID CARDS INC	05/11/2016	Regular	0.00	11.45	49984
02283	Recology Auburn Placer	05/11/2016	Regular	0.00	640.70	49985
03373	Renninger Family Trust	05/11/2016	Regular	0.00	123.69	49986

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
02223	Rexel Inc (Platt - Rancho Cordova)	05/11/2016	Regular	0.00	776.48	49987
02293	RFI Enterprises, Inc	05/11/2016	Regular	0.00	44.00	49988
02328	Rocklin Windustrial Co	05/11/2016	Regular	0.00	2,714.69	49989
02366	Sac Val Janitorial Supply Sales & Servic	05/11/2016	Regular	0.00	468.27	49990
02357	Sacramento Municipal Utility District (	05/11/2016	Regular	0.00	7,317.34	49991
03358	Sacramento Valley Wildlife Services	05/11/2016	Regular	0.00	400.00	49992
02396	SAGE Engineerings, Inc.	05/11/2016	Regular	0.00	3,133.75	49993
02407	Scheetz Welding Service Inc.	05/11/2016	Regular	0.00	707.40	49994
02446	Sierra Chemical Co	05/11/2016	Regular	0.00	3,664.57	49995
02452	Sierra National Construction, Inc.	05/11/2016	Regular	0.00	8,701.29	49996
03086	Sierra Saw Power Equipment	05/11/2016	Regular	0.00	19.40	49997
03375	Sorensen, Elishia	05/11/2016	Regular	0.00	200.00	49998
03309	Sorum, Mark	05/11/2016	Regular	0.00	6,500.00	49999
01854	Spencer, Jerry	05/11/2016	Regular	0.00	200.00	50000
01492	State of California, Department of Wa	05/11/2016	Regular	0.00	3,590.00	50001
02514	State Water Resources Control Board	05/11/2016	Regular	0.00	7,256.79	50002
03359	Superior Equipment Repair, Inc.	05/11/2016	Regular	0.00	605.53	50003
01411	SureWest Telephone	05/11/2016	Regular	0.00	1,603.35	50004
02544	Syblon Reid	05/11/2016	Regular	0.00	18,134.20	50005
02580	The Eidam Corporation	05/11/2016	Regular	0.00	3,396.25	50006
02638	Tyler Technologies, Inc.	05/11/2016	Regular	0.00	1,100.00	50007
02668	U.S. Postal Service	05/11/2016	Regular	0.00	130.00	50008
03368	Uding, Tiana	05/11/2016	Regular	0.00	150.00	50009
03284	Vavrinek, Trine, Day & Co, LLP	05/11/2016	Regular	0.00	2,430.00	50010
02690	Verizon Wireless	05/11/2016	Regular	0.00	430.72	50011
02700	Viking Shred LLC	05/11/2016	Regular	0.00	50.00	50012
01687	W. W. Grainger, Inc.	05/11/2016	Regular	0.00	325.97	50013
03369	Whitlow, Kellie	05/11/2016	Regular	0.00	100.00	50014
01048	Airgas, Inc	05/11/2016	EFT	0.00	136.49	404498
01081	American Messaging Services, LLC	05/11/2016	EFT	0.00	14.06	404499
01898	Association of California Water Agenci	05/11/2016	EFT	0.00	17,876.00	404500
03202	CD-Data Inc	05/11/2016	EFT	0.00	1,199.00	404501
01330	CDW Government LLC	05/11/2016	EFT	0.00	273.25	404502
03221	Chemtrade Chemicals Corporation	05/11/2016	EFT	0.00	11,939.90	404503
01378	Clark Pest Control	05/11/2016	EFT	0.00	1,788.00	404504
01416	Corix Water Products (US) Inc.	05/11/2016	EFT	0.00	692.30	404505
01521	DataProse, LLC	05/11/2016	EFT	0.00	20,855.08	404506
01486	Department of Energy	05/11/2016	EFT	0.00	9,997.32	404507
01532	E&M Electric & Machinery, Inc.	05/11/2016	EFT	0.00	2,349.94	404508
01589	Eurofins Eaton Analytical, Inc	05/11/2016	EFT	0.00	1,968.00	404509
01790	Industrial Safety Supply Corp of Califor	05/11/2016	EFT	0.00	684.39	404510
01917	Kennedy/Jenks Consultants, Inc.	05/11/2016	EFT	0.00	84,317.60	404511
02027	Mcmaster-Carr Supply Company	05/11/2016	EFT	0.00	340.16	404512
01472	Mel Dawson, Inc.	05/11/2016	EFT	0.00	3,402.74	404513
02079	MWH Americas, Inc.	05/11/2016	EFT	0.00	27,172.48	404514
02286	Regional Water Authority	05/11/2016	EFT	0.00	529.61	404515
03220	Solenis LLP	05/11/2016	EFT	0.00	3,676.50	404516
02504	Starr Consulting	05/11/2016	EFT	0.00	2,380.00	404517
02592	The Reed Group, Inc.	05/11/2016	EFT	0.00	9,407.50	404518
02162	Tobin, Pamela	05/11/2016	EFT	0.00	19.44	404519
02710	Wageworks, Inc	05/11/2016	EFT	0.00	98.00	404520

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
02730	Western Area Power Admin	05/11/2016	EFT	0.00	6,583.22	404521

Bank Code APBNK Summary

Payment Type	Payable Count	Payment Count	Discount	Payment
Regular Checks	126	81	0.00	285,551.13
Manual Checks	0	0	0.00	0.00
Voided Checks	0	1	0.00	0.00
Bank Drafts	0	0	0.00	0.00
EFT's	45	24	0.00	207,700.98
	171	**106**	**0.00**	**493,252.11**

Fund Summary

Fund	Name	Period	Amount
999	INTERCOMPANY	5/2016	493,252.11
			493,252.11

STAFF REPORT

To: Board of Directors

From: Mike Stemple – Purchasing Agent

Date: May 11, 2016

Subject: Authorization to Purchase Additional Wholesale Water Treatment Chemicals

RECOMMENDED ACTION
Staff recommends authorizing the purchase of an additional 147.93 tons (6 truckloads) of Clarion A402P, liquid aluminum w/polymers blend, a water treatment chemical, at a total cost of $25,000.

BACKGROUND
Clarion A402P is a chemical used to process out sediments from the water. On June 10, 2015, the Board of Directors approved the purchase of 790 tons of Clarion, in the amount of $133,510 for use during Fiscal Year 2015-2016. The amount needed is largely dependent upon water quality, which can be affected by the volume of water in the lake. Lower lake levels resulted in reduced raw water quality causing the District to use more Clarion than originally anticipated. An additional purchase of approximately 148 tons is needed for this fiscal year.

In accordance with Ordinance 4000, Appendix B, the purchase of Clarion was publicly bid and the initial purchase of 790 tons from the lowest bidder; Chemtrade Chemicals was approved by motion of the Board on June 10, 2015. The bid set the price per ton and is good for the entire fiscal year. As such, the District does not need to initiate a separate bidding process for this additional procurement.

Per Ordinance 2000, the General Manager can authorize purchases of goods up to $15,000. Since this increase is in excess of $15,000, Board authorization is required. Staff is requesting authorization for the purchase of an additional 147.93 tons of Clarion A402P in the amount $25,000. This will ensure Clarion A402P needs are met for the District through June 30, 2016. There is sufficient room in the budget to accommodate this recommendation.

STAFF REPORT

To: Board of Directors

From: Mike Stemple – Purchasing Agent

Date: May 11, 2016

Subject: Authorization to Purchase a New Vacuum Trailer

RECOMMENDED ACTION
Staff recommends authorizing the purchase of a new Vacuum Trailer from the lowest bidder, RDO Equipment Co. in the amount of $80,175.

BACKGROUND
The vacuum equipment serves a key role for Field Services and the District by automating manual labor activities. This equipment provides time savings and efficiencies with its many capabilities. The equipment's primary function is to suck up water and debris and serve a vital role as excavator & potholer in critical areas.

The District needs to replace it's eleven year old "50HP-Ditch Witch FX60" (E#50). The existing equipment is wearing out and has mechanical issues. Additionally, due to the age of the engine, the vacuum is environmentally non-compliant to the EPA – Clean diesel requirement & State of California Air Resources Board "CARB"- particulate matter emissions. As a result of non-compliance, as of 2017 use of the existing equipment will be limited to a maximum of 100 total hours of annual operation. The District currently operates this equipment well over 124 hours annually for routine use. This limitation would hamper our ability to effectively utilize this equipment for its intended purpose.

Per Appendix B of Ordinance 4000, purchases in excess $15,000 require bidding. District staff has researched replacing the equipment and after the evaluation of our existing equipment developed a specification for a new vacuum trailer. Utilizing this specification the District went out to bid, and received three bid responses for the equipment. RDO Equipment Co. provided the lowest bid with a delivered price of $80,175. The next closest bidder was 7% higher and the third bidder 11% higher.

#	Company Name	Location	Bid Total	% Higher
1	**RDO Equipment Co.**	**Sacramento, CA**	**$ 80,175**	**Low Bidder**
2	Vac-Tron	Okahumpka, FL	$ 86,048	+7%
3	Ditch Witch	Perry, OK	$ 89,148	+11%

RDO Equipment Co. is a local Sacramento company. The Vacuum Trailer model VX50Boom as proposed by RDO meets the requirements of the Districts specification. Staff is confident this equipment is the best value at the lowest cost. The Vacuum Trailer is in the CIP budget with a budgeted amount of $92,500.

Per Ordinance 2000, the General Manager can authorize the purchase of goods for up to $15,000. Since the bid is in excess of $15,000 Board authorization is required.

Income Statement

San Juan Water District, CA

Group Summary

For Fiscal: 2015-2016 Period Ending: 03/31/2016

Account	Original Total Budget	Current Total Budget	MTD Activity	YTD Activity	Budget Remaining
Fund: 010 - WHOLESALE					
Type: 4000 - Operating Revenues					
41000 - Water Sales	6,325,986.00	6,325,986.00	499,478.01	4,897,508.74	1,428,477.26
43000 - Rebate	385,000.00	385,000.00	18,271.80	248,690.61	136,309.39
45000 - Other Operating Revenue	171,001.00	171,001.00	1,895.84	111,016.79	59,984.21
Type: 4000 - Operating Revenues Total:	**6,881,987.00**	**6,881,987.00**	**519,645.65**	**5,257,216.14**	**1,624,770.86**
Type: 5000 - Operating Expenses					
51000 - Salaries and Benefits	3,644,963.59	3,644,963.59	229,963.47	2,139,868.84	1,505,094.75
53000 - Source of Supply	598,846.00	598,846.00	47,817.20	237,227.75	361,618.25
54000 - Professional Services	535,240.00	759,240.00	63,662.37	377,951.04	381,288.96
55000 - Maintenance	295,814.00	295,814.00	38,948.55	167,157.95	128,656.05
57000 - Materials and Supplies	371,060.00	370,560.00	32,333.33	269,204.97	101,355.03
58000 - Public Outreach	105,315.00	105,315.00	12,922.48	100,153.67	5,161.33
59000 - Other Operating Expenses	333,795.00	334,295.00	10,076.08	198,396.20	135,898.80
Type: 5000 - Operating Expenses Total:	**5,885,033.59**	**6,109,033.59**	**435,723.48**	**3,489,960.42**	**2,619,073.17**
Type: 7000 - Non-Operating Revenues					
42000 - Taxes & Assessments	995,000.00	995,000.00	0.00	566,354.22	428,645.78
44500 - Capital Contributions - Revenue	568,350.00	568,350.00	0.00	844,366.74	-276,016.74
49000 - Other Non-Operating Revenue	221,054.00	221,054.00	18,860.90	235,372.33	-14,318.33
Type: 7000 - Non-Operating Revenues Total:	**1,784,404.00**	**1,784,404.00**	**18,860.90**	**1,646,093.29**	**138,310.71**
Type: 8000 - Non-Operating Expenses					
52000 - Debt Service Expense	1,458,019.00	1,458,019.00	0.00	1,160,787.79	297,231.21
63000 - Contributions to Others	0.00	0.00	0.00	2,178,540.20	-2,178,540.20
69000 - Other Non-Operating Expenses	46,916.00	46,916.00	0.00	2,393.50	44,522.50
Type: 8000 - Non-Operating Expenses Total:	**1,504,935.00**	**1,504,935.00**	**0.00**	**3,341,721.49**	**-1,836,786.49**
Fund: 010 - WHOLESALE Surplus (Deficit):	**1,276,422.41**	**1,052,422.41**	**102,783.07**	**71,627.52**	**980,794.89**
Fund: 050 - RETAIL					
Type: 4000 - Operating Revenues					
41000 - Water Sales	8,695,800.00	8,695,800.00	-488.48	4,878,624.91	3,817,175.09
45000 - Other Operating Revenue	121,500.00	121,500.00	23,195.55	135,642.63	-14,142.63
Type: 4000 - Operating Revenues Total:	**8,817,300.00**	**8,817,300.00**	**22,707.07**	**5,014,267.54**	**3,803,032.46**
Type: 5000 - Operating Expenses					
51000 - Salaries and Benefits	4,064,400.00	4,064,400.00	326,880.59	3,113,516.28	950,883.72
53000 - Source of Supply	2,050,900.00	2,050,900.00	111,515.00	1,864,948.48	185,951.52
54000 - Professional Services	851,100.00	1,640,100.00	40,883.49	317,014.42	1,323,085.58
55000 - Maintenance	344,000.00	344,000.00	26,801.47	174,741.09	169,258.91
56000 - Utilities	256,700.00	256,700.00	6,894.74	142,036.67	114,663.33
57000 - Materials and Supplies	117,100.00	117,100.00	11,304.19	140,273.86	-23,173.86
58000 - Public Outreach	64,100.00	64,100.00	5,285.00	49,421.89	14,678.11
59000 - Other Operating Expenses	470,700.00	470,700.00	16,726.19	314,420.58	156,279.42
Type: 5000 - Operating Expenses Total:	**8,219,000.00**	**9,008,000.00**	**546,290.67**	**6,116,373.27**	**2,891,626.73**
Type: 7000 - Non-Operating Revenues					
42000 - Taxes & Assessments	948,000.00	948,000.00	0.00	566,354.23	381,645.77
44000 - Connection Fees	350,000.00	350,000.00	44,730.00	400,895.18	-50,895.18
44500 - Capital Contributions - Revenue	0.00	0.00	0.00	-174,242.52	174,242.52
49000 - Other Non-Operating Revenue	6,000.00	6,000.00	16,175.96	148,568.45	-142,568.45
Type: 7000 - Non-Operating Revenues Total:	**1,304,000.00**	**1,304,000.00**	**60,905.96**	**941,575.34**	**362,424.66**
Type: 8000 - Non-Operating Expenses					
52000 - Debt Service Expense	1,186,200.00	1,186,200.00	0.00	647,093.00	539,107.00
69000 - Other Non-Operating Expenses	3,000.00	3,000.00	0.00	2,358.50	641.50

Account	Original Total Budget	Current Total Budget	MTD Activity	YTD Activity	Budget Remaining
Type: 8000 - Non-Operating Expenses Total:	**1,189,200.00**	**1,189,200.00**	**0.00**	**649,451.50**	**539,748.50**
Fund: 050 - RETAIL Surplus (Deficit):	**713,100.00**	**-75,900.00**	**-462,677.64**	**-809,981.89**	**734,081.89**
Total Surplus (Deficit):	**1,989,522.41**	**976,522.41**	**-359,894.57**	**-738,354.37**	**1,714,876.78**

Fund Summary

Fund	Original Total Budget	Current Total Budget	MTD Activity	YTD Activity	Budget Remaining
010 - WHOLESALE	1,276,422.41	1,052,422.41	102,783.07	71,627.52	980,794.89
050 - RETAIL	713,100.00	-75,900.00	-462,677.64	-809,981.89	734,081.89
Total Surplus (Deficit):	**1,989,522.41**	**976,522.41**	**-359,894.57**	**-738,354.37**	**2,629,521.53**

San Juan Water District, CA

Project Activity vs Budget Report

By Project Number

Date Range: 07/01/2015 - 03/31/2016

Project Number	Project Name	Group	Project Type	Status
061700	Redundant Folsom Outlet/USBR	Wholesale - General CIP Reserve	Transmission and Meter..	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
0617001000	Labor - CAP	0.00	0.00	47,548.26	0.00	47,548.26	-47,548.26
0617002000	Materials - CAP	0.00	0.00	4,611.81	0.00	4,611.81	-4,611.81
0617003000	OH - CAP	0.00	0.00	10,748.17	0.00	10,748.17	-10,748.17
0617005000	Services - CAP	0.00	0.00	7,404,917.30	0.00	7,404,917.30	-7,404,917.30
0617009999	Close	0.00	0.00	-7,467,825.54	0.00	-7,467,825.54	7,467,825.54
	Total Expenses:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	061700 Total:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Project Number	Project Name	Group	Project Type	Status
081845	FO 40-Inch T-Main Rehab	Construction	Transmission and Meter..	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
0818459999	Close	0.00	0.00	3,118,700.38	0.00	3,118,700.38	-3,118,700.38
	Total Expenses:	**0.00**	**0.00**	**3,118,700.38**	**0.00**	**3,118,700.38**	**-3,118,700.38**
	081845 Total:	**0.00**	**0.00**	**3,118,700.38**	**0.00**	**3,118,700.38**	**-3,118,700.38**

Project Number	Project Name	Group	Project Type	Status
081848	Wholesale Meters	Construction	Transmission and Meter..	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
0818481000	Labor - CAP	0.00	0.00	280,613.21	0.00	280,613.21	-280,613.21
0818482000	Materials - CAP	0.00	0.00	372,912.19	0.00	372,912.19	-372,912.19
0818483000	OH - CAP	0.00	0.00	112,728.74	0.00	112,728.74	-112,728.74
0818484000	Other - CAP	0.00	0.00	325.98	0.00	325.98	-325.98
0818485000	Services - CAP	0.00	0.00	4,810,191.98	0.00	4,810,191.98	-4,810,191.98
0818489999	Close	0.00	0.00	-5,576,772.10	0.00	-5,576,772.10	5,576,772.10
	Total Expenses:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	081848 Total:	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Project Number	Project Name	Group	Project Type	Status
101919	Design & Construct TW&CTBP	Planning	Water Treatment Plant	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1019199999	Close	0.00	0.00	5,070,353.01	0.00	5,070,353.01	-5,070,353.01
	Total Expenses:	**0.00**	**0.00**	**5,070,353.01**	**0.00**	**5,070,353.01**	**-5,070,353.01**
	101919 Total:	**0.00**	**0.00**	**5,070,353.01**	**0.00**	**5,070,353.01**	**-5,070,353.01**

Project Number	Project Name	Group	Project Type	Status
101925	Auburn Folsom Rd North	Retail - General CIP Reserve	Distribution System	Active

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1019251000	Labor - CAP	0.00	0.00	129,915.65	1,426.77	131,342.42	-131,342.42
1019252000	Materials - CAP	0.00	0.00	609,070.73	1,376.81	610,447.54	-610,447.54
1019253000	OH - CAP	0.00	0.00	101,952.45	0.00	101,952.45	-101,952.45
1019255000	Services - CAP	0.00	0.00	17,387.10	675,133.06	692,520.16	-692,520.16
	Total Expenses:	**0.00**	**0.00**	**858,325.93**	**677,936.64**	**1,536,262.57**	**-1,536,262.57**
	101925 Total:	**0.00**	**0.00**	**858,325.93**	**677,936.64**	**1,536,262.57**	**-1,536,262.57**

Project Number	Project Name	Group	Project Type	Status
121961	Erwin Ave Main Replacement	Planning	Distribution System	Active

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1219611000	Labor - CAP	0.00	0.00	14,112.51	1,045.20	15,157.71	-15,157.71
1219612000	Materials - CAP	0.00	0.00	127.93	0.00	127.93	-127.93
1219613000	OH - CAP	0.00	0.00	1,156.27	0.00	1,156.27	-1,156.27
1219615000	Services - CAP	0.00	0.00	119,324.43	74,254.25	193,578.68	-193,578.68
1219616000	Retention - CAP	0.00	0.00	-5,774.75	9,007.20	3,232.45	-3,232.45
	Total Expenses:	**0.00**	**0.00**	**128,946.39**	**84,306.65**	**213,253.04**	**-213,253.04**
	121961 Total:	**0.00**	**0.00**	**128,946.39**	**84,306.65**	**213,253.04**	**-213,253.04**

Project Number	Project Name	Group	Project Type	Status
121962	Peerless Ave Main Replacement	Planning	Distribution System	Active

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1219621000	Labor - CAP	0.00	0.00	17,327.14	172.81	17,499.95	-17,499.95
1219622000	Materials - CAP	0.00	0.00	124.94	0.00	124.94	-124.94
1219623000	OH - CAP	0.00	0.00	1,098.34	0.00	1,098.34	-1,098.34
1219625000	Services - CAP	0.00	0.00	284,642.27	42,310.84	326,953.11	-326,953.11
1219626000	Retention - CAP	0.00	0.00	-13,582.50	15,289.41	1,706.91	-1,706.91
	Total Expenses:	**0.00**	**0.00**	**289,610.19**	**57,773.06**	**347,383.25**	**-347,383.25**
	121962 Total:	**0.00**	**0.00**	**289,610.19**	**57,773.06**	**347,383.25**	**-347,383.25**

Project Number	Project Name	Group	Project Type	Status
121963	Intersection of Sierra & Douglas	Planning	Distribution System	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1219631000	Labor - CAP	0.00	0.00	3,654.83	0.00	3,654.83	-3,654.83
1219633000	OH - CAP	0.00	0.00	864.37	0.00	864.37	-864.37
1219635000	Services - CAP	0.00	0.00	2,065.40	0.00	2,065.40	-2,065.40
	Total Expenses:	**0.00**	**0.00**	**6,584.60**	**0.00**	**6,584.60**	**-6,584.60**
	121963 Total:	**0.00**	**0.00**	**6,584.60**	**0.00**	**6,584.60**	**-6,584.60**

Project Number	Project Name	Group	Project Type	Status
121964	Install PRS Between Lower Granite Bay ...	Planning	Distribution System	Complete

Project Number	Project Name	Group	Project Type	Status					
	Expenses				Date Range	Beginning		Ending	Budget
	Account Key	Account Name	Total Budget		Budget	Balance	Total Activity	Balance	Remaining
	1219641000	Labor - CAP	0.00		0.00	66.35	0.00	66.35	-66.35
	1219643000	OH - CAP	0.00		0.00	14.12	0.00	14.12	-14.12
		Total Expenses:	**0.00**		**0.00**	**80.47**	**0.00**	**80.47**	**-80.47**
		121964 Total:	**0.00**		**0.00**	**80.47**	**0.00**	**80.47**	**-80.47**
121965	Install PRS Between ARC & SZONE	Planning	Distribution System	Active					
	Expenses				Date Range	Beginning		Ending	Budget
	Account Key	Account Name	Total Budget		Budget	Balance	Total Activity	Balance	Remaining
	1219651000	Labor - CAP	0.00		0.00	2,968.69	0.00	2,968.69	-2,968.69
	1219653000	OH - CAP	0.00		0.00	126.34	0.00	126.34	-126.34
		Total Expenses:	**0.00**		**0.00**	**3,095.03**	**0.00**	**3,095.03**	**-3,095.03**
		121965 Total:	**0.00**		**0.00**	**3,095.03**	**0.00**	**3,095.03**	**-3,095.03**
121966	Design and Construct Lower Granite Bay..	Retail - General CIP Reserve	Pump Stations	Active					
	Expenses				Date Range	Beginning		Ending	Budget
	Account Key	Account Name	Total Budget		Budget	Balance	Total Activity	Balance	Remaining
	1219661000	Labor - CAP	0.00		0.00	62,896.04	2,617.46	65,513.50	-65,513.50
	1219662000	Materials - CAP	0.00		0.00	32,601.40	23.31	32,624.71	-32,624.71
	1219663000	OH - CAP	0.00		0.00	2,395.14	0.00	2,395.14	-2,395.14
	1219665000	Services - CAP	2,975,960.00		0.00	3,235,609.97	433,839.89	3,669,449.86	-693,489.86
	1219666000	Retention - CAP	0.00		0.00	-158,296.21	-5,588.84	-163,885.05	163,885.05
		Total Expenses:	**2,975,960.00**		**0.00**	**3,175,206.34**	**430,891.82**	**3,606,098.16**	**-630,138.16**
		121966 Total:	**2,975,960.00**		**0.00**	**3,175,206.34**	**430,891.82**	**3,606,098.16**	**-630,138.16**
121967	Design and Construct Rehab Upper Gran..	Construction	Pump Stations	Active					
	Expenses				Date Range	Beginning		Ending	Budget
	Account Key	Account Name	Total Budget		Budget	Balance	Total Activity	Balance	Remaining
	1219671000	Labor - CAP	0.00		0.00	39,552.00	1,287.92	40,839.92	-40,839.92
	1219672000	Materials - CAP	0.00		0.00	30,406.68	4,942.85	35,349.53	-35,349.53
	1219673000	OH - CAP	0.00		0.00	2,446.42	0.00	2,446.42	-2,446.42
	1219675000	Services - CAP	1,620,040.00		0.00	602,370.83	908,149.58	1,510,520.41	109,519.59
	1219676000	Retention - CAP	0.00		0.00	-28,760.02	-40,512.93	-69,272.95	69,272.95
		Total Expenses:	**1,620,040.00**		**0.00**	**646,015.91**	**873,867.42**	**1,519,883.33**	**100,156.67**
		121967 Total:	**1,620,040.00**		**0.00**	**646,015.91**	**873,867.42**	**1,519,883.33**	**100,156.67**
121985	LGA ERP Supply Proj Phase 1	Planning	Distribution System	Complete					
	Expenses				Date Range	Beginning		Ending	Budget
	Account Key	Account Name	Total Budget		Budget	Balance	Total Activity	Balance	Remaining
	1219851000	Labor - CAP	0.00		0.00	45,918.34	0.00	45,918.34	-45,918.34
	1219852000	Materials - CAP	0.00		0.00	34.76	0.00	34.76	-34.76

Project Number	Project Name	Group	Project Type	Status				
1219853000	OH - CAP		0.00	0.00	75,497.04	0.00	75,497.04	-75,497.04
1219855000	Services - CAP		0.00	0.00	457,205.96	0.00	457,205.96	-457,205.96
1219859999	Close		0.00	0.00	-549,026.69	0.00	-549,026.69	549,026.69
		Total Expenses:	**0.00**	**0.00**	**29,629.41**	**0.00**	**29,629.41**	**-29,629.41**
		121985 Total:	**0.00**	**0.00**	**29,629.41**	**0.00**	**29,629.41**	**-29,629.41**

121986	Fair Oaks 40 Pipeline ARC Rep	Construction	Transmission and Meter..	Complete				
Expenses								
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1219869999	Close		0.00	0.00	886,257.49	0.00	886,257.49	-886,257.49
		Total Expenses:	**0.00**	**0.00**	**886,257.49**	**0.00**	**886,257.49**	**-886,257.49**
		121986 Total:	**0.00**	**0.00**	**886,257.49**	**0.00**	**886,257.49**	**-886,257.49**

121987	Fair Oaks 40 Cathodic Prot Pro	Construction	Transmission and Meter..	Complete				
Expenses								
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1219871000	Labor - CAP		0.00	0.00	337,803.80	0.00	337,803.80	-337,803.80
		Total Expenses:	**0.00**	**0.00**	**337,803.80**	**0.00**	**337,803.80**	**-337,803.80**
		121987 Total:	**0.00**	**0.00**	**337,803.80**	**0.00**	**337,803.80**	**-337,803.80**

125992	USBR Low Lake Level Pump Station	Construction	Pump Stations	Complete				
Expenses								
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1259921500	Labor - NC		0.00	0.00	363.57	0.00	363.57	-363.57
1259923500	OH - NC		0.00	0.00	54.53	0.00	54.53	-54.53
		Total Expenses:	**0.00**	**0.00**	**418.10**	**0.00**	**418.10**	**-418.10**
		125992 Total:	**0.00**	**0.00**	**418.10**	**0.00**	**418.10**	**-418.10**

131009	Telegraph Ave Main Replacement	Construction	Distribution System	Active				
Expenses								
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1310091000	Labor - CAP		0.00	0.00	12,036.49	1,824.50	13,860.99	-13,860.99
1310092000	Materials - CAP		0.00	0.00	0.00	154.94	154.94	-154.94
1310093000	OH - CAP		0.00	0.00	1,105.49	0.00	1,105.49	-1,105.49
1310095000	Services - CAP		0.00	0.00	3,070.84	225,821.09	228,891.93	-228,891.93
1310096000	Retention - CAP		0.00	0.00	0.00	10,285.93	10,285.93	-10,285.93
		Total Expenses:	**0.00**	**0.00**	**16,212.82**	**238,086.46**	**254,299.28**	**-254,299.28**
		131009 Total:	**0.00**	**0.00**	**16,212.82**	**238,086.46**	**254,299.28**	**-254,299.28**

131010	Oak Ave 12-inch Main Replacement	Construction	Distribution System	Active				
Expenses								
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**

Project Number	Project Name	Group	Project Type	Status				
1310101000	Labor - CAP		0.00	0.00	13,002.21	1,862.68	14,864.89	-14,864.89
1310102000	Materials - CAP		0.00	0.00	430.57	268.07	698.64	-698.64
1310103000	OH - CAP		0.00	0.00	1,274.32	0.00	1,274.32	-1,274.32
1310105000	Services - CAP		0.00	0.00	104,213.44	126,587.49	230,800.93	-230,800.93
1310106000	Retention - CAP		0.00	0.00	-4,972.25	10,175.31	5,203.06	-5,203.06
		Total Expenses:	**0.00**	**0.00**	**113,948.29**	**138,893.55**	**252,841.84**	**-252,841.84**
		131010 Total:	**0.00**	**0.00**	**113,948.29**	**138,893.55**	**252,841.84**	**-252,841.84**

135000	Security System Design	Planning	Miscellaneous	Active				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1350001500	Labor - NC		0.00		0.00	6,336.96	127.32	6,464.28	-6,464.28
1350002500	Materials - NC		0.00		0.00	10,905.37	0.00	10,905.37	-10,905.37
1350003500	OH - NC		0.00		0.00	11,424.97	0.00	11,424.97	-11,424.97
1350005500	Services - NC		0.00		0.00	82,029.21	0.00	82,029.21	-82,029.21
		Total Expenses:	**0.00**		**0.00**	**110,696.51**	**127.32**	**110,823.83**	**-110,823.83**
		135000 Total:	**0.00**		**0.00**	**110,696.51**	**127.32**	**110,823.83**	**-110,823.83**

135021	Water Supply Reliability - Barton Road	Retail - General CIP Reserve	Distribution System	Suspended				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1350211500	Labor - NC		0.00		0.00	16,425.00	0.00	16,425.00	-16,425.00
1350212500	Materials - NC		0.00		0.00	12,020.00	0.00	12,020.00	-12,020.00
1350215500	Services - NC		0.00		0.00	-28,445.00	0.00	-28,445.00	28,445.00
		Total Expenses:	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
		135021 Total:	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

135022	SSWD Pump Back Evaluation - Expense ...	Wholesale - General CIP Reserve	Pump Stations	Complete				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1350221500	Labor - NC		0.00		0.00	1,199.22	0.00	1,199.22	-1,199.22
1350223500	OH - NC		0.00		0.00	250.43	0.00	250.43	-250.43
		Total Expenses:	**0.00**		**0.00**	**1,449.65**	**0.00**	**1,449.65**	**-1,449.65**
		135022 Total:	**0.00**		**0.00**	**1,449.65**	**0.00**	**1,449.65**	**-1,449.65**

141034	FO 40 Pipeline Relining	Wholesale - General CIP Reserve	Transmission and Meter..	Complete				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1410341000	Labor - CAP		0.00		0.00	1,148.49	0.00	1,148.49	-1,148.49
1410341500	Labor - NC		0.00		0.00	-375.07	0.00	-375.07	375.07
1410343000	OH - CAP		0.00		0.00	57.43	0.00	57.43	-57.43
		Total Expenses:	**0.00**		**0.00**	**830.85**	**0.00**	**830.85**	**-830.85**

Project Number	Project Name	Group	Project Type	Status				
		141034 Total:	**0.00**	**0.00**	**830.85**	**0.00**	**830.85**	**-830.85**
141043	2014 Drought Response - SSWD Antelo...	Wholesale - General CIP Reserve	Pump Stations	Active				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1410431000	Labor - CAP		0.00		0.00	0.00	456.81	456.81	-456.81
1410434500	Other - NC		0.00		0.00	710,602.00	2,178,540.20	2,889,142.20	-2,889,142.20
1410435000	Services - CAP		50,000.00		0.00	0.00	0.00	0.00	50,000.00
1410435500	Services - Not Billable to SSWD		0.00		0.00	0.00	8,915.00	8,915.00	-8,915.00
1450431500	Labor - NC		0.00		0.00	7,321.43	0.00	7,321.43	-7,321.43
		Total Expenses:	**50,000.00**		**0.00**	**717,923.43**	**2,187,912.01**	**2,905,835.44**	**-2,855,835.44**
		141043 Total:	**50,000.00**		**0.00**	**717,923.43**	**2,187,912.01**	**2,905,835.44**	**-2,855,835.44**
141045	2014 Drought Response Plan - Barton Rd..	Retail - General CIP Reserve	Transmission and Meter..	Active				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1410451000	Labor - CAP		0.00		0.00	0.00	1,472.70	1,472.70	-1,472.70
1410452000	Materials - CAP		0.00		0.00	306.88	0.00	306.88	-306.88
1410454000	Other - CAP		0.00		0.00	10,736.59	0.00	10,736.59	-10,736.59
1410455000	Services - CAP		0.00		0.00	1,224,293.68	249,831.29	1,474,124.97	-1,474,124.97
1410456000	Retention - CAP		0.00		0.00	-56,078.77	56,078.77	0.00	0.00
		Total Expenses:	**0.00**		**0.00**	**1,179,258.38**	**307,382.76**	**1,486,641.14**	**-1,486,641.14**
		141045 Total:	**0.00**		**0.00**	**1,179,258.38**	**307,382.76**	**1,486,641.14**	**-1,486,641.14**
141048	Douglas Steel Main Replacement	Construction	Distribution System	Active				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1410481000	Labor - NC		0.00		0.00	18,525.99	137.07	18,663.06	-18,663.06
1410482000	Materials - CAP		0.00		0.00	2,736.36	120.51	2,856.87	-2,856.87
1410485000	Services - CAP		0.00		0.00	169,241.91	21,303.42	190,545.33	-190,545.33
1410486000	Retention - CAP		0.00		0.00	-8,039.00	9,073.18	1,034.18	-1,034.18
		Total Expenses:	**0.00**		**0.00**	**182,465.26**	**30,634.18**	**213,099.44**	**-213,099.44**
		141048 Total:	**0.00**		**0.00**	**182,465.26**	**30,634.18**	**213,099.44**	**-213,099.44**
141999	Tyler Software Purchase and Implemen...	Information Technology	Information Technology..	Active				
Expenses					**Date Range**	**Beginning**		**Ending**	**Budget**
Account Key	**Account Name**		**Total Budget**		**Budget**	**Balance**	**Total Activity**	**Balance**	**Remaining**
1419995000	Services - CAP		0.00		0.00	88,567.00	9,537.50	98,104.50	-98,104.50
1419995500	Services - NC		0.00		0.00	35,705.00	9,331.07	45,036.07	-45,036.07
		Total Expenses:	**0.00**		**0.00**	**124,272.00**	**18,868.57**	**143,140.57**	**-143,140.57**
		141999 Total:	**0.00**		**0.00**	**124,272.00**	**18,868.57**	**143,140.57**	**-143,140.57**
145041	Park Place & Auburn Folsom Rd PSV Stat..	Construction	Distribution System	Inactive				

Project Number	Project Name	Group	Project Type	Status

Expenses

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1450411500	Labor - NC	0.00	0.00	10,315.74	0.00	10,315.74	-10,315.74
1450412500	Materials - NC	0.00	0.00	6,072.54	0.00	6,072.54	-6,072.54
1450415500	Services - NC	0.00	0.00	18.40	0.00	18.40	-18.40
	Total Expenses:	**0.00**	**0.00**	**16,406.68**	**0.00**	**16,406.68**	**-16,406.68**
	145041 Total:	**0.00**	**0.00**	**16,406.68**	**0.00**	**16,406.68**	**-16,406.68**

145044 Pressure Control Valve Station - Drought.. Planning Transmission and Meter.. Suspended

Expenses

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1450441500	Labor - NC	0.00	0.00	2,908.23	826.77	3,735.00	-3,735.00
1450445500	Services - NC	0.00	0.00	0.00	540.00	540.00	-540.00
	Total Expenses:	**0.00**	**0.00**	**2,908.23**	**1,366.77**	**4,275.00**	**-4,275.00**
	145044 Total:	**0.00**	**0.00**	**2,908.23**	**1,366.77**	**4,275.00**	**-4,275.00**

145045 2014 Drought Response Plan - Barton Rd.. Planning Transmission and Meter.. Inactive

Expenses

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1450451500	Labor - NC	0.00	0.00	76,538.08	0.00	76,538.08	-76,538.08
1450453500	OH - NC	0.00	0.00	920.14	0.00	920.14	-920.14
	Total Expenses:	**0.00**	**0.00**	**77,458.22**	**0.00**	**77,458.22**	**-77,458.22**
	145045 Total:	**0.00**	**0.00**	**77,458.22**	**0.00**	**77,458.22**	**-77,458.22**

148030 5680/56XX Cavitt Stallman Rd New Serv... Construction xBillable Active

Expenses

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1480301000	Labor - CAP	0.00	0.00	911.93	0.00	911.93	-911.93
1480302000	Materials - CAP	0.00	0.00	483.46	0.00	483.46	-483.46
1480303000	OH - CAP	0.00	0.00	275.66	0.00	275.66	-275.66
	Total Expenses:	**0.00**	**0.00**	**1,671.05**	**0.00**	**1,671.05**	**-1,671.05**
	148030 Total:	**0.00**	**0.00**	**1,671.05**	**0.00**	**1,671.05**	**-1,671.05**

148042 7150 Sierra Ponds Lane Construction xBillable Complete

Expenses

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1480422500	Materials - NC	0.00	0.00	129.28	0.00	129.28	-129.28
	Total Expenses:	**0.00**	**0.00**	**129.28**	**0.00**	**129.28**	**-129.28**
	148042 Total:	**0.00**	**0.00**	**129.28**	**0.00**	**129.28**	**-129.28**

151409 WaterSmart Software Implementation Information Technology Information Technology.. Active

Project Number	Project Name	Group	Project Type	Status

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514095000	Services - CAP	84,000.00	55,500.00	28,500.00	55,500.00	84,000.00	0.00
Total Expenses:		**84,000.00**	**55,500.00**	**28,500.00**	**55,500.00**	**84,000.00**	**0.00**
151409 Total:		**84,000.00**	**55,500.00**	**28,500.00**	**55,500.00**	**84,000.00**	**0.00**

Project Number	Project Name	Group	Project Type	Status
151411	Modular Furniture in Engineering	Wholesale - General CIP Reserve	Miscellaneous	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514112000	Materials - CAP	15,000.00	0.00	0.00	0.00	0.00	15,000.00
Total Expenses:		**15,000.00**	**0.00**	**0.00**	**0.00**	**0.00**	**15,000.00**
151411 Total:		**15,000.00**	**0.00**	**0.00**	**0.00**	**0.00**	**15,000.00**

Project Number	Project Name	Group	Project Type	Status
151412	Truck-mounted Valve Actuator	Construction	Water Treatment Plant	Active

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514122000	Materials - CAP	16,800.00	16,800.00	15,046.25	2,510.00	17,556.25	-756.25
Total Expenses:		**16,800.00**	**16,800.00**	**15,046.25**	**2,510.00**	**17,556.25**	**-756.25**
151412 Total:		**16,800.00**	**16,800.00**	**15,046.25**	**2,510.00**	**17,556.25**	**-756.25**

Project Number	Project Name	Group	Project Type	Status
151414	Replace WTP Programable Logic Control...	Maintenance	Water Treatment Plant	Complete

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514142000	Materials - CAP	15,000.00	0.00	5,734.82	0.00	5,734.82	9,265.18
Total Expenses:		**15,000.00**	**0.00**	**5,734.82**	**0.00**	**5,734.82**	**9,265.18**
151414 Total:		**15,000.00**	**0.00**	**5,734.82**	**0.00**	**5,734.82**	**9,265.18**

Project Number	Project Name	Group	Project Type	Status
151422	EIM Electric Accuator Replacement at Fi...	Maintenance	Water Treatment Plant	Active

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514222000	Materials - CAP	6,000.00	6,000.00	0.00	5,875.61	5,875.61	124.39
Total Expenses:		**6,000.00**	**6,000.00**	**0.00**	**5,875.61**	**5,875.61**	**124.39**
151422 Total:		**6,000.00**	**6,000.00**	**0.00**	**5,875.61**	**5,875.61**	**124.39**

Project Number	Project Name	Group	Project Type	Status
151423	South Basin Transfer Pump	Maintenance	Water Treatment Plant	Inactive

Expenses Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514232000	Materials - CAP	10,000.00	0.00	0.00	0.00	0.00	10,000.00
Total Expenses:		**10,000.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10,000.00**
151423 Total:		**10,000.00**	**0.00**	**0.00**	**0.00**	**0.00**	**10,000.00**

Project Number	Project Name	Group	Project Type	Status
151428	Sewer Lift Pump Replacement	Maintenance	Water Treatment Plant	Complete

Project Number	Project Name	Group	Project Type	Status
	Expenses			

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1514282000	Materials - CAP	7,000.00	0.00	4,020.18	0.00	4,020.18	2,979.82
	Total Expenses:	**7,000.00**	**0.00**	**4,020.18**	**0.00**	**4,020.18**	**2,979.82**
	151428 Total:	**7,000.00**	**0.00**	**4,020.18**	**0.00**	**4,020.18**	**2,979.82**

Project Number	Project Name	Group	Project Type	Status
161100	WTP Floc-Sed Basins 2015 Improvemen...	Wholesale - General CIP Reserve	Water Treatment Plant	Active
	Expenses			

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1611001000	Labor - CAP	0.00	0.00	0.00	2,708.03	2,708.03	-2,708.03
1611005000	Services - CAP	0.00	0.00	0.00	421,130.83	421,130.83	-421,130.83
	Total Expenses:	**0.00**	**0.00**	**0.00**	**423,838.86**	**423,838.86**	**-423,838.86**
	161100 Total:	**0.00**	**0.00**	**0.00**	**423,838.86**	**423,838.86**	**-423,838.86**

Project Number	Project Name	Group	Project Type	Status
161101	Security Improvements (WTP & Bacon)	Wholesale - General CIP Reserve	Buildings and Grounds	Active
	Expenses			

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1611012000	Materials - CAP	0.00	0.00	0.00	6,150.30	6,150.30	-6,150.30
1611015000	Services - CAP	0.00	0.00	0.00	4,977.75	4,977.75	-4,977.75
	Total Expenses:	**0.00**	**0.00**	**0.00**	**11,128.05**	**11,128.05**	**-11,128.05**
	161101 Total:	**0.00**	**0.00**	**0.00**	**11,128.05**	**11,128.05**	**-11,128.05**

Project Number	Project Name	Group	Project Type	Status
161102	Solar Improvement Project (NEMA Proj...	Wholesale - General CIP Reserve	Buildings and Grounds	Active
	Expenses			

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1611022000	Materials - CAP	0.00	0.00	0.00	1,730.00	1,730.00	-1,730.00
1611025000	Services - CAP	0.00	0.00	0.00	105,000.00	105,000.00	-105,000.00
	Total Expenses:	**0.00**	**0.00**	**0.00**	**106,730.00**	**106,730.00**	**-106,730.00**
	161102 Total:	**0.00**	**0.00**	**0.00**	**106,730.00**	**106,730.00**	**-106,730.00**

Project Number	Project Name	Group	Project Type	Status
161103	Control Valve Stations Water Supply Rel...	Wholesale - General CIP Reserve	Transmission and Meter..	Active
	Expenses			

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
1611032000	Materials - CAP	0.00	0.00	0.00	583.96	583.96	-583.96
1611035000	Services - CAP	710,717.00	700,000.00	26,381.52	635,122.59	661,504.11	49,212.89
1611036000	Retention - CAP	0.00	0.00	0.00	0.00	0.00	0.00
	Total Expenses:	**710,717.00**	**700,000.00**	**26,381.52**	**635,706.55**	**662,088.07**	**48,628.93**
	161103 Total:	**710,717.00**	**700,000.00**	**26,381.52**	**635,706.55**	**662,088.07**	**48,628.93**

Project Number	Project Name	Group	Project Type	Status
161104	Hinkle Reservoir Overflow Apron Drains	Wholesale - General CIP Reserve	Water Treatment Plant	Active
	Expenses			

Account Key	Account Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining

Project Number	Project Name	Group	Project Type	Status					
1611042000	Materials - CAP		0.00	0.00	0.00	0.00	0.00	0.00
1611045000	Services - CAP		7,000.00	7,000.00	0.00	2,835.00	2,835.00	4,165.00
		Total Expenses:	**7,000.00**	**7,000.00**	**0.00**	**2,835.00**	**2,835.00**	**4,165.00**
		161104 Total:	**7,000.00**	**7,000.00**	**0.00**	**2,835.00**	**2,835.00**	**4,165.00**

165101	Mainline Replacements - Main Avenue	Retail - General CIP Reserve	Distribution System	Active					
Expenses									
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1651015000	Services - CAP		335,000.00	335,000.00	0.00	4,000.00	4,000.00	331,000.00
		Total Expenses:	**335,000.00**	**335,000.00**	**0.00**	**4,000.00**	**4,000.00**	**331,000.00**
		165101 Total:	**335,000.00**	**335,000.00**	**0.00**	**4,000.00**	**4,000.00**	**331,000.00**

165102	Mainline Replacements - Oak Avenue	Retail - General CIP Reserve	Distribution System	Active					
Expenses									
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1651025000	Services - CAP		310,000.00	310,000.00	0.00	5,500.00	5,500.00	304,500.00
		Total Expenses:	**310,000.00**	**310,000.00**	**0.00**	**5,500.00**	**5,500.00**	**304,500.00**
		165102 Total:	**310,000.00**	**310,000.00**	**0.00**	**5,500.00**	**5,500.00**	**304,500.00**

165103	Los Lagos Tank Recoating and New Mixi...	Retail - General CIP Reserve	Storage Reservoirs and ...	Suspended					
Expenses									
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1651035000	Services - CAP		686,000.00	686,000.00	0.00	50.00	50.00	685,950.00
		Total Expenses:	**686,000.00**	**686,000.00**	**0.00**	**50.00**	**50.00**	**685,950.00**
		165103 Total:	**686,000.00**	**686,000.00**	**0.00**	**50.00**	**50.00**	**685,950.00**

165104	Mooney Ridge Hydro-Tank Recoating	Retail - General CIP Reserve	Storage Reservoirs and ...	Active					
Expenses									
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1651045000	Services - CAP		103,000.00	103,000.00	0.00	0.00	0.00	103,000.00
		Total Expenses:	**103,000.00**	**103,000.00**	**0.00**	**0.00**	**0.00**	**103,000.00**
		165104 Total:	**103,000.00**	**103,000.00**	**0.00**	**0.00**	**0.00**	**103,000.00**

165105	Sample Stations Various Locations	Retail - General CIP Reserve	Distribution System	Active					
Expenses									
Account Key	**Account Name**		**Total Budget**	**Date Range Budget**	**Beginning Balance**	**Total Activity**	**Ending Balance**	**Budget Remaining**
1651052000	Materials - CAP		0.00	0.00	0.00	14,949.90	14,949.90	-14,949.90
1651055000	Services - CAP		175,000.00	175,000.00	0.00	0.00	0.00	175,000.00
		Total Expenses:	**175,000.00**	**175,000.00**	**0.00**	**14,949.90**	**14,949.90**	**160,050.10**
		165105 Total:	**175,000.00**	**175,000.00**	**0.00**	**14,949.90**	**14,949.90**	**160,050.10**

Summary

Project Summary

Project Number	Project Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
061700	Redundant Folsom Outlet/USBR	0.00	0.00	0.00	0.00	0.00	0.00
081845	FO 40-Inch T-Main Rehab	0.00	0.00	3,118,700.38	0.00	3,118,700.38	-3,118,700.38
081848	Wholesale Meters	0.00	0.00	0.00	0.00	0.00	0.00
101919	Design & Construct TW&CTBP	0.00	0.00	5,070,353.01	0.00	5,070,353.01	-5,070,353.01
101925	Auburn Folsom Rd North	0.00	0.00	858,325.93	677,936.64	1,536,262.57	-1,536,262.57
121961	Erwin Ave Main Replacement	0.00	0.00	128,946.39	84,306.65	213,253.04	-213,253.04
121962	Peerless Ave Main Replacement	0.00	0.00	289,610.19	57,773.06	347,383.25	-347,383.25
121963	Intersection of Sierra & Douglas	0.00	0.00	6,584.60	0.00	6,584.60	-6,584.60
121964	Install PRS Between Lower Granite Bay ...	0.00	0.00	80.47	0.00	80.47	-80.47
121965	Install PRS Between ARC & SZONE	0.00	0.00	3,095.03	0.00	3,095.03	-3,095.03
121966	Design and Construct Lower Granite Bay..	2,975,960.00	0.00	3,175,206.34	430,891.82	3,606,098.16	-630,138.16
121967	Design and Construct Rehab Upper Gran..	1,620,040.00	0.00	646,015.91	873,867.42	1,519,883.33	100,156.67
121985	LGA ERP Supply Proj Phase 1	0.00	0.00	29,629.41	0.00	29,629.41	-29,629.41
121986	Fair Oaks 40 Pipeline ARC Rep	0.00	0.00	886,257.49	0.00	886,257.49	-886,257.49
121987	Fair Oaks 40 Cathodic Prot Pro	0.00	0.00	337,803.80	0.00	337,803.80	-337,803.80
125992	USBR Low Lake Level Pump Station	0.00	0.00	418.10	0.00	418.10	-418.10
131009	Telegraph Ave Main Replacement	0.00	0.00	16,212.82	238,086.46	254,299.28	-254,299.28
131010	Oak Ave 12-inch Main Replacement	0.00	0.00	113,948.29	138,893.55	252,841.84	-252,841.84
135000	Security System Design	0.00	0.00	110,696.51	127.32	110,823.83	-110,823.83
135021	Water Supply Reliability - Barton Road	0.00	0.00	0.00	0.00	0.00	0.00
135022	SSWD Pump Back Evaluation - Expense ...	0.00	0.00	1,449.65	0.00	1,449.65	-1,449.65
141034	FO 40 Pipeline Relining	0.00	0.00	830.85	0.00	830.85	-830.85
141043	2014 Drought Response - SSWD Antelo...	50,000.00	0.00	717,923.43	2,187,912.01	2,905,835.44	-2,855,835.44
141045	2014 Drought Response Plan - Barton Rd..	0.00	0.00	1,179,258.38	307,382.76	1,486,641.14	-1,486,641.14
141048	Douglas Steel Main Replacement	0.00	0.00	182,465.26	30,634.18	213,099.44	-213,099.44
141999	Tyler Software Purchase and Implemen...	0.00	0.00	124,272.00	18,868.57	143,140.57	-143,140.57
145041	Park Place & Auburn Folsom Rd PSV Stat..	0.00	0.00	16,406.68	0.00	16,406.68	-16,406.68
145044	Pressure Control Valve Station - Drought..	0.00	0.00	2,908.23	1,366.77	4,275.00	-4,275.00
145045	2014 Drought Response Plan - Barton Rd..	0.00	0.00	77,458.22	0.00	77,458.22	-77,458.22
148030	5680/56XX Cavitt Stallman Rd New Serv...	0.00	0.00	1,671.05	0.00	1,671.05	-1,671.05
148042	7150 Sierra Ponds Lane	0.00	0.00	129.28	0.00	129.28	-129.28
151409	WaterSmart Software Implementation	84,000.00	55,500.00	28,500.00	55,500.00	84,000.00	0.00
151411	Modular Furniture in Engineering	15,000.00	0.00	0.00	0.00	0.00	15,000.00
151412	Truck-mounted Valve Actuator	16,800.00	16,800.00	15,046.25	2,510.00	17,556.25	-756.25
151414	Replace WTP Programable Logic Control...	15,000.00	0.00	5,734.82	0.00	5,734.82	9,265.18
151422	EIM Electric Accuator Replacement at Fi...	6,000.00	6,000.00	0.00	5,875.61	5,875.61	124.39
151423	South Basin Transfer Pump	10,000.00	0.00	0.00	0.00	0.00	10,000.00
151428	Sewer Lift Pump Replacement	7,000.00	0.00	4,020.18	0.00	4,020.18	2,979.82
161100	WTP Floc-Sed Basins 2015 Improvemen...	0.00	0.00	0.00	423,838.86	423,838.86	-423,838.86
161101	Security Improvements (WTP & Bacon)	0.00	0.00	0.00	11,128.05	11,128.05	-11,128.05

Summary

Project Summary

Project Number	Project Name	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
161102	Solar Improvement Project (NEMA Proj…	0.00	0.00	0.00	106,730.00	106,730.00	-106,730.00
161103	Control Valve Stations Water Supply Rel…	710,717.00	700,000.00	26,381.52	635,706.55	662,088.07	48,628.93
161104	Hinkle Reservoir Overflow Apron Drains	7,000.00	7,000.00	0.00	2,835.00	2,835.00	4,165.00
165101	Mainline Replacements - Main Avenue	335,000.00	335,000.00	0.00	4,000.00	4,000.00	331,000.00
165102	Mainline Replacements - Oak Avenue	310,000.00	310,000.00	0.00	5,500.00	5,500.00	304,500.00
165103	Los Lagos Tank Recoating and New Mixi…	686,000.00	686,000.00	0.00	50.00	50.00	685,950.00
165104	Mooney Ridge Hydro-Tank Recoating	103,000.00	103,000.00	0.00	0.00	0.00	103,000.00
165105	Sample Stations Various Locations	175,000.00	175,000.00	0.00	14,949.90	14,949.90	160,050.10
	Report Total:	**7,126,517.00**	**2,394,300.00**	**17,176,340.47**	**6,316,671.18**	**23,493,011.65**	**-16,366,494.65**

Group Summary

Group	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
Construction	1,636,840.00	16,800.00	5,335,075.31	1,283,991.61	6,619,066.92	-4,982,226.92
Information Technology	84,000.00	55,500.00	152,772.00	74,368.57	227,140.57	-143,140.57
Maintenance	38,000.00	6,000.00	9,755.00	5,875.61	15,630.61	22,369.39
Planning	0.00	0.00	5,719,362.06	143,573.80	5,862,935.86	-5,862,935.86
Retail - General CIP Reserve	4,584,960.00	1,609,000.00	5,212,790.65	1,440,711.12	6,653,501.77	-2,068,541.77
Wholesale - General CIP Reserve	782,717.00	707,000.00	746,585.45	3,368,150.47	4,114,735.92	-3,332,018.92
Report Total:	**7,126,517.00**	**2,394,300.00**	**17,176,340.47**	**6,316,671.18**	**23,493,011.65**	**-16,366,494.65**

Type Summary

Group	Total Budget	Date Range Budget	Beginning Balance	Total Activity	Ending Balance	Budget Remaining
Buildings and Grounds	0.00	0.00	0.00	117,858.05	117,858.05	-117,858.05
Distribution System	820,000.00	820,000.00	1,645,305.07	1,252,080.44	2,897,385.51	-2,077,385.51
Information Technology - Hardward and…	84,000.00	55,500.00	152,772.00	74,368.57	227,140.57	-143,140.57
Miscellaneous	15,000.00	0.00	110,696.51	127.32	110,823.83	-95,823.83
Pump Stations	4,646,000.00	0.00	4,541,013.43	3,492,671.25	8,033,684.68	-3,387,684.68
Storage Reservoirs and Tanks	789,000.00	789,000.00	0.00	50.00	50.00	788,950.00
Transmission and Metering	710,717.00	700,000.00	5,629,598.87	944,456.08	6,574,054.95	-5,863,337.95
Water Treatment Plant	61,800.00	29,800.00	5,095,154.26	435,059.47	5,530,213.73	-5,468,413.73
xBillable	0.00	0.00	1,800.33	0.00	1,800.33	-1,800.33
Report Total:	**7,126,517.00**	**2,394,300.00**	**17,176,340.47**	**6,316,671.18**	**23,493,011.65**	**-16,366,494.65**

Mid-Year Budget Review
Fiscal Year 2015-16

Donna Silva
Finance Director
May 11, 2016

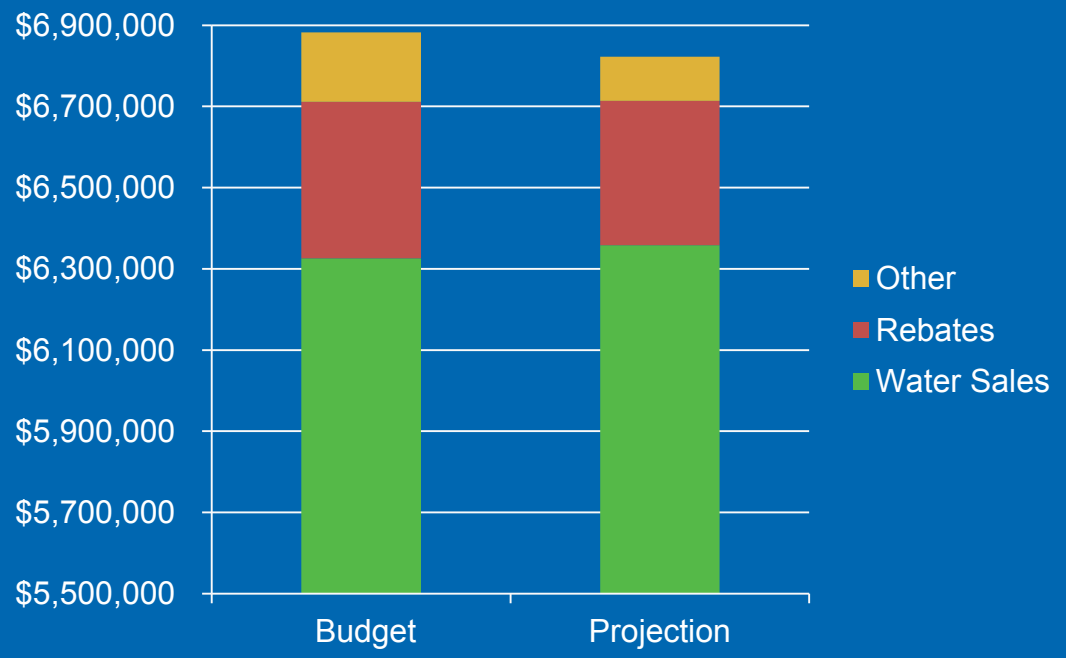
What is a Mid-Year Budget?

PURPOSE

- Informative on financial position as you head into next budget cycle.
- Discloses and explains any needed budget amendments
- Useful management tool
- Helps prepare books for year end and audit

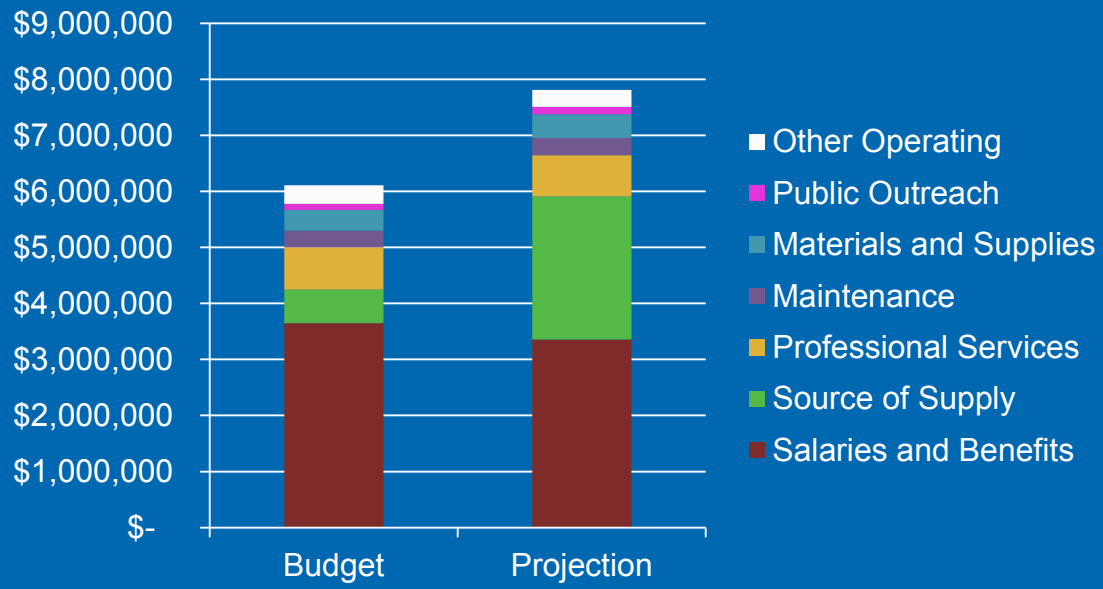
Wholesale Operating Revenue FY 2015-16

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
OPERATING REVENUES:				
Water Sales	$ 6,325,986	$ 4,897,508	$ 6,358,500	$ 32,514
Rebates	385,000	248,691	355,000	(30,000)
Other Operating Revenues	171,001	111,017	109,200	(61,801)
TOTAL OPERATING REVENUES	$ 6,881,987	$ 5,257,216	$ 6,822,700	$ (59,287)



Wholesale Operating Expense FY 2015-16

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
Salaries and Benefits	$ 3,644,964	$ 2,139,869	$ 3,354,200	$ (290,763)
Source of Supply	598,846	237,228	2,556,000	1,957,154
Professional Services	759,240	377,951	735,200	(24,040)
Maintenance	295,814	167,158	309,200	13,386
Materials and Supplies	370,560	269,205	420,400	49,840
Public Outreach	105,315	100,154	133,700	28,385
Other Operating	334,295	198,396	300,500	(33,795)
Depreciation	-	-	-	
TOTAL OPERATING EXPENSE	$ 6,109,034	$ 3,489,960	$ 7,809,200	$ 1,700,166



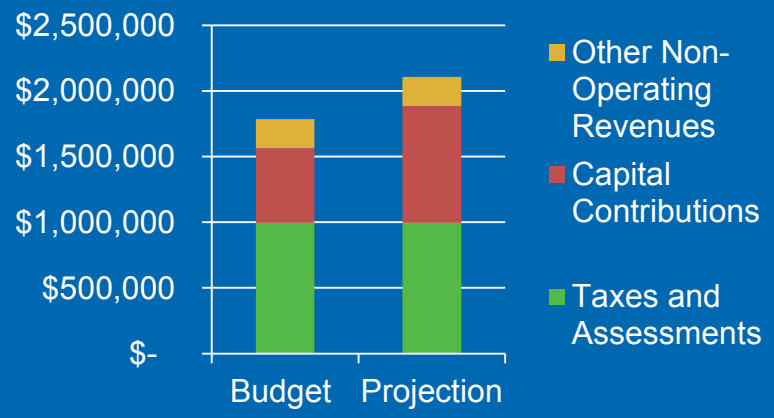
Ground water Reimbursement Settlement

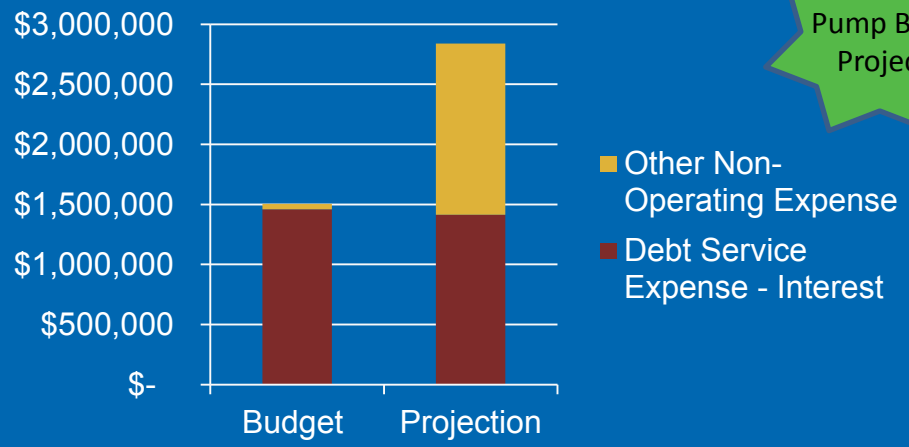
Wholesale Operating Revenues & Expenses

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
OPERATING REVENUES:				
Water Sales	$ 6,325,986	$ 4,897,508	$ 6,358,500	$ 32,514
Rebates	385,000	248,691	355,000	(30,000)
Other Operating Revenues	171,001	111,017	109,200	(61,801)
TOTAL OPERATING REVENUES	$ 6,881,987	$ 5,257,216	$ 6,822,700	$ (59,287)
OPERATING EXPENSES:				
Salaries and Benefits	$ 3,644,964	$ 2,139,869	$ 3,354,200	$ (290,763)
Source of Supply	598,846	237,228	2,556,000	1,957,154
Professional Services	759,240	377,951	735,200	(24,040)
Maintenance	295,814	167,158	309,200	13,386
Materials and Supplies	370,560	269,205	420,400	49,840
Public Outreach	105,315	100,154	133,700	28,385
Other Operating	334,295	198,396	300,500	(33,795)
Depreciation	-	-	-	
TOTAL OPERATING EXPENSE	$ 6,109,034	$ 3,489,960	$ 7,809,200	$ 1,700,166
NET INCOME/(LOSS) FROM OPERATIONS	$ 772,953	$ 1,767,255	$ (986,500)	$ (1,759,454)

Wholesale Non-Operating Revenue & Expense

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
NON-OPERATING REVENUES:				
Taxes and Assessments	995,000	566,354	995,000	-
Capital Contributions	568,350	844,367	889,500	321,150
Other Non-Operating Revenues	221,054	235,372	221,800	746
TOTAL NON OPERATING REVENUES	1,784,404	1,646,093	2,106,300	321,896
NON OPERATING EXPENSES:				
Debt Service Expense - Interest	1,458,019	1,160,788	1,413,900	(44,119)
Other Non-Operating Expense	46,916	2,180,934	1,426,000	1,379,084
TOTAL NON OPERATING EXPENSES	1,504,935	3,341,721	2,839,900	1,334,965
NET INCOME/(LOSS) NON-OPERATING	279,469	(1,695,628)	(733,600)	(1,013,069)





Pump Back Project

Wholesale CIP

Project Name	CIP Budget	Spent YTD	June 30, 2016 Projection	Carryover to Future Period
TOTAL FY 2015-16 CIP SPENDING	$ 2,908,000	$ 3,418,953	$ 2,132,300	$ 264,000
WTP Floc-Sed Basins 2015 Improvements Project ★	$ 800,000	$ 423,839	$ 1,098,000	-
Control Valve Stations Water Supply Reliability ★	600,000	661,724	700,000	-
ARC Flash Assessment and Improvements	100,000	-	50,000	50,000
Backwash Hood and Pumps Rehabilitation	52,000	-	50,000	-
Chemical Feed Systems - Polymer ★	112,000	-	25,000	-
Security Improvements (WTP & Bacon) ★	100,000	11,128	15,000	-
Hinkle Reservoir Overflow Apron Drains	15,000	2,835	15,000	-
SSWD Antelope Pump Back ★	700,000	2,187,912	-	-
Hinkle Reservoir Testing/Repairs ★	224,000	-	-	80,000
In-Plant Pump Station Improvements	56,000	-	-	65,000
Wash-down Piping Improvements	22,000	-	-	-
Meter Comm Antenna Improvements	12,000	-	-	-
Rapid Mix Process Improvements	25,000	-	-	-
Articulating Boom Lift	30,000	-	-	32,000
Vehicle #20 Replacement - New Instrument Van	60,000	-	-	37,000

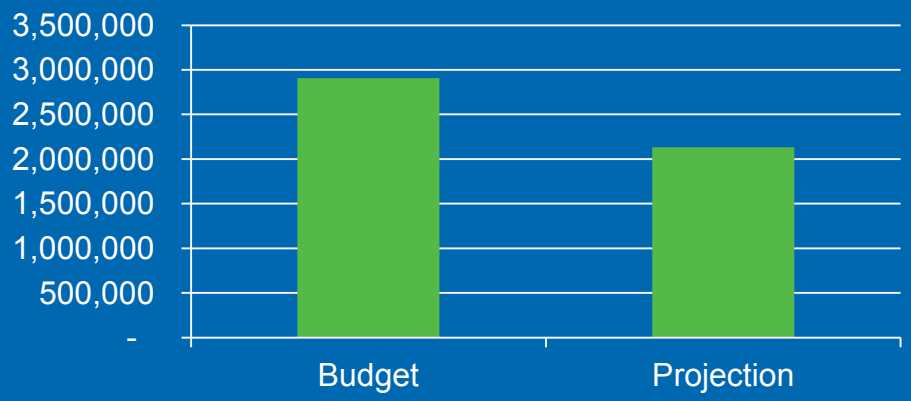
Continued next slide…….

Wholesale CIP

SAN JUAN WATER
SINCE 1854

.....continued from previous slide

Project Name	CIP Budget	Spent YTD	June 30, 2016 Projection	Carryover to Future Period
Solar Improvement Project (NEMA Project)	-	106,730	106,700	-
General Manager Vehicle Replacement	-	-	31,500	-
Vehicle #30 Replacement - Pool Vehicle	-	-	15,000	-
Tyler Software Purchase and Implementation	-	9,434	9,500	-
EIM Electric Actuator Replacement at Filter Basin	-	5,876	6,000	-
VM Ware Server (operating budget)	-	5,455	5,500	-
Truck-mounted Valve Actuator	-	2,510	2,500	-
Board Room Projector (operating budget)	-	15	2,500	-
Security System Design	-	127	100	-
Pressure Control Valve Station - Drought Response	-	1,367	-	-
TOTAL CAPITAL SPENDING	$ 2,908,000	$ 3,418,953	$ 2,132,300	$ 264,000



Wholesale Projected Net Income/(Loss)

	FY 15-16 Budget	FY 15-16 as of 3/31/2016	FY 15-16 Mid-Year Projection	Variance from Budget
Operating Revenues	$ 6,881,987	$ 5,257,216	$ 6,822,700	$ (59,287)
Operating Expenses	6,109,034	3,489,960	7,809,200	1,700,166
Net Income/(Loss) from Operations	772,953	1,767,255	(986,500)	(1,759,454)
Non-Operating Revenues	1,784,404	1,646,093	2,106,300	321,896
Non-Operating Expenses	1,504,935	3,341,721	2,839,900	1,334,965
Net Income/(Loss) from Non-Operating	279,469	(1,695,628)	(733,600)	(1,013,069)
Net Income/(Loss)	1,052,422	71,627	(1,720,100)	(2,772,523)
CIP Spending	2,908,000	3,418,953	2,132,300	(775,700)
Debt Principal	574,752		560,400	(14,352)
Net Impact to Reserves	$ (2,430,330)	$ (3,347,326)	$ (4,412,800)	$ (1,982,471)

Bottom Line - net impact to reserves would have been almost exactly what was anticipated in the budget.

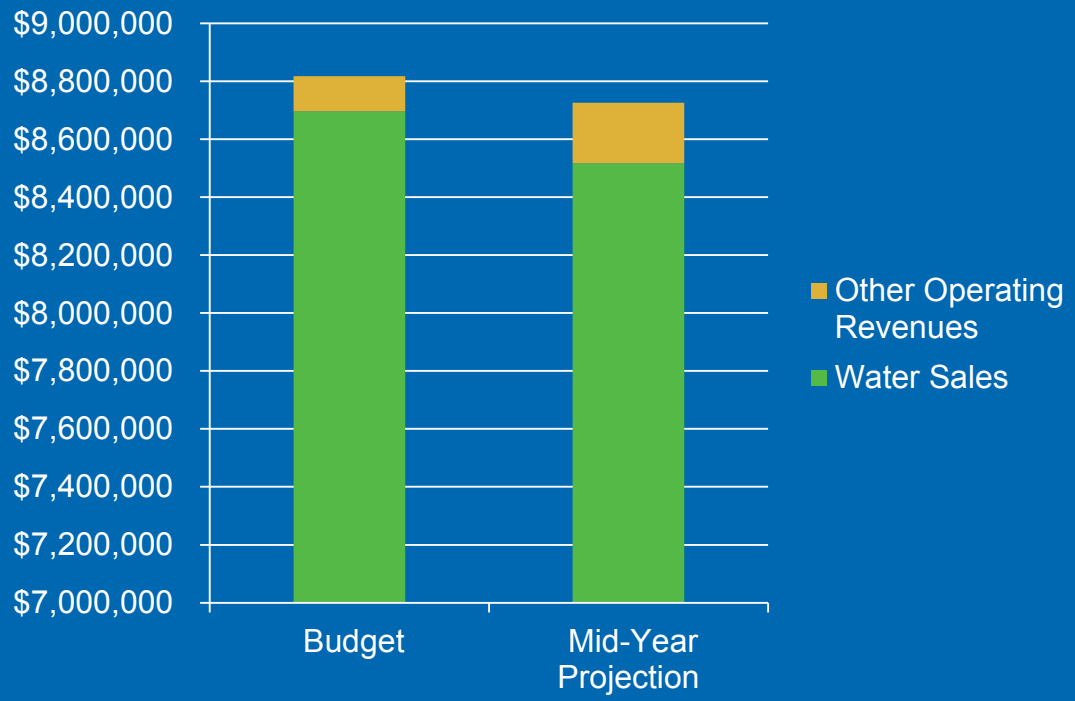
But now it will be $2milion less

Wholesale Proposed Budget Amendment

Operating Budget	$7,613,969
Transfer from CIP	924,000
Total Operating Budget	$8,537,969
Total Projection	8,667,600
Budget Amendment Needed	**$129,631**

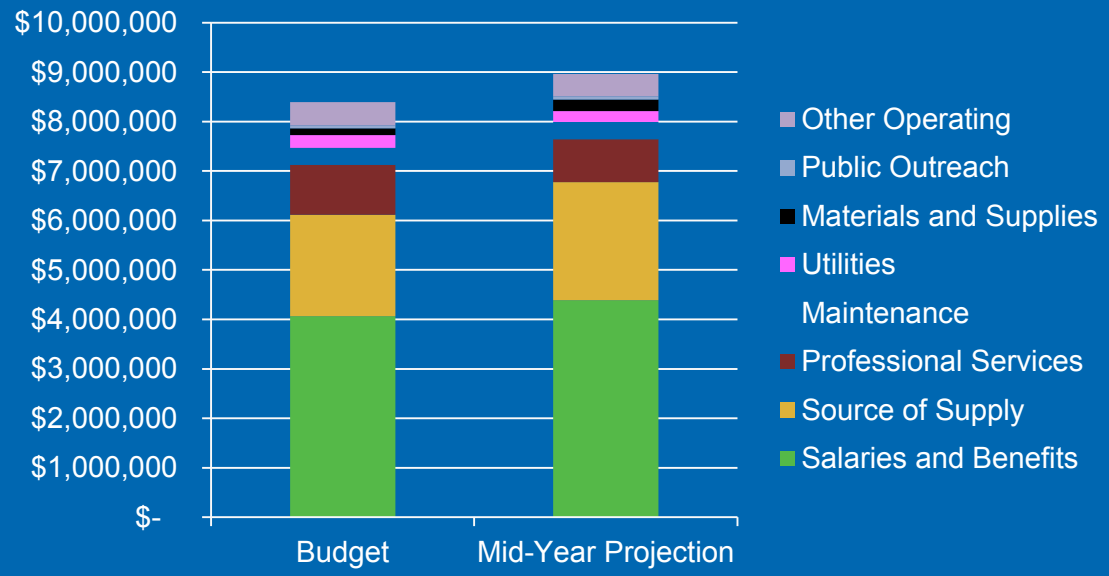
Retail Operating Revenue FY 2015-16

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
OPERATING REVENUES:				
Water Sales	$ 8,695,800	$ 4,878,625	$ 8,516,500	$ (179,300)
Other Operating Revenues	121,500	135,643	209,600	88,100
TOTAL OPERATING REVENUES	$ 8,817,300	$ 5,014,268	$ 8,726,100	$ (91,200)



Retail Operating Expenses FY 2015-16

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
Salaries and Benefits	$ 4,064,400	$ 3,113,516	$ 4,385,700	$ 321,300
Source of Supply	2,050,900	1,864,948	2,389,000	338,100
Professional Services	1,012,500	317,014	871,000	(141,500)
Maintenance	344,000	174,741	344,200	200
Utilities	256,700	142,037	225,600	(31,100)
Materials and Supplies	132,100	140,274	227,600	95,500
Public Outreach	64,100	49,422	66,400	2,300
Other Operating	470,700	314,421	453,101	(17,599)
Depreciation	-	-	-	-
TOTAL OPERATING EXPENSE	$ 8,395,400	$ 6,116,373	$ 8,962,601	$ 567,201

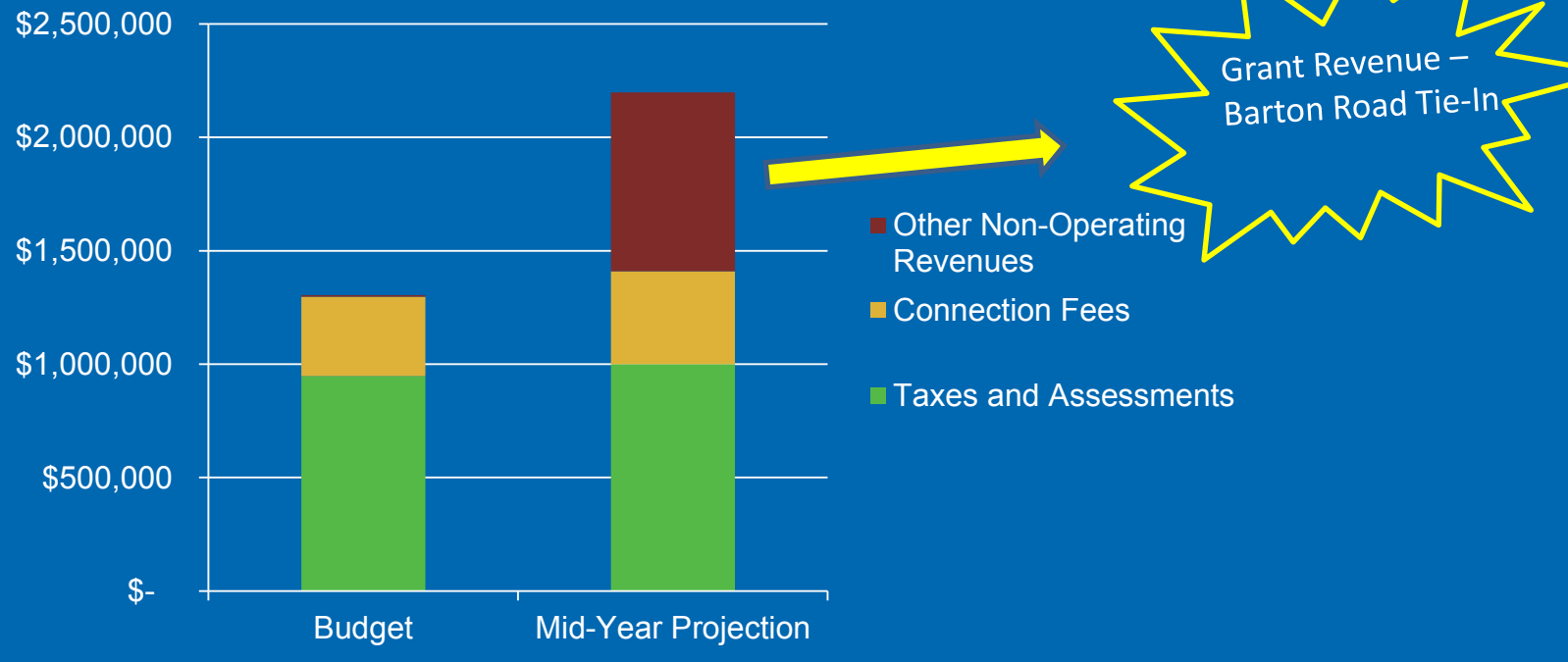


Retail Operating Revenue & Expense

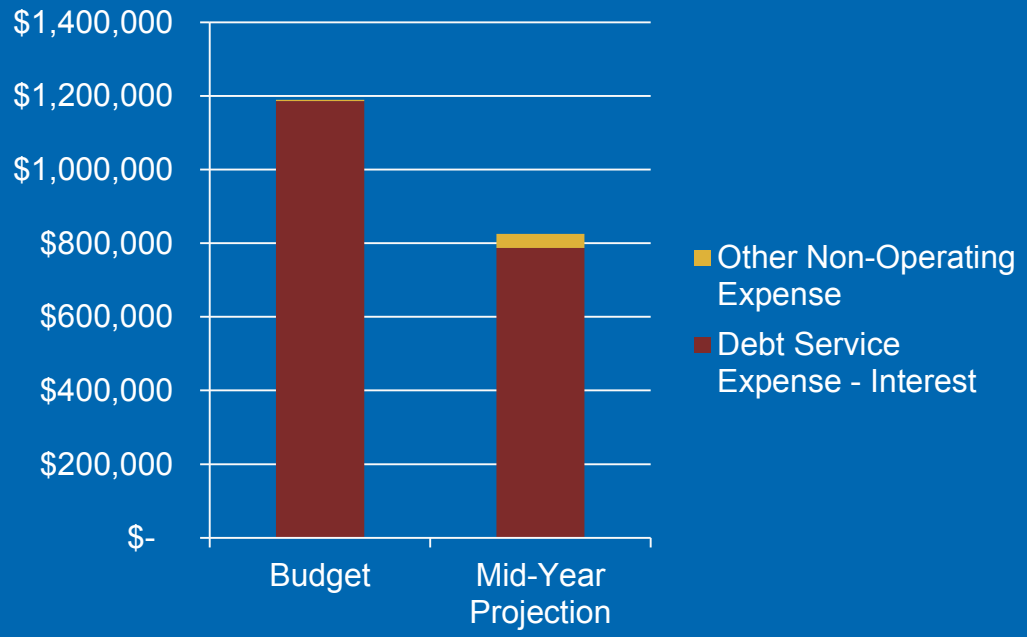
	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
OPERATING REVENUES:				
Water Sales	$ 8,695,800	$ 4,878,625	$ 8,516,500	$ (179,300)
Other Operating Revenues	121,500	135,643	209,600	88,100
TOTAL OPERATING REVENUES	$ 8,817,300	$ 5,014,268	$ 8,726,100	$ (91,200)
OPERATING EXPENSES:				
Salaries and Benefits	$ 4,064,400	$ 3,113,516	$ 4,385,700	$ 321,300
Source of Supply	2,050,900	1,864,948	2,389,000	338,100
Professional Services	1,012,500	317,014	871,000	(141,500)
Maintenance	344,000	174,741	344,200	200
Utilities	256,700	142,037	225,600	(31,100)
Materials and Supplies	132,100	140,274	227,600	95,500
Public Outreach	64,100	49,422	66,400	2,300
Other Operating	470,700	314,421	453,100	(17,599)
Depreciation	-	-	-	-
TOTAL OPERATING EXPENSE	$ 8,395,400	$ 6,116,373	$ 8,962,600	$ 567,200
NET INCOME/(LOSS) FROM OPERATIONS	$ 421,900	$(1,102,106)	$ (236,500)	$ (658,400)

Retail Non-Operating Revenues FY 2015-16

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
Taxes and Assessments	$ 948,000	$ 566,354	$ 1,000,000	$ 52,000
Connection Fees	350,000	400,895	410,000	60,000
Other Non-Operating Revenues	6,000	148,568	787,400	781,400
TOTAL NON OPERATING REVENUES	$ 1,304,000	$ 1,115,818	$ 2,197,400	$ 893,400



Retail Non-Operating Expenses FY 2015-16



	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
Debt Service Expense - Interest	$ 1,186,200	$ 647,093	$ 787,000	$ (399,200)
Other Non-Operating Expense	3,000	2,359	38,100	35,100
TOTAL NON OPERATING EXPENSES	$ 1,189,200	$ 649,452	$ 825,100	$ (364,100)

Retail CIP FY 2015-2016

Project Name	CIP Budget	Spent YTD	June 30, 2016 Projection	Carryover to 16-17
Design and Construct Rehab Upper Granite Pay BP	1,100,000	902,165	950,000	-
Design and Construct Lower Granite Bay Pump Stn	350,000	423,820	450,000	
Auburn Folsom Rd North	680,000	677,937	678,000	-
2014 Drought Response Plan - Barton Rd Pipeline Project	176,700	307,382	319,000	-
Telegraph Ave Main Replacement	239,000	238,086	251,000	-
Oak Ave 12-inch Main Replacement (Oak and Cardwell)	104,400	132,707	132,700	-
Distribution System Improvements	123,000	-	130,000	-
Ditch Witch Vactor Truck Replacement	92,500	-	80,200	-
Erwin Ave Main Replacement	69,800	78,532	81,000	-
Peerless Ave Main Replacement	43,400	44,191	46,000	-
Vehicle #27 Replacement - Conservation	31,500	-	31,000	-
Pump/Motor R&R	50,000	-	15,000	-
Vehicle #30 Replacement - Pool Vehicle	35,000	-	15,000	-

Continued next page…..

Retail CIP FY 2015-2016

Continued from previous page…..

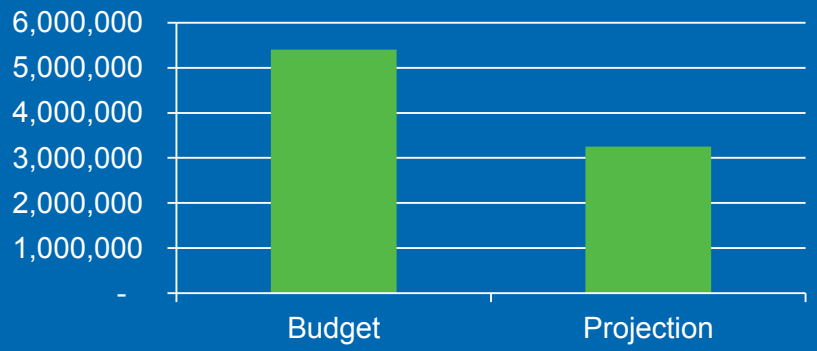
Project Name	CIP Budget	Spent YTD	June 30, 2016 Projection	Carryover to 16-17
Los Lagos Tank Recoating	628,000	50	-	620,500
Mainline Replacements - Oak Avenue	310,000	5,500	5,500	304,500
Mainline Replacements - Main Avenue	335,000	4,000	4,000	331,000
Pressure Reducing Station - Oak Ave.	200,000	-	-	200,000
Sample Stations Various Locations	175,000	14,950	-	-
Pressure Reducing Station - Canyon Falls	155,000	-	-	-
Transmission Pipelines - Eureka	150,000	-	-	159,000
Kokila Reservoir Condition Assessment	103,000	-	-	48,000
Mooney Ridge Hydro-Tank Recoating	103,000	-	-	-
Los Lagos - New Mixing System	58,000	-	-	20,000
Vehicle #9 Replacement - Field Operations	55,000	-	-	55,000
Mainline Replacements - Sierra/Douglas	27,300	-	-	
Update OITs and PLC Programing	9,000	-	-	9,000

Continued next page…

Retail CIP FY 2015-2016

Continued from previous page…..

Project Name	CIP Budget	Spent YTD	June 30, 2016 Projection	Carryover to 16-17
Douglas Steel Main Replacement	-	22,595	30,600	-
GEM Electric Vehicle	-	11,360	11,400	-
Tyler Software Purchase and Implementation	-	9,434	9,500	-
WaterSmart Software Implementation	-	55,500	-	-
VM Ware Server	-	5,455	5,500	-
General Manager Vehicle Replacement	-	-	3,500	-
Board Room Projector (operating budget)	-	15	2,500	-
TOTAL	5,403,600	2,933,679	3,258,900	1,747,000



Retail Projected Net Income/(Loss)

	Budget	YTD as of 3/31/2016	June 30, 2016 Projection	Variance from Budget
Operating Revenues	8,817,300	5,014,268	8,726,100	(91,200)
Operating Expenses	8,395,400	6,116,373	8,962,600	567,200
Net Income/(Loss) from Operations	421,900	(1,102,106)	(236,500)	(658,400)
Non-Operating Revenues	1,304,000	941,575	2,197,400	893,400
Non-Operating Expenses	1,189,200	649,452	825,100	(364,100)
Net Income/(Loss) from Non-Operating	114,800	292,124	1,372,300	1,257,500
Net Income/(Loss)	536,700	(809,982)	1,135,800	599,100
CIP Spending	5,169,200	2,933,679	3,258,900	(1,910,300)
Debt Principal	466,510	154,800	309,600	(156,910)
Net Impact to Reserves	(5,099,010)	(3,898,461)	(2,432,700)	2,666,310

Bottom Line - net impact to reserves will be $2.6 million less than anticipated in the budget

AGENDA ITEM VI-2.1

STAFF REPORT

To: Board of Directors

From: Rob Watson, P.E.
Engineering Services Manager

Date: May 11, 2016

Subject: Self Parcel Maps Project (Minor Subdivision)
Recommendation to Accept Waterline Easement

RECOMMENDATION ACTION

Staff recommends a motion to approve and accept a 20-ft wide waterline easement in accordance with District Ordinances for a new water distribution pipeline to serve the planned development project within the project property.

BACKGROUND

Mr. Dallas and Mr. Richard Self are planning to complete a 4-lot minor subdivision on adjacent property they each own which are located at 3600 and 3630 Allison Drive (APN's 468-040-026-000 and 468-040-027-000), within the District's retail service area. They have requested water service from the District to supply domestic, landscape, and fire response demands.

SJWD Engineering has been working with the design engineer for the project to facilitate water service to the project, and has determined that a new water main is required to supply adequate fire flow capacity.

Installation of this planned new water pipeline, through the planned easement, will result in providing adequate water supply for the proposed subdivision project, and will also complete a looped connection between two of the District's currently dead-end water mains (located on Annabelle Ave and Martella Ln).

STATUS

The improvement plans for the subdivision project are complete and the project is ready to be approved by Placer County following the District's approval and acceptance of the requested water pipeline easement.

District staff have reviewed the easement documents and the design plans and has determined that the proposed easement is designed in accordance with the District's development and engineering Standards, and in accordance with the District's Ordinances. A copy of the easement document is attached for Board reference.

BUDGET IMPACT

Other than a potential for minor costs associated with recordation of the easement documents (typically there is no charge), there is no anticipated budget associated with a Board decision to accept this easement.

Recording Requested By, And When
Recorded, Please Mail Document To:

SAN JUAN WATER DISTRICT
Attn: General Manager
P.O. Box 2157
Granite Bay, CA 95746

Official Document, Exempt from Recording
Fees Pursuant to Gov't Code §§ 6103 & 27383

No Documentary Transfer Tax
Per R&T Code § 11922

Assessor's Parcel No(s).: 468-040-026 -- This Space for Recorder's Use Only --

GRANT OF EASEMENT AND RIGHT OF WAY

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, **RICHARD SELF**, an unmarried man, Grantor, hereby grants to **San Juan Water District**, a political subdivision of the State of California, Grantee, a permanent easement, including a perpetual right of way to enter upon the real property from the nearest convenient public road to access the easement, described below at any time that Grantee may deem necessary, to locate, construct, install, operate, maintain, repair, modify, replace and remove underground pipelines, water mains and all necessary below- and above-ground appurtenances for the purpose of conveying water over, across, through, and under the lands hereinafter described, together with the right to excavate and refill ditches or trenches for the location of said pipelines, water mains and appurtenances, and the further right to remove trees, bushes, undergrowth, ground covering, pavement, and any other obstructions interfering with the location, construction, installation, operation, maintenance, repair, modification, replacement and removal of said pipelines, water mains and appurtenances.

The land burdened by this Grant of Easement and Right of Way is located in the County of Placer, State of California, and is more particularly described as follows:

See Exhibit "A" attached to and made a part of this Grant of Easement and Right of Way

The subject easement granted by Grantor to Grantee herein is more particularly described as:

See Exhibit "B" attached to and made a part of this Grant of Easement and Right of Way

As a condition of this Grant of Easement and Right of Way, Grantor reserves the right to use such land for purposes that will not interfere with Grantee's full enjoyment of the rights hereby granted; provided that Grantor shall not erect or construct any building, wall, fence, or other permanent structure, or drill or operate any well, or construct any reservoir or any other obstruction on said land, or to diminish or substantially add to the ground cover lying over the easement and right of way granted herein.

The provisions of this Grant of Easement shall run with the land and inure to the benefit of and bind the heirs, successors, and assigns of the Grantor and Grantee.

Executed this 15 day of APR, 2016

RICHARD SELF, an unmarried man

By: _____
Richard Self, Owner

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF California)

COUNTY OF Placer)

On 04/15/16 (date) before me, Kristen Reznich (name of notary officer), notary public,

personally appeared Richard Self (name(s) of signer(s)),

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary

KRISTEN REZNICH
Commission # 2022126
Notary Public - California
Placer County
My Comm. Expires Apr 27, 2017

----------OPTIONAL SECTION----------

CAPACITY CLAIMED BY SIGNER

Though statute does not require the Notary to fill in the data below, doing so may prove invaluable to persons relying on the document.

☐ INDIVIDUAL
☐ CORPORATE OFFICER(S)

Title(s)
☐ PARTNER(S) ☐ LIMITED
☐ GENERAL
☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐
GUARDIAN/CONSERVATOR
☒ OTHER: owner

SIGNER IS REPRESENTING:
Name of Person(s) or entity(ies)

OPTIONAL SECTION:

DATA REQUESTED HERE IS NOT REQUIRED BY LAW.

TITLE OR TYPE OF DOCUMENT: Grant of Easement and Right of Way

NUMBER OF PAGES 3 DATE 04/15/16

SIGNER(S) OTHER THAN NAMED ABOVE n/a

EXHIBIT 'A'
Access & Water Main Easement to San Juan Water District
APN: 468-040-026

An easement for access and water main over a portion of the "Resultant Richard Parcel" as described in Document #2011-0023500, Official Records of Placer County, being a portion of Parcel 2 as shown on the Parcel Map per Placer County PLMD 20110155, and being a portion of the Northwest Quarter of the Northeast Quarter of Section 17, Township 10 North, Range 7 East, M.D.B.&M., County of Placer, State of California, described as the follows:

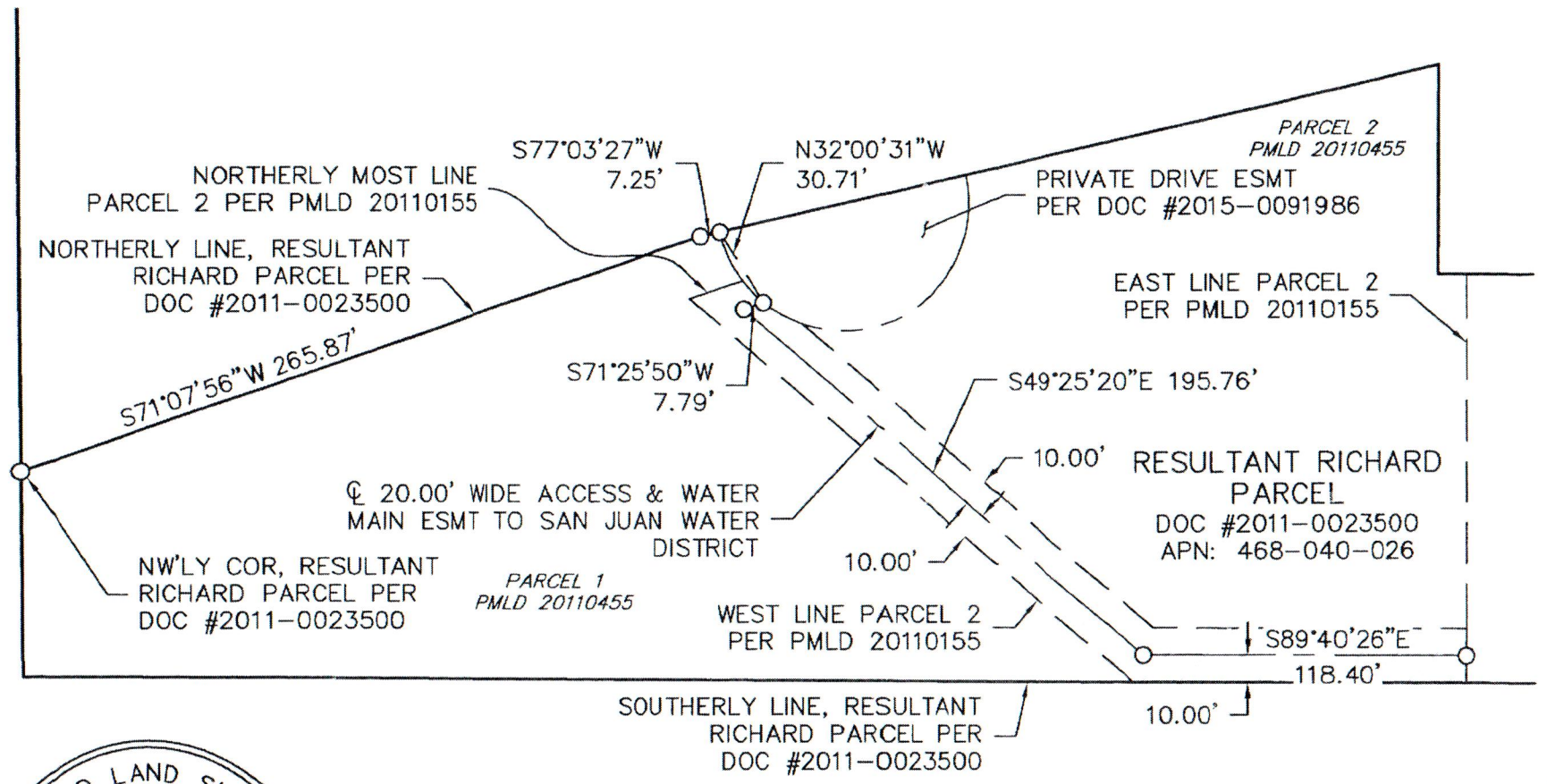
Said easement being 20.00 feet wide, lying 10.00 feet on both sides of the following described centerline:

BEGINNING at a point on the southerly line of the private drive easement granted to Dallas L. Self and Laura M. Self, Trustees of the Dallas L. Self and Laura M. Self Revocable Trust Dated October 13, 1995, recorded as Doc. #2015-0091986, Placer County Records, said point also being the point of intersection of said private drive easement and the line that is parallel and 10.00 feet south of the Northerly most line of said Parcel 2, from which point, the Northwesterly most corner of said Resultant Richard Parcel bears the following three (3) courses and distances: (1) North 32°00'31" West, 30.71 feet, to a point on the Northerly line of said Resultant Richard Parcel; (2) along said Northerly line, South 77°03'27" West, 7.25 feet, to an angle point in said Northerly line; (3) continuing along said Northerly line, South 71°07'56" West, 265.87 feet, to said Northwesterly corner; THENCE from said POINT OF BEGINNING, South 71°25'50" West, 7.79 feet, to a point on the line that is parallel and 10.00 feet northeasterly of the West line of said Parcel 2; THENCE along the last mentioned parallel line, South 49°25'20" East, 195.76 feet, to a point on the line that is parallel and 10.00 feet north of the South line of said Resultant Richard Parcel; THENCE along the last mentioned parallel line, South 89°40'26" East, 118.40 feet, to the East line of said Parcel 2.

The side lines of said easement are to be lengthened or shortened so as to terminate on the East line of said Parcel 2 and the southerly of said Private Drive Easement.

The Basis of Bearings of this description and the attached Exhibit 'B', is as shown on the map filed in Book CC of Maps, Page No. 2, Placer County Records.

End description.



LICENSED LAND SURVEYOR
CHARLES J. CZAPKAY
No. PLS 8297
STATE OF CALIFORNIA

3/31/16

AREA WEST ENGINEERS, INC.
ENGINEERING - SURVEYING - PLANNING
7478 SANDALWOOD DRIVE, SUITE 400
CITRUS HEIGHTS, CA 95621
(916) 725-5551 (916) 725-5808 (FAX)
AWE@AREAWESTENG.COM

EXHIBIT 'B'
ACCESS & WATER MAIN EASEMENT
TO SAN JUAN WATER DISTRICT
APN: 468-040-026
COUNTY OF PLACER
STATE OF CALIFORNIA

SCALE	
HORIZ.:	1" = 60'
VERT.:	NONE
DATE:	MARCH, 2016

10021

SHEET 1 OF 1