

**LAS VIRGENES - TRIUNFO
JOINT POWERS AUTHORITY
AGENDA**

4232 Las Virgenes Road, Calabasas, CA 91302

CLOSING TIME FOR AGENDA IS 8:30 A.M. ON THE TUESDAY PRECEDING THE MEETING. GOVERNMENT CODE SECTION 54954.2 PROHIBITS TAKING ACTION ON ITEMS NOT ON POSTED AGENDA UNLESS AN EMERGENCY, AS DEFINED IN GOVERNMENT CODE SECTION 54956.5 EXISTS OR UNLESS OTHER REQUIREMENTS OF GOVERNMENT CODE SECTION 54954.2(B) ARE MET.

5:00 PM

February 6, 2017

PLEDGE OF ALLEGIANCE

1 CALL TO ORDER AND ROLL CALL

2 CHAIR/VICE CHAIR

A Annual Transition of JPA Chair and Vice Chair (Pg. 4)

Recognize Triunfo Sanitation District Director James Wall as Chair, and Las Virgenes Municipal Water District Director Glen Peterson as Vice Chair of the Las Virgenes-Triunfo Joint Powers Authority for calendar year 2017.

B Welcome TSD Director Susan Pan to JPA Board of Directors (Pg. 5)

3 APPROVAL OF AGENDA

4 PUBLIC COMMENTS

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

5 CONSENT CALENDAR

A Minutes: Regular Meeting of January 3, 2017 (Pg. 6)

B Budget Planning Calendar for Fiscal Year 2017-18 (Pg. 10)

Receive and file the Budget Planning Calendar for Fiscal Year 2017-18.

6 ACTION ITEMS

A Financial Review: Second Quarter of Fiscal Year 2016-17 (Pg. 12)

Receive and file the financial review for the second quarter of Fiscal Year 2016-17.

B Rancho Las Virgenes Raw Sludge Wet Well Recirculation Pump Modifications Project: CEQA Determination and Call for Bids (Pg. 17)

Find that the work is exempt from the California Environmental Quality Act and approve the issuance of a Call for Bids for the Rancho Las Virgenes Raw Sludge Wet Well Recirculation Pump Modifications Project.

C Tapia Water Reclamation Facility Primary Clarifier Nos. 2 and 3 Rehabilitation Project: Final Acceptance (Pg. 22)

Execute a Notice of Completion and have the same recorded; extend the contract duration by 37 calendar days; authorize the Administering Agent/General Manager to approve a change of scope for inspection services, in the amount of \$2,881.50; and, in the absence of claims from subcontractors and others, release the retention, in the amount of \$37,438.20, within 30 calendar days after filing the Notice of Completion for the Tapia Water Reclamation Facility Primary Clarifier Nos. 2 and 3 Rehabilitation Project.

D Pure Water Project Las Virgenes-Triunfo: Award of Modeling of Las Virgenes Reservoir Related to Indirect Potable Reuse Using Surface Water Augmentation (Pg. 27)

Accept the proposal from Trussell Technologies, Inc., and authorize the Administering Agent/General Manager to execute a professional services agreement, in the amount of \$279,678, for modeling of Las Virgenes Reservoir related to indirect potable reuse using surface water augmentation.

E Pure Water Project Las Virgenes-Triunfo: Award of Advanced Water Treatment Plant Preliminary Siting Study (Pg. 63)

Accept the proposal from RMC Water and Environment, a Woodard & Curran Company, and authorize the Administering Agent/General Manager to execute a professional services agreement, in the amount of \$157,648, for an advanced water treatment plant preliminary siting study.

7 BOARD COMMENTS

8 ADMINISTERING AGENT/GENERAL MANAGER REPORT

9 FUTURE AGENDA ITEMS

10 INFORMATION ITEMS

A Pure Water Project Las Virgenes-Triunfo: Draft Public Outreach Plan and Legislative Handout (Pg. 107)

11 PUBLIC COMMENTS

Members of the public may now address the Board of Directors **ON MATTERS NOT APPEARING ON THE AGENDA**, but within the jurisdiction of the Board. No action shall be taken on any matter not appearing on the agenda unless authorized by Subdivision (b) of Government Code Section 54954.2

12 CLOSED SESSION

A Conference with District Counsel – Existing Litigation (Government Code Section 54956.9(a)):

1. Las Virgenes - Triunfo Joint Powers Authority v. United States Environmental Protection Agency and Heal the Bay, Inc. v. Lisa P. Jackson (TMDL cases)
2. Las Virgenes - Triunfo Joint Powers Authority v. United States Environmental Protection Agency (FOIA case)

13 ADJOURNMENT

Pursuant to Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and applicable federal rules and regulations, requests for a disability-related modification or accommodation, including auxiliary aids or services, in order to attend or participate in a meeting, should be made to the Executive Assistant/Clerk of the Board in advance of the meeting to ensure availability of the requested service or accommodation. Notices, agendas, and public documents related to the Board meetings can be made available in appropriate alternative format upon request.

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: General Manager

Subject : Annual Transition of JPA Chair and Vice Chair

SUMMARY:

The Joint Powers Authority, Joint Exercise of Powers Agreement, Section 4, states "The Chairs of the two (2) parties' governing boards will alternate annually as Chair and Vice Chair, respectively, of the meetings." Based on this provision, the Chair of the JPA for calendar year 2017 shall be the Chair of the Triunfo Sanitation District Board, and the Vice Chair of the JPA shall be the Chair of the Las Virgenes Municipal Water District Board. No action by the JPA Board is necessary other than the respective Chairs of the parties shall assume their roles on the JPA Board at this meeting.

RECOMMENDATION(S):

Recognize Triunfo Sanitation District Director James Wall as Chair, and Las Virgenes Municipal Water District Director Glen Peterson as Vice Chair of the Las Virgenes-Triunfo Joint Powers Authority for calendar year 2017.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

Prepared by: Josie Guzman, CMC, Executive Assistant/Clerk of the Board



NEWS RELEASE

CONTACT:
Mr. Sandy Warren
Public Affairs
805-658-4608
sandywarren@trunfosanitation.com

Susan Pan Appointed to Triunfo Sanitation District Board of Directors

VENTURA, Calif., Jan. 30 – Susan Pan, Deputy Director of the Ventura County Water and Sanitation Department, has been appointed as a Director of the Triunfo Sanitation District, filling the vacancy created by Michael McReynolds' resignation on December 15, 2016. Pan, a registered civil engineer and a resident of Oak Park, took the oath of office at a special meeting of the Triunfo Sanitation District Board on Wednesday, January 25. Pan was selected from a field of 12 applicants who interviewed for the position.

James Wall, District Board Chairman, stated, "The Board selected Susan Pan from 12 well qualified candidates. It was a difficult decision, but in the end, we believed Susan had the qualifications and experience that would best serve the Triunfo Sanitation District." In addition to Wall, Directors Steven Iceland, Janna Orkney, and Michael Paule participated in the interview process.

Triunfo Sanitation District Board members are elected at large and serve staggered four-year terms – Pan will serve out McReynolds' term through December 2018.

Commenting on her appointment, Pan said, "I am honored to be selected from the group of highly qualified applicants. I am committed to serve our community and work with the Board members and the District's management team to manage our water and wastewater systems in an efficient, cost effective, and environmentally and financially sustainable way to support the living and economy that we have been enjoying."

Prior to the 10 years in her current position with Ventura County, Pan was principal manager of Pan Engineering Associates. She has also held water and wastewater-related positions with the City of Ventura, Metcalf & Eddy, and the County of Los Angeles. Her prior community involvement includes serving as a board member of the Oak Park Community Foundation and a board member of the Parent Faculty Association for several schools in the Oak Park Unified School District.

About TSD

Triunfo Sanitation District provides sewage collection services and wastewater treatment, supplies potable water, and treats and sells recycled water in the southeastern portion of Ventura County. The District covers approximately 50 square miles and serves a population in excess of 30,000. For additional information, visit www.trunfosanitation.com.

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**LAS VIRGENES – TRIUNFO
JOINT POWERS AUTHORITY
MINUTES
REGULAR MEETING**

5:00 PM

January 3, 2017

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Mark Norris.

1. CALL TO ORDER AND ROLL CALL

The meeting was called to order at **5:00 p.m.** by Chair Glen Peterson in the Board Room at Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road in Calabasas, California. Josie Guzman, Clerk of the Board, conducted the roll call.

Present: Director(s): Caspary, Iceland, Lewitt, Orkney, Paule, Peterson, Polan, Renger, and Wall.

Absent: Director(s): None.

2. APPROVAL OF AGENDA

Director Paule moved to approve the agenda. Motion seconded by Director Iceland. Motion carried unanimously.

3. PUBLIC COMMENTS

None.

4. CONSENT CALENDAR**A Minutes: Regular Meeting of December 5, 2016**

Director Caspary moved to approve the Consent Calendar as presented. Motion seconded by Director Orkney. Motion carried unanimously.

5. ACTION ITEMS**A Farm Sprayfield Operation and Maintenance: Renewal of Agreement**

Authorize the Administering Agent/General Manager to execute a one-year agreement with W. Litten Land Preparation for the operation and maintenance of the Rancho Las Virgenes Farm, in an amount not to exceed \$250,000.

Administering Agent/General Manager David Pedersen presented the report. He noted that a handout was distributed with charts showing the Rancho Las Virgenes Farm Sprayfield actual operation and maintenance costs for the past five years, and the contractor's current and proposed hourly rates.

Director Caspary moved to approve Item 5A. Motion seconded by Director Lewitt.

Administering Agent/General Manager David Pedersen responded to questions related to the contractor's rates and the calculation of unit costs for pickup trucks.

Motion carried unanimously.

B Draft Policy Principles for Dry-Weather Urban Runoff Diversions

Adopt the Draft Policy Principles for Dry-Weather Urban Runoff Diversions.

Administering Agent/General Manager David Pedersen presented the report and reviewed the draft policy principles. He responded to questions posed by the Board related to the following topics: development of discharge standards, individual agencies' variation in flow rates, identifying constituents in the discharge, creation of new manhole for the existing storm drains, designing a system where low-flows can only go one way, concerns raised by Calleguas Municipal Water District, emergency shutoff, low impact development standards, providing consistent responses, total dissolved solids, metering, staffing and fees.

Director Polan moved to approve Item 5B. Motion seconded by Director Caspary. Motion carried unanimously.

6. BOARD COMMENTS

Chair Peterson noted that Eastern Municipal Water District was working with a proprietary process to concentrate salts, and he suggested that the Board consider this type of process.

7. ADMINISTERING AGENT/GENERAL MANAGER REPORT

None.

8. FUTURE AGENDA ITEMS

None.

9. INFORMATION ITEMS

A Centrate Equalization Tank Project: Change Order No. 1

B Basin Plan Amendment for 2013 Malibu Creek TMDL Implementation Plan

C Nominees for Administrator of the Environmental Protection Agency and Secretary of the Interior

10. PUBLIC COMMENTS

None.

11. CLOSED SESSION

A Conference with District Counsel – Existing Litigation (Government Code Section 54956.9(a)):

1. Las Virgenes - Triunfo Joint Powers Authority v. United States Environmental Protection Agency and Heal the Bay, Inc. v. Lisa P. Jackson (TMDL cases)
2. Las Virgenes – Triunfo Joint Powers Authority v. United States Environmental protection Agency (FOIA case)

The Board recessed to Closed Session at **5:43 p.m.** and reconvened to Open Session at **5:48 p.m.**

Authority Counsel Keith Lemieux announced there was no reportable action taken during the Closed Session.

12. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **5:49 p.m.**

James Wall, Chair

ATTEST:

Glen Peterson, Vice Chair

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

Subject : Budget Planning Calendar for Fiscal Year 2017-18

SUMMARY:

This item provides the schedule for key activities associated with development and adoption of the Fiscal Year 2017-18 Budget.

RECOMMENDATION(S):

Receive and file the Budget Planning Calendar for Fiscal Year 2017-18.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

FINANCIAL IMPACT:

There is no financial impact associated with this action.

DISCUSSION:

Last year, the JPA implemented a two-year budget process for Fiscal Years 2016-18. At that time, the JPA Board approved the Fiscal Year 2016-18 Budget Plan and adopted the Fiscal Year 2016-17 Budget. The attached schedule outlines the time-frame and process to review the second year of the Budget Plan, incorporate any significant changes and adopt the Fiscal Year 2017-18 Budget. The annual adoption of the upcoming fiscal year's budget complies with the terms of the JPA Agreement.

Prepared by: Angela Saccareccia, Finance Manager

ATTACHMENTS:

JPA Budget Planning Calendar

Las Virgenes-Triunfo Joint Powers Authority

FY 2017-18 Budget Planning Calendar

Date	Board Activity	Description
2/6/2017	Board Meeting	Budget Process review - distribute Budget Planning Calendar Quarterly Financial Review - Second Quarter
2/10/2017	-	Budget submissions from TSD due to Administering Agent
3/6/2017	Board Meeting	IIP Review
3/30/2017	-	Meetings with GM/Department staff, TSD staff
5/1/2017	Board Meeting	Quarterly Financial Review - Third Quarter Preliminary Budget provided to Board
6/5/2017	Board Meeting	Budget Adoption

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

Subject : Financial Review: Second Quarter of Fiscal Year 2016-17

SUMMARY:

The second quarter financial review presents data as of December 31, 2016. It is important to note that due to the timing of various projects and payments, the second quarter report should primarily be used to identify areas where an emerging trend may affect the JPA's position at fiscal year-end.

RECOMMENDATION(S):

Receive and file the financial review for the second quarter of Fiscal Year 2016-17.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

FINANCIAL IMPACT:

There is no financial impact associated with this action.

DISCUSSION:

The JPA's second quarter net uses of funds in Fiscal Year 2016-17 totaled \$7.7 million, compared to \$7.5 million for the same period in Fiscal Year 2015-16. There were year-over-year reductions in operating revenues (12.3%) and a slight increase in operating expenditures (0.5%). The reductions in revenues were primarily due to decreased recycled water sales as a result of conservation efforts in response to the statewide drought.

Capital expenditures were approximately \$26,000 lower than the prior year.

When comparing to Fiscal Year 2016-17 budget estimates through the second quarter, actual operating expenditures were approximately \$1.2 million (14.5%) below budget estimates,

primarily due to lower than expected energy, chemical, and sprayfield costs as well as decreased maintenance labor hours. Capital project expenditures were approximately \$4.2 million below budget estimates, primarily due to the timing of expenditures for planned projects.

Prepared by: Angela Saccareccia, Finance Manager

ATTACHMENTS:

Financial Review: Second Quarter of Fiscal Year 2016-17

Joint Powers Authority Operations
Quarterly Update - Comparison to Budget & Prior Year at December 31, 2016
FY 16-17 Year To Date

	<u>FY 15-16 Actual YTD</u>	<u>FY 16-17 Budget YTD</u>	<u>FY 16-17 Actual YTD</u>
<u>Total Revenues</u>			
Operating Revenues	\$ 1,337,967	\$ 1,399,644	\$ 1,173,463
Other Revenues	15,203	10,000	13,170
Total Revenues	<u>1,353,170</u>	<u>1,409,644</u>	<u>1,186,633</u>
<u>Total Expenses</u>			
Operating Expenses	\$ 7,102,072	\$ 8,349,317	\$ 7,138,891
Capital Project Expenses	1,786,076	6,026,625	1,759,552
Total Expenses	<u>8,888,148</u>	<u>14,375,942</u>	<u>8,898,443</u>
Net (Uses) of Funds	<u>\$ (7,534,978)</u>	<u>\$ (12,966,298)</u>	<u>\$ (7,711,810)</u>
Las Virgenes Share	<u>(5,319,694)</u>	<u>(8,852,064)</u>	<u>(5,323,177)</u>
Triunfo Share	<u>(2,215,284)</u>	<u>(4,114,234)</u>	<u>(2,388,633)</u>

Joint Powers Authority Operations
Quarterly Update - Comparison to Budget & Prior Year at December 31, 2016
FY 16-17 Year To Date

	<u>FY 15-16 Actual YTD</u>	<u>FY 16-17 Budget YTD</u>	<u>FY 16-17 Actual YTD</u>
<u>Las Virgenes Share:</u>			
<u>Total Revenues</u>			
Operating Revenues	\$ 944,605	\$ 988,149	\$ 828,465
Other Revenues	10,733	7,060	9,298
Total Revenues	<u>955,338</u>	<u>995,209</u>	<u>837,763</u>
<u>Total Expenses</u>			
Operating Expenses	\$ 4,893,328	\$ 5,592,475	\$ 4,918,696
Capital Project Expenses	1,260,970	4,254,797	1,242,244
Total Expenses	<u>6,154,297</u>	<u>9,847,273</u>	<u>6,160,940</u>
Net (Uses) of Funds - LV	<u>\$ (5,198,959)</u>	<u>\$ (8,852,064)</u>	<u>\$ (5,323,177)</u>
<u>Triunfo Share:</u>			
<u>Total Revenues</u>			
Operating Revenues	\$ 393,362	\$ 411,495	\$ 344,998
Other Revenues	4,470	2,940	3,872
Total Revenues	<u>397,832</u>	<u>414,435</u>	<u>348,870</u>
<u>Total Expenses</u>			
Operating Expenses	\$ 2,208,744	\$ 2,756,842	\$ 2,220,195
Capital Project Expenses	525,106	1,771,828	517,308
Total Expenses	<u>2,733,851</u>	<u>4,528,669</u>	<u>2,737,503</u>
Net (Uses) of Funds - TSD	<u>\$ (2,336,019)</u>	<u>\$ (4,114,234)</u>	<u>\$ (2,388,633)</u>
Total JPA Net (Uses) of Funds	<u>\$ (7,534,978)</u>	<u>\$ (12,966,298)</u>	<u>\$ (7,711,810)</u>

Joint Powers Authority Operations

Quarterly Update - Comparison to Budget & Prior Year at December 31, 2016

	FY 15-16 Actual YTD	FY 16-17 Budget YTD	FY 16-17 Actual YTD
Total Operating Revenues	\$ 1,337,967	\$ 1,399,644	\$ 1,173,463
RW Pump Station	607,998	716,212	636,556
RW Tanks & Reservoirs	47,747	62,690	31,888
RW System Operations	19,536	19,719	18,363
RW Distribution	40,514	59,833	63,848
Sewer	69,367	125,350	52,131
Waste Water Treatment	3,723,047	4,039,357	3,470,022
Composting	1,979,483	2,620,012	2,079,979
Centrate Treatment	170,657	200,526	196,527
Adminstration	443,723	505,618	589,577
Total Operating Expenses	7,102,072	8,349,317	7,138,891
Net Operating (Expenses)	\$ (5,764,105)	\$ (6,949,673)	\$ (5,965,428)

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

**Subject : Rancho Las Virgenes Raw Sludge Wet Well Recirculation Pump
Modifications Project: CEQA Determination and Call for Bids**

SUMMARY:

On August 16, 2016, the Administering Agent/General Manager executed a professional services agreement with Pacific Advanced Civil Engineering, Inc. (PACE), in the amount of \$31,716, for plans and specifications to remove and replace the existing sludge recirculation pump at the Rancho Las Virgenes Composting Facility. The design is now complete, and staff recommends issuance of a Call for Bids for the project.

RECOMMENDATION(S):

Find that the work is exempt from the California Environmental Quality Act and approve the issuance of a Call for Bids for the Rancho Las Virgenes Raw Sludge Wet Well Recirculation Pump Modifications Project.

FISCAL IMPACT:

No

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

There is no financial impact associated with this action.

DISCUSSION:

The Rancho Las Virgenes Composting Facility was designed with a dedicated recirculation pump to suspend and recirculate solids within the sludge wet wells at the Dewatering Building. The pump was intended to suspend solids prior to pumping the sludge to the digesters. Without recirculation, the solids coagulate and settle out within the wet wells, requiring costly cleaning. However, since its installation in 1992, the recirculation pump has not performed as intended and was taken out of service due to pump failure. Currently, staff uses one of the two

digester pumps to temporary recirculate the wet wells. Although this work-around is maintaining the suspension of solids in the sludge, only one digester pump is left to feed sludge to the digesters, impacting the redundancy of the system. If one of the digester pumps fails, sludge pumping could be interrupted.

The project consists of a new positive displacement pump to replace the existing centrifugal pump, in-line grinder, flowmeter and modulating plug valve for the discharge line into each well, piping/fittings at new grinder/isolation valve and associated electrical/instrumentation work. The new pump system will restore redundancy for the digester pump system. Also, the pump will assist in maintaining proper sludge solids suspension within the wet wells, as well as controlling the concentration of the sludge sent to the digesters.

The Engineer's Estimate for the construction is \$202,429, which exceeds the current budget of \$149,000 for the project. Once the bids have been received, staff will return to the Board to request an additional appropriation for the project, if necessary.

The work is exempt from the California Environmental Quality Act (CEQA), pursuant to Section 15301(b) of the CEQA Guidelines, because it involves only minor alterations to an existing facility with no expansion of use. Attached is a Notice of Exemption that staff proposes to file, pending Board approval of the CEQA Determination.

The proposed bid schedule is as follows:

Call for Bids	February 6, 2017
1st Advertisement	February 9, 2017
2nd Advertisement	February 16, 2017
Pre-Bid Meeting	February 23, 2017
Bids Open	March 16, 2017
Award of Contract	April 3, 2017
Project Completion	July 2017(EST)

Prepared by: Jared Q. Adams, P.E., Associate Engineer

ATTACHMENTS:

Notice Inviting Sealed Proposals
Notice of Exemption

**NOTICE INVITING SEALED PROPOSALS (BIDS)
RAW SLUDGE WET WELL RECIRCULATION MODIFICATIONS**

NOTICE IS HEREBY GIVEN that the Board of Directors of the Las Virgenes-Triunfo Joint Powers Authority (JPA) invites and will receive sealed proposals (bids) up to the hour of **3:00PM** on **March 16, 2017**, for furnishing the work described in the contract documents. Bids received after the time stated in the Call for Bids will not be accepted and will be returned, unopened, to the bidder. The time shall be determined by the time on the receptionist telephone console in our Headquarters lobby. Proposals will be publicly opened and read aloud at the office of the JPA, 4232 Las Virgenes Road, Calabasas, California 91302. Said bids shall conform to and be responsive to the Specifications and Contract Documents for said work as heretofore approved by the JPA.

A **mandatory** pre-bid tour will be conducted at **9:00AM** on **February 23, 2017**. The meeting will begin at the Rancho Las Virgenes Composting Facility at 3700 Las Virgenes Road, Calabasas, CA 91302. Attendance at the pre-bid conference is a condition precedent to submittal of the bid and the JPA will not consider a bid from any bidder not represented at the pre-bid conference. Questions regarding the project may be directed to Project Manager Jared Q. Adams at (818) 251-2147.

Sets of contract documents may be downloaded for free by going to <http://www.LVMWD.com/Ebidboard> and following the links to this project.

In order to be placed on the plan holder's list, contractors shall register for free as a document holder for this project on E-bid Board by going to www.LVMWD.com/Ebidboard and following the links to this project. Addendum notifications will be issued through Ebidboard.com, but may also be provided by calling the JPA's Project Manager. Although E-bid Board will fax and/or email all notifications to registered plan holders after the JPA uploads the information, Bidders are responsible for obtaining all addenda and updated contract documents.

Each bid must be on the JPA bid form and shall be sealed and filed with the JPA at or before the time stated in the Notice.

No Contractor or Subcontractor may be listed on a bid proposal for a public works project submitted on or after March 1, 2015 unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. No Contractor or Subcontractor may be awarded a contract for public work on a public works project awarded on or after April 1, 2015 unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. Effective January 1, 2016, no Contractor or Subcontractor may perform on a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. This project is subject to compliance monitoring and enforcement by the DIR.

All terms and conditions contained in the Specifications and Contract Documents shall become part of the contract. The Board of Directors of the JPA reserves the right to reject any and all bids and to waive any and all irregularities in any bid. No bidder may withdraw his bid after the said time for bid openings until 60-days thereafter or until the JPA has made a final award to the successful bidder or has rejected all bids, whichever event first occurs.

The Board of Directors of the JPA reserves the right to select the schedule(s) under which the bids are to be compared and contract(s) awarded.

**BY ORDER OF THE GOVERNING BODY OF LAS
VIRGENES-TRIUNFO JOINT POWERS AUTHORITY**

Dated

*James Wall
Chair*

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

County Clerk
County of: _____

From: (Public Agency): _____

(Address)

Project Title: _____

Project Applicant: _____

Project Location - Specific:

Project Location - City: _____ Project Location - County: _____

Description of Nature, Purpose and Beneficiaries of Project:

Name of Public Agency Approving Project: _____

Name of Person or Agency Carrying Out Project: _____

Exempt Status: **(check one):**

- Ministerial (Sec. 21080(b)(1); 15268);
- Declared Emergency (Sec. 21080(b)(3); 15269(a));
- Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- Categorical Exemption. State type and section number: _____
- Statutory Exemptions. State code number: _____

Reasons why project is exempt:

Lead Agency
Contact Person: _____ Area Code/Telephone/Extension: _____

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: _____ Date: _____ Title: _____

Signed by Lead Agency Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code.
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Date Received for filing at OPR: _____

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

**Subject : Tapia Water Reclamation Facility Primary Clarifier Nos. 2 and 3
Rehabilitation Project: Final Acceptance**

SUMMARY:

On September 6, 2016, the Board awarded a construction contract to Spiess Construction Company, Inc. (Spiess), in the amount of \$763,160, for the Tapia Water Reclamation Facility Primary Clarifier Nos. 2 and 3 Rehabilitation Project. There was one change order issued during construction. Change Order No. 1, a deductive change order in the amount of \$14,396, was administratively approved by the Administering Agent/General Manager. The work has been completed, and there are no outstanding issues to prevent acceptance of the project. As a result, staff recommends filing a Notice of Completion, extending the contract duration by 37 calendar days, authorizing the Administering Agent/General Manager to approve a change of scope for inspection services, and releasing the retention as stipulated in the contract documents.

RECOMMENDATION(S):

Execute a Notice of Completion and have the same recorded; extend the contract duration by 37 calendar days; authorize the Administering Agent/General Manager to approve a change of scope for inspection services, in the amount of \$2,881.50; and, in the absence of claims from subcontractors and others, release the retention, in the amount of \$37,438.20, within 30 calendar days after filing the Notice of Completion for the Tapia Water Reclamation Facility Primary Clarifier Nos. 2 and 3 Rehabilitation Project.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of the project was \$865,086.50. Sufficient funding for the project is available in the adopted Fiscal Year 2016-17 JPA Budget and with the additional appropriation approved

by the JPA Board on September 6, 2016. The total appropriation for the project was \$946,160 and no additional appropriation is required.

Following is a summary of the total project cost:

Description	Cost
<u>Professional Services:</u>	
Design	\$63,422
<u>Construction:</u>	
Construction Award	\$763,160
Change Order No. 1	(\$14,396)
Coating Inspection Services	\$12,920
Change of Scope No. 1	\$2,881.50
<u>Administrative</u>	
District Labor	\$25,898
G&A	\$11,201
Total Project Cost	\$865,086.50

DISCUSSION:

Background:

This project is the second of a multi-year effort to rehabilitate all five primary sedimentation tanks at the Tapia Water Reclamation Facility. The work consisted of concrete repair within the vapor spaces of both clarifiers, epoxy coating of the concrete surfaces subject to degradation from the wastewater, epoxy coating of the aluminum beams, replacement of all eight launders with new stainless steel launders, replacement of the six diffusers with new stainless steel diffusers, and replacement of a corroded, unused plug valve with a stainless steel blind flange.

Construction work to rehabilitate Primary Clarifier No. 1 was completed in November 2014. Construction work on Primary Clarifiers Nos. 2 and 3 is now complete, leaving only Primary Clarifiers Nos. 4 and 5 remaining.

Change Orders:

There was one change order issued during construction and approved by the Administering Agent/General Manager. Change Order No. 1, a deductive change order in the amount of \$14,396, was prepared by staff and consisted of the fabrication and installation of stainless steel stop plates and frames on four of the launders, new aluminum beam bracket assemblies that support the foul air removal pipe, new caulking for all of the expansion joints within the epoxy-coated area, increased thickness of epoxy coating on the north end of both clarifiers, elimination of Bid Item No. 5 (moderate repair of concrete surfaces), and a reduction in the area of major concrete surface repairs as addressed by Bid Item No. 4. In addition, Change Order No. 1 extended the contract duration by 25 calendar days.

Contract Extension:

Delays due to inclement weather slowed the progress of the work significantly at times, and the contractor made appropriate schedule adjustments to maintain a safe working environment

and provide a high-quality end product. Given the circumstances and diligence of the contractor, staff recommends that the Board approve a contract extension of 37 calendar days.

Scope Change:

Due to the increase in contract duration caused by inclement weather, CSI, Inc., the coating inspection firm, expended additional resources for the inspection work to ensure a high-quality end product. Staff recommends that the Board authorize the Administering Agent/General Manager to approve a change of scope, in the amount of \$2,881.50, to account for the additional inspection work. The change of scope would increase the contract amount from \$12,920.00 to \$15,801.50.

Prepared by: Coleman Olinger, P.E., Associate Engineer

ATTACHMENTS:

Notice of Completion

RECORDING REQUESTED BY

Las Virgenes Municipal Water District

AND WHEN RECORDED MAIL TO

Name Susan Brown
Street Address Las Virgenes Municipal Water District
4232 Las Virgenes Road
City & State Calabasas, CA 91302
Zip

SPACE ABOVE THIS LINE FOR RECORDER'S USE

T 420 LEGAL (9-94)

Notice of Completion

NOTICE IS HEREBY GIVEN THAT:

- 1. The undersigned is the owner of the interest or estate stated below in the property hereinafter described.
2. The full name of the undersigned is Las Virgenes Municipal Water District (NAME).
3. The full address of the undersigned is 4232 Las Virgenes Road, Calabasas CA 91302

(NUMBER AND STREET, CITY, STATE, ZIP). OWNER IN FEE

- 4. The nature of the title of the undersigned is OWNER IN FEE (E.G., owner in fee OR vendee under contract of purchase OR lessee OR OTHER APPROPRIATE DESIGNATION).
5. The full names and full addresses of all persons, if any, who hold title with the undersigned as joint tenants or as tenants in common are:

N/A

- 6. The names of the predecessors in interest of the undersigned, if the property was transferred subsequent to the commencement of the work of improvement herein referred to are (OR IF NO TRANSFER WAS MADE, INSERT THE WORD "none"):

N/A

- 7. A work of improvement on the property hereinafter described was completed on February 6, 2017 (DATE).
8. The name of the original contractor, if any, for the work of improvement was Spiess Construction Co, Inc. (NAME OF CONTRACTOR, OR IF NO CONTRACTOR FOR THE WORK OF IMPROVEMENT AS A WHOLE, INSERT THE WORD "none"). [IF NOTICE COVERS COMPLETION OF CONTRACT FOR ONLY PART OF THE WORK OF IMPROVEMENT, ADD: The kind of work done or material furnished was N/A (GIVE GENERAL STATEMENT, E.G., furnishing of concrete for sidewalks).

- 9. The property on which the work of improvement was completed is in the City of Los Angeles, County of Los Angeles, State of California, and is described as follows:
Tapia Water Reclamation Facility Primary Clarifiers Nos. 2 and 3 Rehabilitation Project

(set forth description of jobsite sufficient for identification, using legal description if possible).

- 10. The street address of the said property is None (NUMBER AND STREET, OR, IF THERE IS NO OFFICIAL STREET ADDRESS, INSERT THE WORD "none".)

Dated: February 6, 2017

Las Virgenes Municipal Water District

(SIGNATURE)
Jay Lewitt, Secretary of the Board
(TYPED NAME)

VERIFICATION

I, the undersigned, say:
I am the person who signed the foregoing notice. I have read the above notice and know its contents, and the facts stated therein are true of my own knowledge.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Calabasas, California, this 6th day of February, 2017

(SIGNATURE)
Jay Lewitt, Secretary of the Board

DO NOT RECORD

Recommended Procedure in the Preparation of a Notice of Completion

A notice of completion must be filed for record *within 10 days* after completion of the work of improvement (to be computed exclusive of the day of completion), as provided in section 3093, Civil Code.

The "owner" who must file for record a notice of completion of a building or other work of improvement means the owner (or his successor in interest at the date of notice is filed) on whose behalf the work was done, though his ownership is less than the fee title. For example, if A is the owner in fee, and B, lessee under a lease, causes a building to be constructed, then B, or whoever has succeeded to his interest at the date the notice is filed, must file the notice.

If the ownership is in *two or more persons as joint tenants or tenants in common*, the notice may be signed by any one of the co-owners (in fact, the foregoing form is designed for giving of the notice by only one co-tenant), but the names and addresses of the other co-owners must be stated in paragraph 5 of the form.

In paragraphs 3 and 5, the full address called for should include street number, city, county and state.

As to paragraph 6, insert the date of completion of the work of improvement as a *whole* if applicable. However, if the notice is to be given only of completion of a particular contract, where work of improvement is made pursuant to two or more original contracts, strike the words "a work of improvement" and insert a general statement of the kind of work done or materials furnished pursuant to such contract (e.g. "The foundations for the improvements").

If the notice is to be given as a notice of completion of the work of improvement as a *whole*, insert the name of the prime contractor, if any, in paragraph 7. No contractor's name need be given if there is no general contractor, e.g., on so-called "owner-builder jobs". However, if the notice is to be given only of completion of a particular contract, where work of improvement is made pursuant to two or more original contracts, insert the name of the contractor who performed that particular contract.

Paragraph 8 should be completed only where the notice is signed by a successor in interest of the owner who caused the improvement to be constructed.

In paragraph 9, insert the *full legal* description, not merely a street address or tax description. Refer to deed or policy of title insurance. If the space provided for description is not sufficient, a rider may be attached.

In paragraph 10, show the street address, if any, assigned to the property by any competent public or governmental authority.

**NOTICE
OF COMPLETION**

CHICAGO TITLE COMPANY



WESTERN DIVISION HEADQUARTERS
245 S. LOS ROBLES AVENUE, SUITE 105
PASADENA, CALIFORNIA 91101-2820
(818) 432-7600

CHICAGO TITLE COMPANY



February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : Pure Water Project Las Virgenes-Triunfo: Award of Modeling of Las Virgenes Reservoir Related to Indirect Potable Reuse Using Surface Water Augmentation

SUMMARY:

On September 6, 2016, the JPA Board authorized staff to issue a Request for Proposals for modeling of Las Virgenes Reservoir related to indirect potable reuse using surface water augmentation. Proposals were received from CDM Smith; HDR, Inc., Trussell Technologies, Inc. and Water Quality Solutions, Inc. The proposals were reviewed by an evaluation committee consisting of LVMWD and TSD staff. Based on the proposed scope of work, project understanding, experience and fee proposal, staff recommends accepting the proposal from Trussell Technologies, Inc., in the amount of \$279,678, which includes an optional task to convene an Independent Advisory Panel.

RECOMMENDATION(S):

Accept the proposal from Trussell Technologies, Inc., and authorize the Administering Agent/General Manager to execute a professional services agreement, in the amount of \$279,678, for modeling of Las Virgenes Reservoir related to indirect potable reuse using surface water augmentation.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of the work is \$279,678, which includes an optional task for \$79,988 to convene an Independent Advisory Panel. Sufficient funds are available in the adopted Fiscal Year 2016-17 JPA Budget for the work. A budget of \$1,750,000 was provided for the Pure Water Project Las Virgenes-Triunfo under CIP No. 10587, which is allocated 70.6% to LVMWD and 29.4% to TSD. No additional appropriation is required. As shown in the table below, a total of

\$1,173,569 would be committed to-date with the Board’s acceptance of this proposal.

Plan of Action (MWH)	\$ 174,716
Basis of Design Report (MWH)	\$ 462,825
Basis of Design Report (MWH) Amendment 1	\$ 17,000
Basis of Design Report (MWH) Amendment 2	\$ 11,300
Encino Reservoir Investigation (RMC)	\$ 52,820
Outreach (Katz & Associates)	\$ 41,115
Outreach (Katz & Associates) Amendment 1	\$ 15,383
Outreach (Katz & Associates) Amendment 2	\$ 8,615
Financial Consultant (The PFM Group)	\$ 30,000
LADWP Contribution	\$ (62,370)
Demo Project Preliminary Design (CDM Smith)	\$ 142,487
Trussell Tech Mixing Study	\$ 199,690
Trussell Tech IAP Option	\$ 79,988
TOTAL	\$ 1,173,569

DISCUSSION:

Background:

On August 1, 2016, the JPA Board directed staff to develop the next steps for the Pure Water Project Las Virgenes-Triunfo. The next steps fall into seven categories: (1) funding and financing, (2) advocacy, (3) technical studies, (4) outreach, (5) demonstration project, (6) environmental analysis and (7) potential institutional issues. The steps were further refined on September 6, 2016, when the Board authorized staff to issue requests for proposals for the preliminary design and environmental review of a demonstration project, technical studies to support compliance with the draft surface water augmentation regulations and initial work to support the future environmental review of the Pure Water Project.

A critical component to the success of the Pure Water Project will be the ability to comply with the final indirect potable reuse surface water augmentation regulations, in particular the mixing and dilution criteria for purified water placed in Las Virgenes Reservoir. A request for proposals was released on September 6, 2016, to engage a consultant to develop a hydrodynamic model of the reservoir and evaluate potential operating scenarios that would provide a foundation for compliance with the regulations. In addition, the consultant will provide conclusions and recommendations from the model results that could be incorporated in the project, such as a preferred purified water discharge location and reservoir management best practices.

Scope of Work:

Specifically, the scope of work for the effort consists of the following items:

- Review and interpret draft and final (when available) indirect potable reuse surface water augmentation regulations to develop model and operating scenarios, evaluate modeling results, and provide conclusions and recommendations.
- Develop and calibrate a hydrodynamic model of Las Virgenes Reservoir to evaluate the dilution and mixing characteristics of the reservoir under various operating scenarios.

- Develop operating scenarios to be simulated using the model.
- Coordinate and consult with State Water Resources Control Board, Division of Drinking Water representatives, as appropriate, to ensure that modeling approach is acceptable for compliance with proposed regulations for surface water augmentation.
- Provide conclusions and recommendations from the modeling results to maximize the operational flexibility of proposed project. The recommendations should include a preferred purified water discharge location and reservoir management best practices.

Request for Proposals and Consultant Selection:

On September 6, 2016, the JPA Board authorized staff to issue a Request for Proposals for modeling of Las Virgenes Reservoir related to indirect potable reuse using surface water augmentation. Proposals were received from CDM Smith; HDR, Inc., Trussell Technologies, Inc. and Water Quality Solutions, Inc. The following table summarizes key elements of the four proposals.

Firm	Cost	Duration	Notes
CDM Smith	\$219,270	11 months	Cost includes option for a 3-D model
HDR	\$196,426	6 months	
Trussell Tech	\$199,690	10 months	Provided optional task for Independent Advisory Panel for \$79,988
Water Quality Solutions	\$325,342	12 months	

Based on the proposed scope of work, project understanding, experience and fee proposal, staff recommends accepting the proposal from Trussell Technologies, Inc., in the amount of \$279,678, which includes an optional task of convening an Independent Advisory Panel to evaluate the technical, scientific and regulatory aspects of the project for \$79,988.

Trussell Technologies and its sub-consultant, Flow Science, have extensive experience in three-dimensional hydrodynamic modeling for the two other surface water augmentation projects currently proposed in California. The experience includes on-going engagement with the State Water Resources Control Board Division of Drinking Water (DDW) and the expert panel that developed the draft regulations for surface water augmentation. These draft regulations are expected to be released for public review by DDW in the first quarter of 2017. As an optional task, Trussell Technologies proposed convening an Independent Advisory Panel (IAP) to evaluate the technical, scientific and regulatory aspects of Pure Water Project Las Virgenes-Triunfo. The two other agencies currently proposing surface water augmentation projects in California (City of San Diego and Padre Dam Municipal Water District) have both assembled IAPs to provide review and guidance for their projects.

Staff recommends that the Board approve the optional task for the IAP, but direct staff to wait to authorize that portion of the work until after the draft regulations have been released and reviewed. Once the regulations have been reviewed, staff can discuss the proposal further

with DDW and determine whether an IAP is necessary. The modeling is expected to take 10 months to complete and, if an IAP is used, an additional 5 months would be required.

Prepared by: David R. Lippman, P.E., Director of Facilities and Operations

ATTACHMENTS:

Tussell Technologies Proposal

Tussell Technologies Fee Proposal



December 13, 2016

Las Virgenes-Triunfo Joint Powers Authority
David R. Lippman, P.E.
4232 Las Virgenes Road
Calabasas, California 91302

Subject: Proposal for Modeling of Las Virgenes Reservoir in Support of Surface Water Augmentation Indirect Potable Reuse Project

Dear Mr. Lippman,

From its beginning five decades ago, the Las Virgenes-Triunfo Joint Powers Authority (JPA) has been a leader in water recycling. Recently the JPA made the decision to proceed with indirect potable reuse through surface water augmentation (SWA) at the Las Virgenes reservoir. This newest form of potable reuse is an attractive solution because it transforms the recycled water into a more valuable resource and offers the potential to end discharges to Malibu Creek, a regulatory headache that the JPA has faced for decades.

Since draft SWA regulations were developed in late 2014, the Division of Drinking Water (DDW) has been in dialogue with an Expert Panel and the industry about the key details. WaterReuse California sought to assist DDW with the regulatory development process by hiring Trussell Tech to prepare a White Paper on SWA benefits. Recently, DDW announced it will release its proposed SWA regulations in early 2017. There are currently two SWA projects in the advanced stages of permitting: one sponsored by the City of San Diego at the Miramar reservoir (6,682 ac-ft) and one by the Padre Dam Municipal Water District at Lake Jennings (9,790 ac-ft). Trussell Tech is leading the permitting strategy for both projects and we are using this modeling RFP to introduce you to the team we have in place at Padre Dam. There is no other consultant that has been engaged in both the San Diego and Padre Dam projects, and the experience we have gained has taught us that the challenge in reservoir modeling is not just developing and calibrating the model itself *but understanding how to use the model to achieve DDW approval for a project that allows maximum flexibility for the sponsor.*

Trussell Technologies, Inc., a firm founded in the 21st century and focused on 21st century technology, has assembled the perfect team for your project. We bring experience with both of the State's active SWA projects and a detailed understanding of the SWA regulation. We will use that understanding to ensure that the reservoir scenarios modeled lead to approval of the ideal project. Our project lead and President of the Firm, Dr. R. Shane Trussell, brings direct experience with both San Diego and Padre projects and Flow Science is doing an excellent job at the Padre project, arguably the closest parallel to the JPA project at Las Virgenes Reservoir.

We look forward to discussing our proposal with you in greater detail at your convenience.

Sincerely yours,

A handwritten signature in black ink that reads "R. Rhodes Trussell". The signature is written in a cursive, professional style.

R. Rhodes Trussell, Ph.D., P.E.
Founder and Chairman
Trussell Technologies, Inc.

232 North Lake Avenue, Suite 300 Pasadena, CA 91101-1862 (626) 486-0560



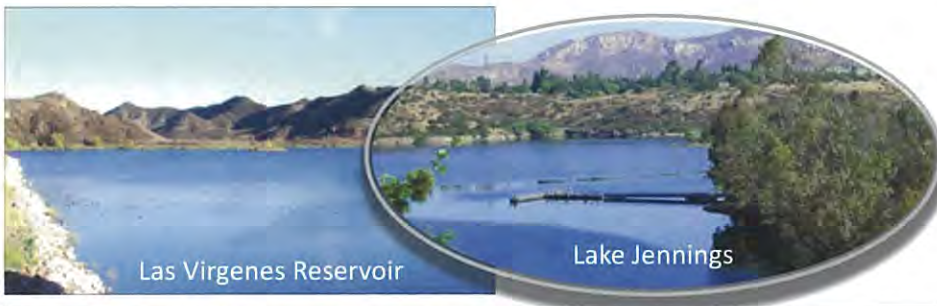
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8. Quality Control Process
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Appendix B - Certificate of Insurance
Appendix C - Cost and Rate Schedule <i>(included separately)</i>



EXECUTIVE SUMMARY

The Las Virgenes–Triunfo Joint Powers Authority (JPA) is pursuing the development of a potable reuse project to deliver purified water to the Las Virgenes Reservoir. This surface water augmentation (SWA) project will create a locally controlled, drought-proof, sustainable water supply for its consumers. The JPA’s pursuit of SWA is a notable effort as this is only the third agency to engage in detailed reservoir modeling in the State of California. Reservoir modeling is a requirement of the SWA regulations that the Division of Drinking Water (DDW) has been actively drafting with the support of the State Expert Panel. In response to this request for proposal, Trussell Technologies, Inc. has once again joined forces with Flow Science, Inc. to draw upon our recent project experience modeling Lake Jennings Reservoir on behalf of Padre



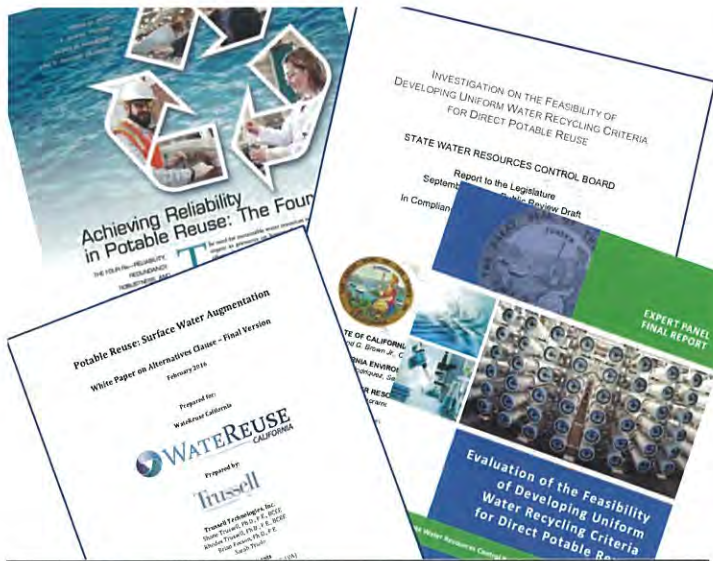
Similarities between Las Virgenes and Lake Jennings in size, flows, and operational conditions play to strengths and experience of Trussell Tech / Flow Science team.

Dam Municipal Water District and Helix Water District in San Diego County. This past effort is most relevant for the current modeling because Lake Jennings Reservoir is (1) of similar size to the

Las Virgenes Reservoir, (2) will receive similar flow rates, and (3) faces similar demands under its most challenging operational conditions. *Navigating a path forward under all conditions—both routine and emergency—will be the key to regulatory success.*

Fresh from the success of the Padre Dam effort, the team can quickly orient the project to focus on the key requirements for the initial modeling effort. Supplementing our team is Debbie Burris who authored the Engineering Report for approval of Orange County Water District’s 100 MGD facility, and is currently collaborating with Trussell Tech to draft the first Engineering Report for SWA in the State of California, at the Miramar Reservoir for the City of San Diego.

Trussell Technologies’ on-going engagement with the Division of Drinking Water (DDW) provides us unique insight into the challenges and paths forward in the permitting of innovative potable reuse projects. Trussell Tech has also been actively involved in shaping the industry’s views on potable reuse by interacting extensively with the State Expert Panel, pioneering numerous research efforts and publications, authoring White Papers on behalf of WateReuse California, and leading and developing the permitting strategies for the two largest SWA projects in California (San Diego and Padre Dam). For this specific type of work (modeling reservoirs for potable reuse in California), only two firms have successfully performed such modeling in the past and our partner, Flow Science, is one of those firms. Using Flow Science’s extensive experience with modeling reservoirs of all sizes along with Trussell Tech’s regulatory experience, we can develop a meaningful approach that delivers permitting results with a



Trussell Tech has led numerous efforts to advance innovations and regulations for potable reuse, including SWA.

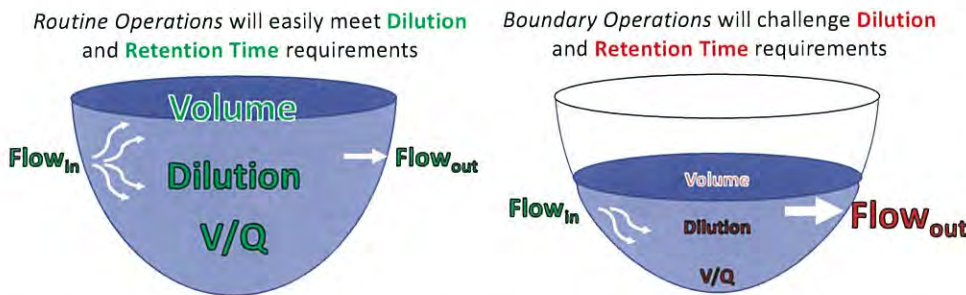
strategic level of effort.

The first task for the project team will be to understand the available data, identify data gaps, determine the best means to obtain the significant amount of data required, and develop strategies to address any data issues identified. The project team will develop a model that is calibrated and validated based on a one (1) calendar year period, adjusting the model parameters to match the simulations with observed field data. While 2D models exist, our experience leads us to recommend going directly to a 3D hydrodynamic model using the Estuary and Lake Computer Model (ELCOM) developed by the Centre for

Water Research at the University of Western Australia. While a 2-D model can provide a preliminary estimate of the dilutions that might be achieved, our team’s experience shows limited value in 2-D modeling due to the size of the reservoir and flow rates being considered.

The primary goal of dynamic reservoir modeling is to demonstrate that the reservoir will provide the required regulatory dilutions (100:1 or 10:1) of a 24-h pulse of off-spec water for all possible operating scenarios. The primary challenge faced by a project of this type is determining what are the proper conditions for modeling and justifying the relevance of the modeled conditions. A

team with experience can point LVMWD directly to the key conditions to assess, providing benefits for both schedule and budget. Our team proposes to



work with LVMWD to determine both what typical operating years look like (called *Routine Operations*) and what more challenging non-routine year look like (called *Boundary Operations*). Ensuring compliance with regulatory requirements is critical for both scenarios.

Included in this proposal is an optional task for an Independent Advisory Panel (IAP). To date, all projects that are proposing to perform reservoir augmentation have assembled an IAP and our team recommends that LVMWD follow the same approach. DDW does not have the experience yet to determine when modeling is adequate for project approvals, and IAP engagement provides benefits beyond the regulatory sphere, particularly in building public confidence in the safety of potable reuse.



FIRM PROFILE

Founded in 2003, Trussell Technologies is an environmental engineering firm focused on process and water quality that provides consulting services to water and wastewater agencies. We have earned a reputation for finding cost-effective, practical, and simple solutions to challenging projects, with particular expertise in tackling both technical and regulatory issues.

Trussell Tech’s 27 engineers engage in a range of projects, including treatment process evaluation, pilot testing, design and permitting for water reclamation, potable reuse, drinking water and wastewater projects; brine management; impaired water recovery; and assessment of the significance of microbial and chemical contaminants on public health and the environment. Our engineers use their experience with past successful designs to ensure future success, but when new problems arise, science must also play a critical role in problem solving. Trussell Technologies operates in the nexus between practice and science, with 9 staff members holding Ph.D.’s, and 12 registered engineers with the State of California. The firm is composed of energetic, highly trained men and women under the tutelage of an industry giant, providing just the combination of experience and high-tech talent required to tackle today’s toughest problems.

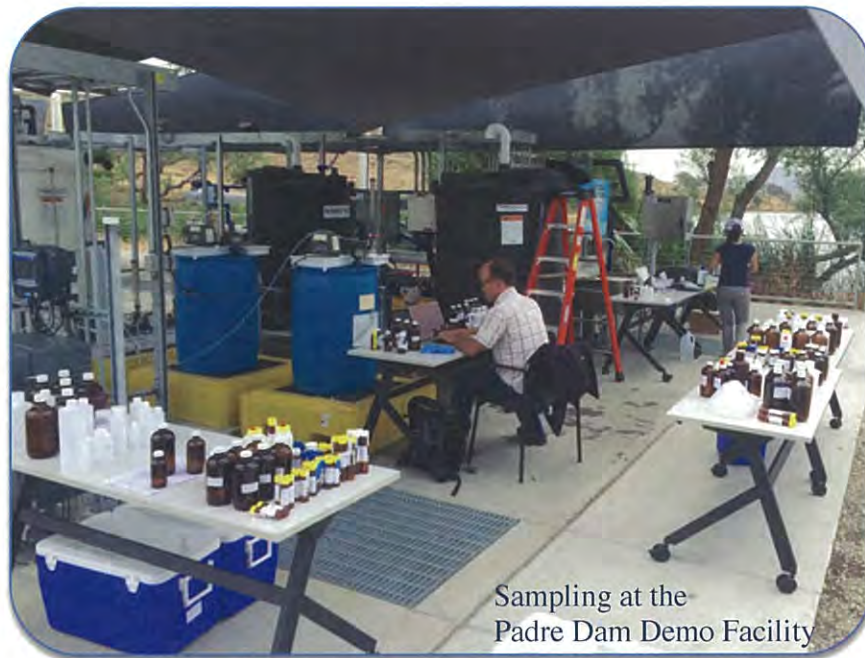
Company Information	
Legal Name	Trussell Technologies, Inc.
Headquarters Address	232 N. Lake Ave, Suite 300 Pasadena, CA 91101
Phone	(626) 486-0560
Additional Offices	380 Stevens Ave., Suite 308 Solana Beach, CA 92075 1939 Harrison St, Suite 600 Oakland, CA 94612
Website	www.trusselltech.com
Years in Business	13
Number of Employees	35
Principal Engineers	Bryan Trussell Shane Trussell

Trussell Tech is a leader in reuse and has a track record of successfully planning and executing potable reuse projects in California. The firm has played, and continues to play, a significant role in the development of treatment processes for reuse projects and in the dialogue with regulators and the scientific community for all aspects of reuse. The firm has also supported the critical planning stages of many potable reuse projects and has been involved with operating facilities to improve their performance and reduce the cost of water.



Our mission is to help our clients make effective choices in the face of increasing uncertainty.

Trussell Tech has been leading the industry through numerous projects focused on potable reuse. These projects include: San Diego Pure Water Program; Monterey Regional Water Pollution Control Agency's (MRWPCA) Pure Water Program, Indirect Potable Reuse Full Advanced Treatment Demonstration Project for Padre Dam Municipal Water District; Potable Reuse Feasibility Study for Santa Fe Irrigation District, San Dieguito Water District and San Elijo Joint Powers Authority; and the Implementation of Extended Testing of Advanced Water Purification Facility (AWPF) for the City of San Diego's 1 MGD facility. Other notable recent projects include Terminal Island Water Reclamation Plant Advanced Water Purification Facility Ultimate Expansion Project for the City of Los Angeles, Bureau of Sanitation, Los Angeles Sanitation (LASAN); and Donald C. Tillman Ground Water Replenishment (GWR) Advanced Water Purification Facility Pilot Project for LASAN.



Sampling at the Padre Dam Demo Facility



PROJECT UNDERSTANDING AND APPROACH

Background

The Las Virgenes–Triunfo Joint Powers Authority (JPA) was formed between the Las Virgenes Municipal Water District (LVMWD) and the Triunfo Sanitation District (TSD) in 1964 to construct, operate and maintain a joint wastewater treatment system for their respective service areas, primarily within the Malibu Creek Watershed. The majority of the recycled water in the area is beneficially reused for irrigation of golf courses, green belts, parks and schools. While the supply of recycled water generally remains constant throughout the year, the demand fluctuates greatly between the summer peak and winter seasons. The excess recycled water is discharged to Malibu Creek. Increasingly stringent water quality requirements are making seasonal discharge to the creek very challenging and would trigger a significant investment in treatment if the JPA continues to discharge.



Figure 1. Surface water augmentation provides an opportunity to beneficially reuse water year round

The JPA is considering an indirect potable reuse project (Project) through surface water augmentation (SWA) at the Las Virgenes Reservoir (LVR). The objective of the Project is to use the region’s excess recycled wastewater for potable reuse, providing a new source of local, reliable and drought-proof water supply. At the same time, the Project will minimize future financial liabilities related to continued seasonal discharge to Malibu Creek. The envisioned Project will use recycled water from the existing Title 22 distribution system and further treat the water at a new Advanced Water Treatment Plant. Advanced treated effluents will be conveyed to the reservoir to be blended with other sources of water, and used as potable water after treatment at the Westlake Filtration Plant (WFP). A critical component to the success of the Project will be the ability to comply with the final indirect potable reuse SWA regulations, in particular the criteria governing dilution and detention time requirements in the LVR. In this study, we propose the development and application of a hydrodynamic computer model to study reservoir dilution and detention times at the LVR, and evaluate Project compliance with the key elements of the SWA regulations.

Project Approach

Trussell Technologies provides a unique perspective on the permitting of SWA projects thanks to (1) our engagement with the Division of Drinking Water (DDW) through the State Expert Panel process, (2) leading and developing the permitting strategy for the two and only SWA projects in California (San Diego and Padre Dam), as well as (3) our involvement with the



Figure 2. Flow Science recently completed modeling for Lake Jennings (9790 AF) for a potable reuse project with Padre Dam MWD and Helix Water District

development of the regulatory construct behind the draft SWA regulations. For this specific type of work—modeling reservoirs for potable reuse in California—only two firms have successfully performed such modeling in the past, and our partner, Flow Science, is one of those firms. Using Flow Science’s extensive experience with modeling reservoirs of all sizes along with Trussell Tech’s regulatory experience, we plan to deliver a meaningful strategy in

the selection of modeling scenarios that will deliver a permit for operation that maximizes the JPA’s operational flexibility.

While 2D models exist, our experience leads us to recommend going directly to a 3D hydrodynamic model for the LVR using the Estuary and Lake Computer Model (ELCOM) developed by the Centre for Water Research at the University of Western Australia. The main reason to run a 2-D model is to provide a preliminary estimate of the dilutions that might be achieved, but due to the size of the LVR and the flows being considered our experience tells us that there is limited value there. ELCOM represents the industry standard for SWA projects and has been used by Flow Science in the dilution and retention study for two recent SWA projects in Southern California: (1) San Vicente Reservoir and (2) Lake Jennings. Lake Jennings has an operational volume around 9,790 AF that makes this project most comparable to the LVR. Our

The ELCOM model is “an effective and robust tool, for simulation of thermoclines and hydrodynamics of the reservoir” and for “assessing options for the purified water inlet location.”—San Diego’s National Water Research Institute (NWRI) independent advisory panel

proposed team members benefit from recently presenting reservoir modeling results to Padre Dam’s

Independent Advisory Panel (IAP), the Division of Drinking Water, and the San Diego Regional Water Quality Control Board in a November 2016 meeting. Although other models do exist that are technically capable of performing this task, the ELCOM is the only model that has been approved by IAPs and DDW to date.

The ELCOM model has been used in predicting hydrodynamics in many lakes and reservoirs throughout the world and a more detailed description of the model can be provided upon request. The inputs to ELCOM include the lake bathymetry, inflow and outflow rates, inflow temperature and salinity, and meteorology data. It predicts water salinity, temperature, velocity, water age, pathogen, and tracer movement and dilution.

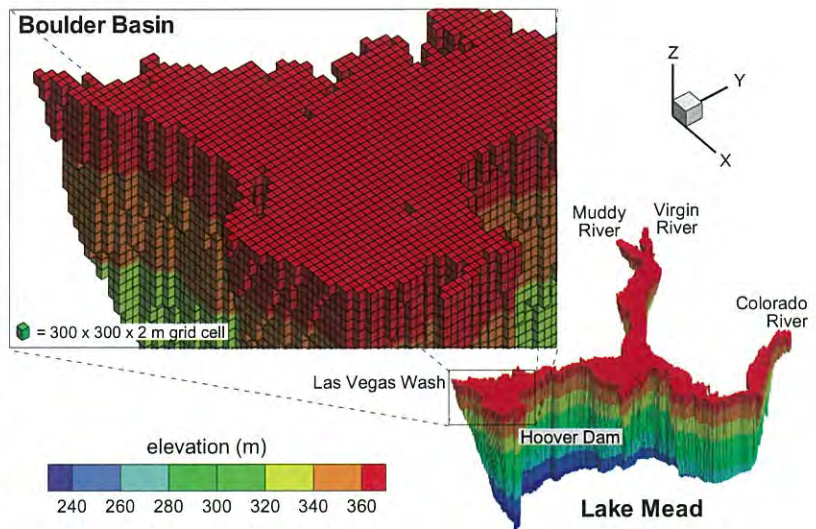


Figure 3. Sample 3D Model Grid for Lake Mead, NV

Baseline Data for Modeling

The first task for the project team will be to understand what data is available, discuss with LVMWD the format of the data, determine the best means to obtain the significant amount of data required, and identify data gaps along with a strategy to address any issues identified. The project team will work to develop a calibrated and validated model based on a one (1) calendar year period by adjusting the model parameters until the simulation results match with observed field data.



Figure 4. Meteorology station at Las Virgenes Reservoir

The ELCOM model requires meaningful meteorological data such as solar radiation, wind speed and direction, air temperature, relative humidity, and precipitation to compute the thermodynamics and hydrodynamics of the reservoir. LVMWD had the foresight to install a meteorology station at the LVR, which will be very useful in this effort. Our team will review the data available from this meteorology station to determine the extent of the information available for this effort and determine if there are any data gaps. If any gaps do exist, it may be possible to use nearby meteorology stations even if they are tens of miles away from the LVR if those stations demonstrate similar wind and temperature patterns to the station at LVR.

Operating Scenarios

The primary goal of dynamic reservoir modeling is to demonstrate that the reservoir will provide



Data Collection

- Perform bathymetric survey
- Meteorological data at LVR
- Evaluate available reservoir data

Operations

- Review historical levels, inflows and outflows
- Document all possible future inflow and outflow scenarios

Project Decisions

- Determine routine and boundary operations
- Bubbler for mixing
- Discharge location
- Discharge pipe and port(s) design

the required regulatory dilutions (100:1 or 10:1) of a 24-h pulse of off-spec water for all possible operating scenarios. The primary challenge faced by a project of this type is determining what are the proper conditions for modeling and justifying how those conditions are most representative. It is important that the conditions selected for modeling results in maximum operational flexibility in the fully developed project. We

Figure 5. Successful reservoir modeling depends on valid data, a well thought through operational strategy, and strategic project decisions

propose to approach this by modeling two types of conditions. First, our team proposes to work with LVMWD to determine what a typical operating year will look like – called *Routine Operations*. To accomplish this, the project team will review historic reservoir operations and will also discuss likely flow and operating scenarios with LVMWD, building on the Basis of Design Report (BODR). To broaden this discussion, the project team will encourage LVMWD to consider scenarios that may occur, but less frequently – called *Boundary Operations*. The Boundary Operations will represent a year where the reservoir is drawn upon to a greater extent for an assumed maintenance event over an extended period of time, where regulatory thresholds for theoretical retention time (V/Q) may not be met. It will be those critical periods, where the reservoir level is low and outflow is high where the reservoir will be most challenged to achieve the required dilution.

Unlike the work at a very large reservoir like San Vicente, the reservoir volume can and will vary in a smaller reservoir like LVR. Our team will draw upon our

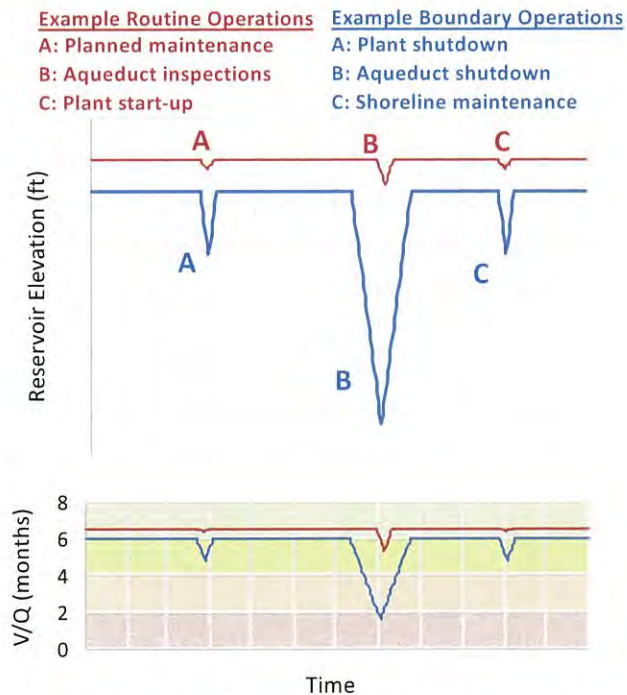


Figure 6. Routine Operations will define a typical year while the Boundary Operations will describe conditions under greater withdrawals where the regulatory requirements will be more challenging to meet

experience modeling Lake Jennings (a similar size reservoir and project) that was recently completed by Flow Science. The maximum capacity of Lake Jennings is approximately 9,790 acre-ft and the historical average lake volume is 7,700 acre-ft. It is mainly used to store imported raw water from San Diego County Water Authority (SDCWA) during the low demand season and supplement raw water for feed to the water treatment plant during the high demand season or under other emergency conditions. Lake Jennings operations generally involve several routine and non-routine events: the annual SDCWA shutdown for maintenance purposes, unplanned SDCWA shutdowns for emergency events, shoreline maintenance on the lake, and a 75-day emergency water storage policy. These events generally result in a prolonged drawdown of the lake. With the known influences, the project team ran several modeling scenarios including *Routine Operations* and *Boundary Operations* based on the anticipated lake operations. These scenarios were specifically designed to address the dilution requirements under conditions that the future project would likely encounter. This intimate knowledge and experience in identifying and developing such operating scenarios for Lake Jennings will be invaluable for the study of LVR. In addition, Flow Science has extensive experience modeling and studying the hydrodynamics and water quality of lakes and reservoirs in Southern California, including modeling the SWA project at San Vicente Reservoir and the water quality study at Lake Perris.

Potential Engineering Solutions

While issues related to compliance with reservoir criteria are not anticipated, the Project Team has experience evaluating a variety of engineered solutions and their ability to improve performance to meet the reservoir requirements. For example, both the San Diego and Padre Dam projects are evaluating operations at the lower end of the theoretical V/Q requirements. Consequently, achieving adequate dilution ratios can be challenging. Modeling efforts in those two efforts identified that engineered solutions—including the

use of inlet diffusers (San Diego) and aerators (Padre Dam)—could promote mixing and ensure that minimum dilution ratios of 10:1 could be achieved even during challenging conditions. The

Project Team comes to the LVR modeling effort with these insights, and can help guide LVMWD in appropriate strategies as the modeling findings are developed.

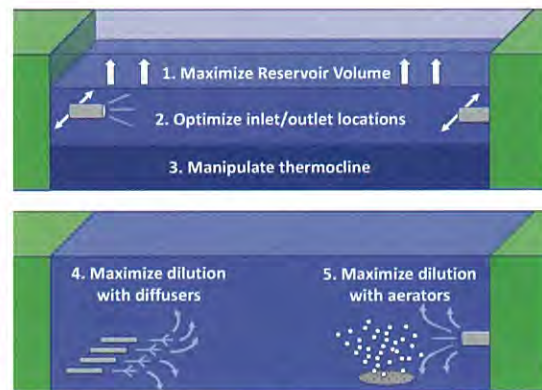


Figure 7. Our team has experience with engineered solutions to enhance dilution should it be needed

Independent Advisory Panel (Optional Task)

In response to California Senate Bill 918, the Division of Drinking Water (DDW) has been drafting surface water augmentation regulations for the past few years. The draft regulations are now expected to be released for public review in the first quarter of 2017. These draft regulations have been informed by project experience in San Diego as well as by an appointed State Expert Panel review that was organized by the National Water Research Institute (NWRI). To date, all projects that are proposing to perform reservoir augmentation have assembled an Independent Advisory Panel (IAP) to provide review and guidance of the project concepts and development.

Our team recommends that LVMWD follow the same approach and engage an IAP to review the modeling work as DDW does not have the experience yet to determine when modeling is adequate for project approvals. Without the support of an IAP, DDW is less likely to embrace a new idea or approach. Even the notable potable reuse groundwater project that has been operated by the Orange County Water District (OCWD) since 2008 continues to update and report to their IAP on an annual basis. The IAP will assist with public perception in addition to regulatory approval.

Water Quality Modeling and Tracer Study (Future Tasks)

As the project develops, LVMWD will be required to perform a tracer study and possibly perform water quality modeling to support permitting. A water quality module, Computational Aquatic Ecosystem Dynamic Model (CAEDYM), can be seamlessly coupled with the calibrated ELCOM model to simulate water quality parameters in the reservoir such as dissolved oxygen (DO), nutrients, organic matter, pH and chlorophyll-a. ELCOM provides the hydrodynamic “driver” to transport and mix the biological and chemical water quality parameters that are the essence of CAEDYM. The coupled model can be used to study the spatial and temporal relationships between physical, biological, and chemical variables in the LVR. It is recommended that the initial effort focus on the DDW requirements of the draft SWA regulations and that future efforts could provide water quality modeling as required.

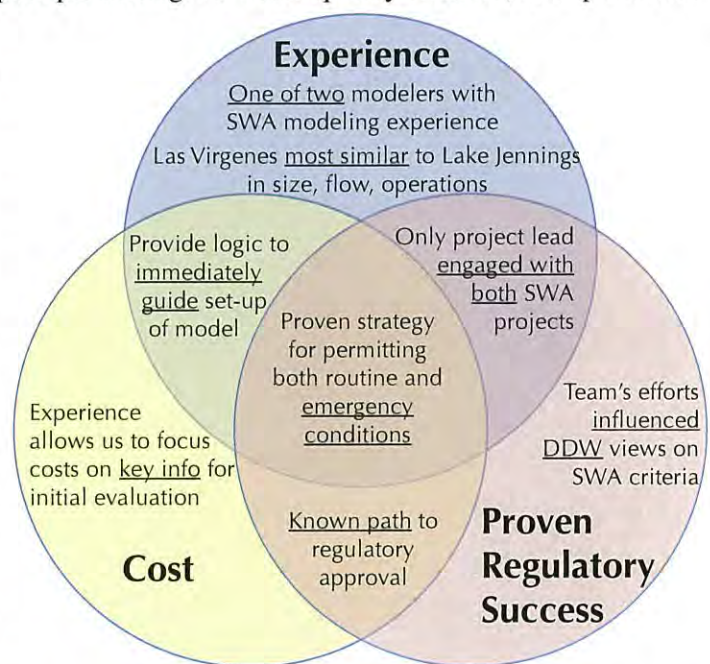


Figure 8. Our team's proven experience in developing and securing regulatory approval for innovative potable reuse projects like this one is unrivalled

A tracer study is required for all potable reuse projects—groundwater recharge or surface water augmentation. For groundwater projects, the tracer study is required prior to project start up or upon project start up (after facilities are constructed). The requirements for SWA projects are yet to be clearly defined, but a precedent is being established to perform a tracer study to validate the ELCOM model during planning. It is recommended that this task be postponed to a future effort once the regulations have been released and greater clarity is available.

Our team hopes that our project approach and understanding have demonstrated how our experience in both the San Diego and Padre Dam SWA projects allows us to develop an innovative, cost-effective approach for modeling LVR. With this foundation of experience, we are confident that we can efficiently guide LVMWD towards a successful potable reuse project.



SCOPE OF WORK

This project represents a significant step forward on LVMWD's path to potable reuse. As only the third surface water augmentation project in the State, properly navigating the new SWA territory is critical to project success. Our team has unparalleled experience understanding the regulatory hurdles as well as the solutions needed to permit reservoir projects. The strategy described here is greater than reservoir modeling alone as this scope of work will deliver work products that LVMWD can use to better define the full-scale project and maximize the value of the reservoir. These efforts must always be aligned with the Division of Drinking Water's concerns to ensure that the project is protective of public health and complies with the intent of the SWA regulations.

Task 1 Background Data Collection and Analysis

Task 1.1 Conference call to discuss data needs and availability

A conference call will be held with LVMWD to introduce the data requirements, review the available historical data, and discuss the most practical means of obtaining any additional required data. Examples of reservoir data include the historic in-reservoir monitoring for TDS, chlorophyll-a, algae, temperature and other routinely collected water quality parameters. The availability of local meteorological data will be discussed. Historical flow rates in and out of the reservoir will be requested along with a discussion about the dam outlet configuration and typical operation. Known contingency scenarios that impact reservoir operations—e.g., planned reservoir or aqueduct maintenance, emergency drawdowns, etc.—will also be addressed. This call will highlight data gaps that exist and will introduce discussion on approaches to bridging these gaps. The importance of updated bathymetric information is discussed in Task 1.3.

Task 1.2 Prepare data request and plan to develop necessary information

The project team will develop a data request to document the required information as determined by Task 1.1. Alternatively, this task can be used to help facilitate the transfer of necessary data from the LVMWD's computers or facilities to the project team.

Task 1.3 Conduct bathymetric survey

The project team will work with Las Virgenes to coordinate a bathymetric survey. Our team proposes to contract with Fugro Consultants using a hybrid of multibeam and singlebeam echosounder technologies. The singlebeam will be used to survey the shallow areas while the multiplebeam will be used in the deeper areas. The survey is anticipated to be completed within one (1) working day and will generate a bathymetric contour map (ArcGIS) along with the raw data, hard copies, and digital charts. It is recommended that land surveying not be used due to the additional cost; to maximize the information gained from the bathymetric survey alone, the project team will coordinate with LVMWD to ensure that the reservoir is at the highest level that would be considered for routine operation during the survey. Based on recent site visits, this precaution should not be a problem.

Task 1.4 Data processing and management in preparation for modeling efforts

The historic data collected from LVMWD, a local weather station(s), and other relevant data will be organized and analyzed in this task. The data will be organized and loaded into an ELCOM model that has been constructed using the results of the bathymetric survey. Any data gaps for proper modeling of the reservoir will be identified and recommendations made for LVMWD consideration.

Task 2 Model Setup and Calibration

Task 2.1 Model setup and calibration

The ELCOM model will be constructed based on the bathymetric data. The ELCOM model will be calibrated and run to compare model predictions with the field data. The model parameters will be tuned to improve their predictive ability, and compared to additional field data. It is anticipated that the following parameters will be modeled: temperature, salinity (or TDS) and conservative tracer (for calculation of dilution).

Task 2.2 Simulation of historical year

The constructed and calibrated ELCOM model will be run for 1 year using historical reservoir operation data. This means that inflows, outflows, weather, and reservoir conditions (i.e. temperature, conductivity) will be compared for 1 year to determine model accuracy and establish the basis for a valid model.

Task 3 Reservoir Modeling

Task 3.1 Confirm requirements of SWA regulations

The project team will review the draft SWA regulations and discuss any potential changes that may impact the LVMWD project. Any new regulatory requirements or constraints will be carried over into the modeling to ensure that all of the relevant requirements are included.

Task 3.2 Develop routine and boundary conditions

The project team will work with LVMWD to develop likely flow scenarios for consideration in a future project at the Las Virgenes Reservoir. All known factors impacting the input to the reservoir, withdrawal from the reservoir, and any potential maintenance requirements or other factors that may impact the reservoir operating level will be considered. After considering these factors, a *routine year* will be developed to determine the reservoir operating level as the flows and reservoir level vary throughout the year. A *boundary year* will also be developed based on plausible scenarios that could occur, but that would not risk compliance with the SWA regulations. The theoretical detention time (V_{res}/Q_{30days}) and level of dilution will be used to determine when or if the *boundary year* challenges the SWA regulatory requirements. The project team will discuss plausible alignments for the purified water discharge pipeline to determine an appropriate location for delivery and modeling.

Task 3.3 Define conditions considered to be unusual or emergency with DDW approach

The project team will work with LVMWD to define the emergency conditions that may occur but will not need to be routinely addressed by the potable reuse project. These conditions will be defined along with a conceptual action plan for DDW and LVMWD to address the project

permitting and operations during such an event. While these conditions may violate some of the terms of the SWA regulations, strategies for obtaining exemptions for rare events are possible. The project team's experience developing contingency plans for such rare events will help LVMWD create a plan to protect public health under both routine and challenging conditions.

Task 3.4 Model the routine and boundary conditions for 1 year each

The calibrated Las Virgenes Reservoir model will be used to model one complete year of weather, operating level, inflows, and outflows for the two scenarios that have been defined (routine operations and boundary operations). This will include contour plots of the modeled variables as well as animations of temperature within the reservoir. Animations of the distribution of other selected parameters will also be prepared.

Task 3.5 Determine up to 20 challenge points for delivery of 24-h pulse of off-spec water

The main goal of reservoir modeling is to demonstrate that a 24-h pulse of off-spec water can be adequately diluted such that it never exceeds 1% (100:1) or 10% (10:1) of the extracted water. The modeling results of the routine and boundary scenarios will be reviewed and up to 20 tracer pulse releases will be simulated for each of these two scenarios. This will provide LVMWD with 40 conditions under which the reservoir will be challenged to demonstrate adequate dilution. Animations depicting the motion of the conservative tracer will be prepared along with graphs showing the concentration of tracer at the outlet of the reservoir.

Task 3.6 Data processing and summarizing

This task involves an active summary and review of the modeling results. Summary tables will be prepared that identify the peak tracer concentration, minimum level of dilution, tracer ID conditions, and the detention time before the peak concentration is observed. This data analysis may inform the proposed tracer pulse additions and will be active as task 3.5 work is ongoing.

Task 4 Reporting and Meetings

Task 4.1 Meetings with LVMWD

The project team has assumed that three (3) meetings will be necessary for this effort. The first meeting will be a kick-off meeting to discuss specifics of Task 1 as well as the overall project scope and approach. The second meeting will occur to develop the routine and boundary scenarios for modeling the reservoir and the final meeting will present the modeling outcomes and discuss next steps. Meeting minutes will be provided following each meeting and slides will be presented to facilitate the discussion.

Task 4.2 Meetings with JPA Board

The project team has assumed that two (2) presentations will be made at the Joint Power Authority board meeting.

Task 4.3 Meeting with the Division of Drinking Water

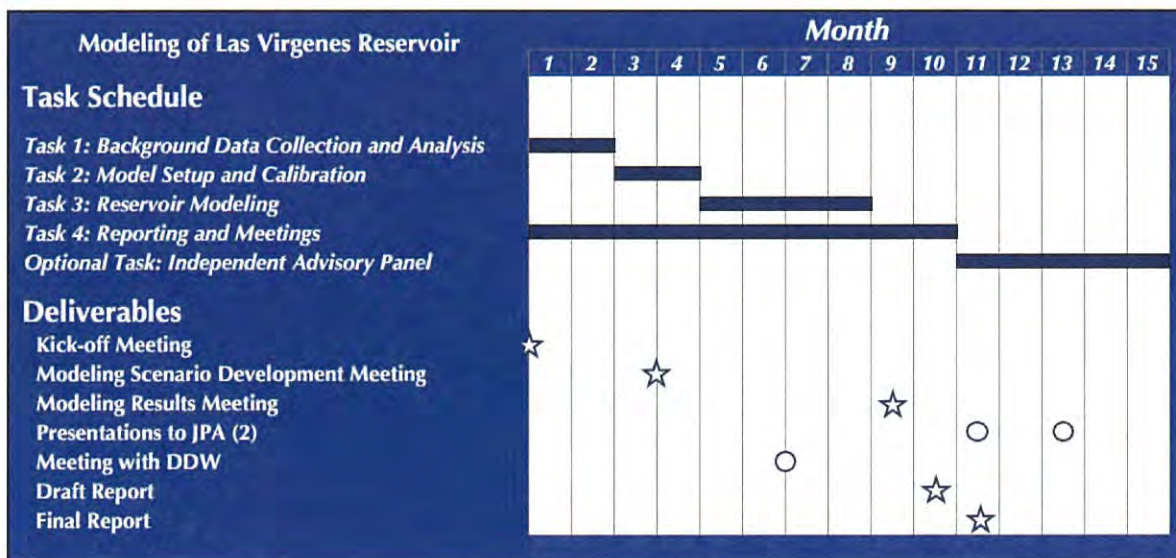
The project team has assumed that one (1) meeting will occur with the Division of Drinking Water to discuss their preferred approach for reviewing and overseeing the reservoir modeling. It is assumed that this meeting will occur at DDW's office in Glendale, CA.

Task 4.4 Final Report by Flow Science

A Final Report that summarizes the results of the effort to date will be developed into a final report by Flow Science. Trussell Tech will coordinate this effort and provide an executive summary and cover letter to provide regulatory context to the work performed.

Task 4.5 Presentation summarizing model results and recommendations

A presentation summarizing the modeling results will be prepared and provided to LVMWD that will serve as a communication tool with DDW. The focus of this presentation would be to summarize the basis for model calibration, the basis for the routine and boundary scenarios, and the modeling results obtained for the 40 pulses of off-spec water under these conditions. The approach for defining and responding to emergency conditions that may violate regulatory requirements will also be presented. Based on the work to date, recommendations will be made for the next steps in project planning as the reservoir results may dictate. This could include recommendations beyond the reservoir that become apparent through this effort.



Optional Task: Convene an Independent Advisory Panel

This task will convene an NWRI-led Independent Advisory Panel (IAP) to evaluate the technical, scientific, and regulatory aspects of the Surface Water Augmentation (SWA) Project, and to gain IAP approval for the project approach. The task will also coordinate interactions with the LA Regional Board and DDW to submit a Conceptual Project Approval Letter for the SWA project. Throughout the history of potable reuse in California, IAPs have helped both agencies and regulators develop confidence in the pursuit of new and innovative reuse projects. Because LVMWD's project is only the third such project in California's history, input and endorsement from an IAP can be an important step in gaining regulatory, agency, and community approval. Trussell Tech has extensive experience organizing and overseeing IAP panels, including those convened for both the City of San Diego and Padre Dam's SWA projects.

Task O.1 Prepare pre-read materials for IAP Workshop

The project team will develop and distribute pre-read documents prior to the workshop that build on the modeling performed and explain the entire regulatory context for the proposed project to the Las Virgenes Reservoir. Topics to be covered in the initial pre-reads include the development of a strategy for complying with the draft SWA regulations, including treatment, monitoring, and source control. Additional topics may include discussion on brine management, anticipated permit requirements, and feed water quality from the recycled water distribution system. The final pre-read document will provide a summary of findings from the study and lay out an integrated approach for the SWA project.

Task O.2 Prepare presentations for IAP Workshop

The material covered in the pre-read documents will also be prepared for discussion at the IAP Workshop. Meeting preparation and content will be developed in close coordination with LVMWD staff, and DDW engagement will be encouraged throughout the entire IAP process.

Task O.3 Attend and Lead IAP Workshop

Trussell Tech will be responsible for organizing and leading the IAP workshop. The workshop is assumed to be one full day of meeting for the IAP, the LVMWD staff, with both DDW and Regional Board encouraged to participate. The goal of this workshop will be to present the reservoir modeling basis, results and discuss proposed next steps towards project approval.

Task O.4 Review of IAP reports and communication

The IAP will be charged to provide a written report after the Workshop on the technical, scientific, and public health aspects of the project. Trussell Tech will review draft and final reports, respond to comments and requests for information (RFIs) from the IAP, and coordinate communication between the IAP, LVMWD Staff, and DDW regarding the project findings.

Task O.5 Submittal of project concept for Conceptual Project Approval Letter

This sub-task consists of submission of a final report submitted to DDW in anticipation of a Conceptual Project Approval Letter for the SWA project.



PROJECT ORGANIZATION AND KEY PROJECT PERSONNEL

This section presents the organization of our project team, led by **R. Shane Trussell**, with the qualifications and responsibilities of all key project team members. Our objective in assembling the team was to select the most qualified and experienced professionals with proven capabilities in potable reuse projects for surface water augmentation (SWA). The project team organization establishes the management and control structure to achieve the goals and objectives of the project. Our team will harness our recent experience on a similar size SWA project to provide specialized technical services to assist Las Virgenes-Triunfo JPA with defining the ability of the Las Virgenes Reservoir to meet regulatory requirements and provide valuable information for full-scale facilities. Our teams modeling experience goes hand-in-hand with our unique involvement and understand of the regulatory requirements for SWA which will provide the most efficient compliance outcomes for LVMWD. The key members of the project team include Trussell Technologies, Inc., Flow Science, Inc., and Debra Burris or DDB, Inc. Debbie was the lead author of the Orange County Water District’s Engineering Report to DDW and she is currently working with Trussell Technologies to prepare the first SWA Engineering Report for San Diego’s SWA project to Miramar Reservoir.



R. Shane Trussell, Ph.D., P.E., BCEE



PROJECT MANAGER

YEARS OF EXPERIENCE: 18

EDUCATION: Ph.D., Environmental Engineering, UC, Berkeley
M.S., Environmental Engineering, UC, Los Angeles
B.S., Chemical Engineering, UC, Riverside

REGISTRATION: Civil Engineer, CA (No. 66887)

CERTIFICATION: Board Certified Environmental Engineer

As president of Trussell Technologies, Inc., Dr. Shane Trussell has become an industry leader in potable reuse and developing water supplies, with over 18 years of experience leading innovative and effective engineering and research projects throughout California. Dr. Trussell has been and is involved in 11 potable reuse projects throughout the state, ranging from feasibility studies and pilot testing to design and regulatory permitting. In addition, Dr. Trussell is also the lead of two major research efforts funded by the WaterReuse Research Foundation: WRRF 11-02 (Equivalency of Advanced Treatment Trains for Potable Reuse) and WRRF 14-12 (Demonstrating Redundancy and Monitoring to Achieve Reliable Potable Reuse), to advance the status of potable reuse in California. Dr. Trussell serves on several research advisory committees and has authored more than 75 publications and presentations on a wide breadth of topics related to water treatment engineering.

SELECT EXPERIENCE AS PROJECT MANAGER

- **City of San Diego, Pure Water San Diego Program.** Date: 2015-present
Trussell Technologies is supporting the City of San Diego's Pure Water Program, a \$2-3B project involving advanced water treatment planning and design, regulatory and permitting support, and procurement services to create a new sustainable source of water supply for a population of 1.4M. Dr. Trussell is leading the regulatory effort, including interfacing with the independent project advisory panel and working with experts and the City to develop a sound strategy for permitting the future facilities.
- **Padre Dam Municipal Water District, East County Advanced Water Purification Program.** Date: 2016-present.
Design and regulatory permitting strategy for expansion of the Ray Stoyer Water Reclamation Facility and addition of an Advanced Water Purification facility to provide a minimum of 15% of the regions water supply by 2035.
- **City of Los Angeles, Terminal Island Water Reclamation Plant Advanced Water Purification Facility Ultimate Expansion Project.** Date: 2015-present.
Design-build delivery of an expansion of the reverse osmosis system and a new UV/AOP system for groundwater replenishment, with evaluation of permit testing protocols to meet Division of Drinking Water requirements.

Li Ding, Ph.D., P.E.



PRINCIPAL ENGINEER, FLOW SCIENCE INC.

YEARS OF EXPERIENCE: 14

EDUCATION: Ph.D., Civil Engineering, *Stanford University, Palo Alto, California*

M.S. Civil Engineering, *University of Miami*

B.S., Environmental Engineering, *Tsinghua University, China*

REGISTRATION: Civil Engineer, VA (No. 0402 041986)

Dr. Ding has worked at Flow Science since 2002 and is the technical lead and principal engineer for Surface Water Quality & Hydrodynamics and Computational Fluid Dynamics (CFD) groups. He is responsible for numerical analysis and modeling of lake and reservoir water quality and hydrodynamics using one-dimensional, two-dimensional and three-dimensional models. He conducts water quality studies of lakes and reservoirs including modeling and analysis of reservoir argumentation and expansion, portable water reuse, algal growth, hypolimnion oxygenation and bacterial decay. He also models the water quality of coastal waters and estuaries affected by sewage or power plant cooling water discharge. In addition, Dr. Ding performs CFD modeling to study the flow patterns of wet wells, clearwells, and storage reservoirs for improvement in the efficiency of these facilities. His CFD work incorporates modeling, sizing, and recommending alternate inlet configurations, baffles, and mixing devices to improve water quality.

SELECT RELEVANT EXPERIENCE

At Flow Science, Dr. Ding's primary focus is the hydrodynamics of and water quality in lakes and reservoirs. He has conducted a water quality and modeling study of reservoir argumentation through addition of advanced purified recycled water at San Vicente Reservoir, CA. He is currently involved in a hydrodynamic modeling study of indirect potable water reuse project at Lake Jennings, CA. He has been involved in developing a three-dimensional water quality model (ELCOM-CAEDYM) for Lake Mead, NV, to identify alternative discharge locations of treated wastewater from the fast-growing metropolitan Las Vegas Valley and their potential impacts on water quality. Other notable lake and reservoir water quality studies include pathogen dispersion modeling at Lake Perris, CA, dam enlargement at Los Vaqueros Reservoir, CA, and hypolimnetic oxygenation at Lake Casitas, CA. He has also conducted several studies on water quality impacts on coastal and estuary water by outfalls discharging treated wastewater near Palos Verdes, CA, and the combined cooling water discharge/effluent from existing power plants and proposed desalination plants at Encina and Moss Landing, CA. Dr. Ding was a member of a Flow Science team that modeled the fate of bacteria along the coast after a sewage overflow on January 15, 2006, at Manhattan Beach, CA. In addition, he has performed numerous CFD analyses of pump intakes and wet wells. Notable projects include the pumps in the intake pump station, clearwell, and product water tank at the Carlsbad Desalination Plant, CA, the new Secondary Effluent Pump Station at Hyperion Treatment Plant, CA, the stormwater pumps at the Burris Pump Station, CA, and the Hart St. Pump Station, HI.

Bryan Trussell, P.E.



LEAD ENGINEER

YEARS OF EXPERIENCE: 13

EDUCATION:

M.S., Environmental Engineering, *University of Illinois, Urbana- Champaign*

B.S., Environmental Engineering, *UC Berkeley*

REGISTRATION: Civil Engineer, CA (No. 71468)

Mr. Trussell worked 9 years with the City of Los Angeles' Bureau of Sanitation, bringing valuable perspective regarding the challenges facing today's utilities. At Trussell Tech, he has worked on several AOP projects, including an evaluation that compares low- and medium-pressure UV and ozone, with and without H₂O₂ and free chlorine. This study will provide the industry with urgently needed decision-making tools to compare the effectiveness of the various AOP options and to select suitable applications using cost. He also authored a report to obtain CDPH permitting for a new UV technology, and studied ozone for increased disinfection capacity at the City of Santa Rosa.

SELECT RELEVANT EXPERIENCE

- **City of Los Angeles, Bureau of Sanitation, Los Angeles Sanitation (LASAN) / Brown & Caldwell, Donald C. Tillman Ground Water Replenishment (GWR) Advanced Water Purification Facility Pilot Project.** Date: 2015-present.

Trussell Technologies is working with Brown & Caldwell on a project for the City of Los Angeles Bureau of Sanitation (LASAN), which includes implementation, operational support, and reporting of an advanced water treatment (AWT) Pilot Study at the Donald C. Tillman Water Reclamation Plant (DCTWRP).

- **City of Los Angeles, Terminal Island Water Reclamation Plant Advanced Water Purification Facility Ultimate Expansion Project.** Date: 2015-present.

Trussell Technologies, in conjunction with Carollo Engineers, aided the City of Los Angeles, Bureau of Sanitation in the preliminary design for the Terminal Island Water Reclamation Plant upgrade to Full Advanced Treatment (FAT). The Bureau's main goals for the upgrade were to increase the amount of recycled water from TIWRP while meeting current and anticipated regulations. Mr. Trussell helped the Bureau to evaluate the ideal Advanced Oxidation Process (AOP) between combinations of Ozone and Hydrogen Peroxide (O₃/H₂O₂) or Ultraviolet and Hydrogen Peroxide (UV/H₂O₂). The principal reason for Trussell Tech's participation in this project stems from their expertise in water quality, thorough understanding of available AOP equipment and the difference between the information learned from water chemistry and reactor hydraulics.

R. Rhodes Trussell, Ph.D., P.E., BCEE



TECHNICAL EXPERT - DDW Regulations / Advanced Treatment

YEARS OF EXPERIENCE: 40+

EDUCATION: Ph.D., Sanitary Engineering, *UC, Berkeley*

M.S., Sanitary Engineering, *UC, Berkeley*

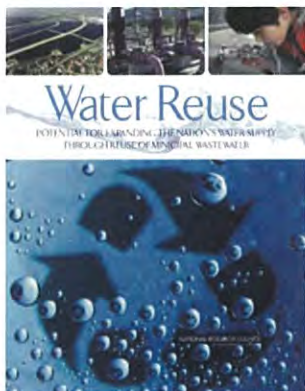
B.S., Civil Engineering, *UC, Berkeley*

REGISTRATION: Civil Engineer, CA (No. 25107)

Corrosion Engineer, CA (No. 745)

CERTIFICATION: Board Certified Environmental Engineer

Dr. Trussell is recognized worldwide in the development of advanced processes for treating water or wastewater to achieve the highest standards. He has always played a leadership role in the regulation of drinking water, serving on six NRC committees reviewing drinking water issues, and on EPA's Science Advisory Board for 15 years. Recently he has turned his attention to reuse, serving first as Chair of the WaterReuse Research Foundation's Research Advisory Committee and now on its Board of Directors. He worked closely with CDPH in developing new regulations for groundwater recharge.



Dr. Rhodes Trussell chaired the NRC Committee that produced the 2012 Potable Reuse report (left). The purpose of the report was to explain the benefits of expanding the use of treated wastewater and how reuse could significantly increase the nation's total available water resources. The report presents a portfolio of treatment options available to mitigate water quality issues in reclaimed water, along with new analysis suggesting that the risk of exposure to certain microbial and chemical contaminants from drinking reclaimed water does not appear to be any higher than the risk experienced in some current drinking water treatment systems, and may be orders of magnitude lower.

Brian Pecson, Ph.D., P.E.



REGULATORY LEAD

YEARS OF EXPERIENCE: 15

EDUCATION: Ph.D. Civil & Environmental Engineering, *UC Berkeley*

M.S., Civil & Environmental Engineering, *UC Berkeley*

B.S., Science Pre-Professional, *University of Notre Dame*

REGISTRATION: Civil Engineer, CA (No. 80440)

Dr. Pecson's expertise in disinfection and pathogens allows him to address a variety of issues in water, wastewater, and recycled water treatment. Dr. Pecson is currently working on a number of projects related to potable reuse, particularly the newly emerging paradigms of reservoir augmentation and direct potable reuse. Work in this area includes the development of public health criteria for potable reuse systems, and the evaluation and testing of reuse technologies that meet these criteria. Through these projects, Dr. Pecson is working with the California Division of Drinking Water to advance and expand options for the design and implementation of potable reuse systems.

Ericson John List, Ph.D., P.E.



EXPERT ADVISOR, FLOW SCIENCE INC.

YEARS OF EXPERIENCE: 55

EDUCATION:

Ph.D., Applied Mechanics and Mathematics, *California Institute of Technology*

M.E. Civil Engineering, *University of Auckland, New Zealand*

B.Sc. Mathematics, *University of Auckland, New Zealand*

B.E. Engineering, *University of Auckland, New Zealand*

REGISTRATION: Civil Engineer, CA (No. C36791) and NV (No. 015627)

Dr. List has been a leader in the application of fluid dynamics to practical engineering problems in fluid flow modeling and hydraulics. Dr. List was Professor of Environmental Engineering Science at the California Institute of Technology between 1969 and 1997. His work at Caltech focused on the study of fluid mechanics, fluid dynamics and fluid flow modeling. He also held the position of editor of the *Journal of Hydraulic Engineering*, American Society of Civil Engineers, from 1984 to 1989. He acted as an outside consultant as well, consulting on hydraulics issues, and writing the original code for what has become Flow Science's transient analysis software. Since 1997 he has been Principal Consultant at Flow Science Incorporated. In that time, he built the reputation of Flow Science as a leader in fluid flow modeling and developed Flow Science's services in the areas of pipeline modeling, river and ocean discharge modeling, and reservoir water quality modeling.

Debra L. Burris, P.E., BCEE



PRINCIPAL ENGINEER, DDB ENGINEERING, INC.

YEARS OF EXPERIENCE: 30+

EDUCATION:

M.S., Environmental Engineering, *Stanford University*

B.S., Civil Engineering, *University of Kansas*

REGISTRATION: Civil Engineer, CA (No. 28994) and AZ (No. 19663)

Ms. Burris has over thirty years of experience with a multitude of water- and wastewater-related projects. She has been responsible for planning, design, and construction phase services for water and wastewater treatment and reclamation facilities, pumping stations and pipelines. Her duties have included civil engineering; preparation of design plans and specifications for construction of facilities; review of submittals and related construction phase engineering support; application of technical solutions for alternatives evaluation and problem resolution; regulatory and permitting assistance; preparation of funding applications and grant administration; report and proposal writing; presentations; supervision and coordination of technical and support staff; and project management with responsibility for determination and compliance with project budget and schedule.



PROJECT EXPERIENCE & REFERENCES

Trussell Technologies, Inc., is an industry leader in delivering the most affordable recycled water solutions to our clients through a practical technical approach that will meet regulatory requirements. For surface water augmentation (SWA) projects, we have played a significant role in the development of the regulations at a state-wide level through the development of a White Paper on behalf of WaterReuse California that informed the Division of Drinking Water as well as the State Expert Panel. Our team's work on SWA projects for the City of San Diego and Padre Dam Municipal Water District has exposed us to the regulators' concerns and the differences between planning an SWA project in a large, medium, or small reservoir. For this effort, we have assembled a team of highly qualified and experienced professionals who have worked together on previous projects to provide an efficient modeling effort that will provide LVMWD with the most meaningful results. Relevant project experience is described within this section to demonstrate our team's ability to understand the complexities of permitting SWA projects, where reservoir modeling serves as a cornerstone for project success. The select projects cover multiple aspects of recycled water engineering projects including managing complex regulatory issues, reservoir modeling, pilot-scale design and construction, and test plan development and execution. At the completion of this project, LVMWD will have made significant steps towards permitting a future SWA project and our team's engagement in the industry leading SWA projects in California ensures a successful modeling effort for LVMWD.

Indirect Potable Reuse Full Advanced Treatment Demonstration Project

CLIENT: Padre Dam Municipal Water District
Al Lau, P.E., Director of Engineering and Planning
(619) 596-1804 / alau@padre.org

PROJECT DATE: 2013 - 2016

KEY DELIVERABLES:

- Concept pre-read documents for DDW and Independent Advisory Panel meetings
- DDW-approved Experimental Plan
- Technical report on findings from routine monitoring and challenge testing with ammonia and MS2
- Technical memorandum for DDW requesting approval for implementation of free chlorine strategy
- Strategy on reservoir operational scenarios and DDW regulations

KEY PERSONNEL: Shane Trussell, Rhodes Trussell, Brian Pecson, Bryan Trussell



Lake Jennings

“Shane Trussell has guided Padre Dam through the potable reuse regulatory process since his firm initially engaged as Program Manager for the AWP Demonstration Project in 2013. He has been agile – adjusting from a groundwater to reservoir project – while continuing to inform and provide guidance to the District on not only the regulatory landscape for reservoir augmentation, but what would be necessary to secure project approval.”

– Al Lau, Director of Engineering and Planning,
East County AWP Lead

Padre Dam Municipal Water District is investigating the expansion of its recycled water program to include indirect potable reuse (IPR) to increase reliability in its water supply portfolio. Padre Dam is pursuing reservoir augmentation in Lake Jennings with a three (3) phase program of 3.5 MGD, 10 MGD, and 15.5 MGD. Trussell Technologies, Inc. originally developed a plan to maximize a groundwater project by seeking approval from the California Division of Drinking Water (DDW) for minimum retention times in the environmental buffer (2 months). As the larger East County project developed, Padre Dam and Trussell Technologies adapted the Demonstration testing and meetings to develop information that could be used for the surface water augmentation project as well. The team has coordinated with the Independent Advisory Panel, DDW, and the San Diego Regional Water Quality Control Board to discuss the project concepts and seek regulatory approval. The demonstration facility (100,000 gpd capacity) has provided valuable information for regulatory approval as well as serving as a public outreach tool. Trussell Technologies provides operational support for the facility while the District operates it. These efforts developed comfort with project partners and regulatory authorities as well as public officials.

Project Expertise:

- Process Design
- Pilot/Demonstration Testing
- Advanced Water Treatment
- Brine Concentrate Management
- DDW Permitting

San Diego Pure Water Program Regulatory Support

CLIENT: City of San Diego/MWH
Bill Pearce, City of San Diego
(858) 292-6494 / wpearce@sandiego.gov

PROJECT DATE: 2015 - Present

KEY DELIVERABLES:

- Developed treatment train concept for SWA to Miramar Reservoir
- Presented at IAP meetings
- Lead DDW aspects of treatment concepts as well as major project facets, such as the value of the reservoir
- Draft Engineering Report on SWA to Miramar
- Predesign of advanced treatment train
- Operating 1 MGD demonstration facility

KEY PERSONNEL: Shane Trussell, Rhodes Trussell,
Brian Pecson, Debbie Burris

“Shane Trussell has done an outstanding job in developing a regulatory strategy that has allowed the City of San Diego’s Pure Water program to advance and make critical decisions. His team has a unique approach with the Division of Drinking Water that reflects their grasp on what the regulators underlying concerns may be from other project experience and has successfully secured their support for our project objectives.”

– John Helminski, Assistant Utilities Director,
Pure Water Program Lead

Trussell Technologies, Inc. is part of a consulting team including MWH and Brown and Caldwell, and working with the City of San Diego to implement the Pure Water Program. The goal of the Pure Water Program is to develop a 30-mgd capacity potable reuse water purification facility that is operational by 2021, and with a long term goal of having one-third of San Diego’s drinking water supply (approximately 83 mgd) be purified potable reuse water. Trussell Technologies is currently supporting this effort with regulatory guidance for permitting potable reuse facilities for source water augmentation, predesign of the North City Advanced Water Purification Facility (NCAWPF) for two treatment train options, and pre-qualification and pre-selection testing for major equipment capital purchases including the microfiltration/ultrafiltration (MF/UF), reverse osmosis (RO), and ultraviolet light/advanced oxidation process (UV/AOP) systems.

Project Expertise:

- Indirect Potable Reuse
- Advanced Oxidation Processes
- DDW Permitting



San Vicente Reservoir



Miramar Reservoir

WRRF 14-12 Demonstrating Redundancy and Monitoring to Achieve Reliable Potable Reuse

CLIENT: Water Environment & Reuse Foundation
Julie Minton, Director of Research
(571) 699-0023 / jminton@werf.org

PROJECT DATE: 2014 - Present

KEY DELIVERABLES:

- Developed 1-year of critical control point data to support State Expert Panel's determination of reliability for public health protection
- Developed concepts to enhance log removal credits for the reverse osmosis (RO) process
- Four (4) presentations to State Expert Panel

KEY PERSONNEL: Shane Trussell, Rhodes Trussell,
Brian Pecson



San Diego Advanced Water Demonstration Facility

As the industry gains experience with potable reuse, we have built an understanding of the issues and solutions to move forward with potable reuse schemes that do not use an environmental buffer. Of paramount concern for these projects is public health protection. This project pushes this discussion forward by creating a general framework for potable reuse safety, and then implementing them during a yearlong demonstration testing.

The general strategy for reliability in public health protection uses a framework based on four “R” words: reliability, redundancy, robustness, and resilience. The goal of this framework is reliability, defined as the consistent protection of public health, accomplished via two principal strategies: failure prevention and failure response. For the remaining three “Rs”, redundancy and robustness contribute to failure prevention, and resilience provides failure response.

To compensate for lower levels of environmental treatment, additional treatment redundancy is required at the advanced water treatment facility. The 1.5 MGD Demonstration Facility—located at the City of San Diego’s North City Water Reclamation Plant—builds on this concept by supplementing the standard full-advanced treatment train (MF, RO, UV/AOP) with a pre-treatment process consisting of ozone and biologically active carbon. Data has been developed to show the benefits of pre-treatment not only for contaminant removal, but for overall process performance and operability. Enhancements in monitoring provide greater confidence that performance (and failure) can be continuously tracked. This tight temporal control of the process compensates for the loss of the environmental buffer by decreasing the need for long storage periods to detect and respond to failures. Robustness rounds out the failure prevention strategy by providing protection against the wide diversity of contaminants, both known and unknown (a key concern). The history of the water industry has shown us that increased robustness is the key to controlling a diversity of contaminants. By providing multiple barriers with a wide diversity of removal mechanisms, we minimize the probability that a contaminant will pass through the treatment train.

Project Expertise:

- Potable Reuse
- Public Health Protection
- Regulatory Issues

Potable Reuse Feasibility Study

CLIENT: Santa Fe Irrigation District,
San Dieguito Water District, and
San Elijo Joint Powers Authority
Michael Thornton, General Manager,
San Elijo Joint Powers Authority
(760) 753-6203 / thornton@sejpa.org

PROJECT DATE: 2015

KEY DELIVERABLES:

- Feasibility Study to Determine SWA Project Viability, capacity, and cost

KEY PERSONNEL: Shane Trussell, Rhodes Trussell,
Brian Pecson



San Dieguito Reservoir

The Santa Fe Irrigation District (SFID), San Dieguito Water District (SDWD) and the San Elijo Joint Powers Authority (SEJPA) are seeking greater water supply independence through potable reuse. Trussell Tech has been selected to assess the feasibility of a multi-agency, regional potable reuse project via surface water augmentation at the San Dieguito Reservoir. Trussell Tech will develop a resource document on the current status of the developing potable reuse regulations in California, and lay the groundwork for understanding potential processes to be included in a future advanced water treatment facility (AWTF). Key elements of this feasibility study include evaluations of (1) the additional treatment requirements at SEJPA's existing water recycling facility, (2) the availability of additional regional wastewater flows to feed the new AWTF, (3) the upgrades needed to SDWD's pipeline between SEJPA's recycling facility and SFID's San Dieguito Reservoir, and (4) potential upgrades to SFID's R.E. Badger Filtration Plant. The feasibility study will also include an alternatives analysis of the various options, including cost estimates for both near-term (5-10 year horizon) and long-term (15-20 year) project alternatives.

Project Expertise:

- Small Reservoir Surface Water Augmentation Project
- DDW Concepts
- Developed project capacity and costs



December 13, 2016

Las Virgenes-Triunfo Joint Powers Authority
David R. Lippman, P.E.
4232 Las Virgenes Road
Calabasas, California 91302

Subject: Proposal for Modeling of Las Virgenes Reservoir in Support of Surface Water Augmentation Indirect Potable Reuse Project

Dear Mr. Lippman,

Please find enclosed the budget and rate schedule associated with the Proposal for the Modeling of the Las Virgenes Reservoir Related to Indirect Potable Reuse using Surface Water Augmentation.

Due to the level of effort of our sub-consultants, we have waived our standard 15% mark-up on sub-contractors for this project.

I can be contacted directly at (858) 314-4134 with any questions you may have.

Respectfully,

A handwritten signature in blue ink, appearing to read "R. Trussell".

R. Shane Trussell, President
Trussell Technologies, Inc.



Professional Service Fee for Modeling of Las Virgenes Reservoir for Surface Water Augmentation

Task	Sub Task	Description	Budget										
			RT \$299	ST \$245	BT \$210	BP \$198	CY \$108	Cost	Flow Science	Fugro	DDB Engineering	ODC	Total
1		Data Collection and Analysis	0	6	30	58	60	\$ 25,734	\$ 9,000	\$ 16,310	\$ -	\$ -	\$ 51,044
	1.1	Conference call to discuss data needs and availability		2	2	2	4	\$ 1,738					\$ 1,738
	1.2	Prepare data request and plan to develop necessary information			4	16	16	\$ 5,736					\$ 5,736
	1.3	Conduct bathymetric survey			8			\$ 1,680		\$ 16,310			\$ 17,990
	1.4	Data processing and management in preparation for modeling efforts		4	16	40	40	\$ 16,580	\$ 9,000				\$ 25,580
2		Model Setup and Calibration	0	0	0	0	0	\$ -	\$ 38,000	\$ -	\$ -	\$ -	\$ 38,000
	2.1	Model Setup and Calibration						\$ -	\$ 30,000				\$ 30,000
	2.2	Simulation of Historical Year						\$ -	\$ 8,000				\$ 8,000
3		Reservoir Modeling	18	20	64	24	96	\$ 38,842	\$ 22,000	\$ -	\$ 2,200	\$ -	\$ 63,042
	3.1	Confirm requirements of SWA regulations	2	2	2	2		\$ 1,904		\$ 400			\$ 2,304
	3.2	Develop routine and boundary conditions	8	8	24	8	40	\$ 15,296	\$ 6,000	\$ 800			\$ 22,096
	3.3	Define conditions considered to be unusual or emergency with DDW approach	2	2	4	8	8	\$ 4,376		\$ 600			\$ 4,976
	3.4	Model the Routine and Boundary conditions for 1 year each			2			\$ 420	\$ 10,000				\$ 10,420
	3.5	Determine up to 20 challenge points for 24 hour pulse of off-spec water	2	4	8	2	8	\$ 4,518	\$ 6,000				\$ 10,518
4		Data processing and summarizing	4	4	24	4	40	\$ 12,328		\$ 400			\$ 12,728
		Reporting and Meetings	8	28	36	18	16	\$ 22,104	\$ 21,000	\$ -	\$ 2,400	\$ 2,100	\$ 47,604
	4.1	3 Meetings and minutes	4	12	12	12		\$ 9,032	\$ 4,500	\$ 1,600	\$ 900	\$ 16,032	
	4.2	2 JPA Board Meetings		8	8			\$ 3,640	\$ 1,500		\$ 600	\$ 5,740	
	4.3	DDW Meeting		4	4	2		\$ 2,216		\$ 800	\$ 600	\$ 3,616	
4.4	Flow Science Modeling Report	2	2	8	2	2	\$ 3,164	\$ 15,000				\$ 18,164	
4.5	Presentation summarizing modeling results and recommendations	2	2	4	2	16	\$ 4,052					\$ 4,052	
TOTAL:			26	54	130	100	172	\$ 86,680	\$ 90,000	\$ 16,310	\$ 4,600	\$ 2,100	\$ 199,690

Trussell Technologies Personnel

RT	Rhodes Trussell, Ph.D., P.E.	BT	Bryan Trussell, P.E.
ST	Shane Trussell, Ph.D., P.E.	CY	Chao Yang
BP	Brian Pecoson, Ph.D., P.E.		



Optional Services for Modeling of Las Virgenes Reservoir for Surface Water Augmentation

Task	Sub Task	Description		Budget										
		Initials	Hourly Billing Rate	RT	ST	BT	BP	CY	Cost	Flow Science	Fugro	DDB Engineering	ODC	Total
O.1	O.1.1		Pre-read materials for IAP Workshop	2	6	20	6	56	\$ 13,504	\$ 800	\$ -	\$ 1,600	\$ -	\$ 15,904
	O.1.2		Draft pre-read document on basis of model, scenarios, and results Final pre-read document on basis of model, scenarios, and results	2	4	16	4	40	\$ 9,452	\$ 800	\$ -	\$ 1,600	\$ -	\$ 11,852
O.2	O.2.1		Prepare presentations for IAP Workshop	4	2	4	2	16	\$ 4,052	\$ -	\$ -	\$ -	\$ -	\$ 4,052
	O.2.2		Develop presentation on reservoir modeling work and regulatory compliance	4	8	16	12	24	\$ 7,912	\$ -	\$ -	\$ -	\$ -	\$ 7,912
O.3	O.3.1		Lead IAP Meeting	8	8	8	8	8	\$ 8,480	\$ 1,600	\$ -	\$ 1,600	\$ 1,000	\$ 12,680
	O.3.2		Lead IAP workshop on reservoir modeling and project concept	8	8	8	8	8	\$ 8,480	\$ 1,600	\$ -	\$ 1,600	\$ 1,000	\$ 12,680
O.4	O.4.1		Review of IAP reports and communication	2	8	16	4	0	\$ 6,710	\$ -	\$ -	\$ -	\$ -	\$ 6,710
	O.4.2		Coordinate with IAP post meeting, address requests for information or questions	2	2	8	8	8	\$ 2,170	\$ -	\$ -	\$ -	\$ -	\$ 2,170
O.5	O.5.1		Review draft IAP report and provide comments to LVMWD	2	4	4	4	4	\$ 3,210	\$ -	\$ -	\$ -	\$ -	\$ 3,210
	O.5.2		Coordinate delivery of the final IAP report to DDW and LARWQCB	4	14	64	12	96	\$ 30,810	\$ -	\$ -	\$ 2,400	\$ -	\$ 33,210
O.5.3	O.5.3.1		Develop Conceptual Approval Letter Request	4	12	40	12	80	\$ 23,552	\$ -	\$ -	\$ 1,600	\$ -	\$ 25,152
	O.5.3.2		Draft final report on IAP meeting outcomes and request conceptual approval	4	16	16	16	16	\$ 5,088	\$ -	\$ -	\$ 800	\$ -	\$ 5,888
TOTAL:	O.5.3.3		Finalize the final report	2	2	8	8	8	\$ 2,170	\$ -	\$ -	\$ -	\$ -	\$ 2,170
	O.5.3.4		Coordinate securing the approval letter for LVMWD	20	44	124	42	184	\$ 70,988	\$ 2,400	\$ -	\$ 5,600	\$ 1,000	\$ 79,988

Trussell Technologies Personnel

RT	Rhodes Trussell, Ph.D., P.E.	BT	Bryan Trussell, P.E.
ST	Shane Trussell, Ph.D., P.E.	CY	Chao Yang
BP	Brian Peeson, Ph.D., P.E.		



**TRUSSELL TECHNOLOGIES, INC.
HOURLY BILLING RATES**

Effective: January 1, 2017

	Billing Rate	
	Normal Hourly Rate¹	Expert Daily Rate²
Senior Company Officer	\$ 299	\$ 3,588
Principal Engineer III	\$ 245	\$ 2,940
Principal Engineer II	\$ 230	\$ 2,760
Principal Engineer I	\$ 210	\$ 2,520
Supervising Engineer III	\$ 198	-
Supervising Engineer II	\$ 185	-
Supervising Engineer I	\$ 172	-
Senior Engineer III	\$ 158	-
Senior Engineer II	\$ 148	-
Senior Engineer I	\$ 136	-
Engineer II	\$ 125	-
Engineer I	\$ 116	-
Associate Engineer II Senior Office Manager I	\$ 108	-
Associate Engineer I Office Manager III	\$ 101	-
Assistant Engineer II Office Manager II	\$ 93	-
Assistant Engineer I Office Manager I	\$ 87	-
Office / Lab Assistant II	\$ 80	-
Office / Lab Assistant I	\$ 76	-

1. Time will be billed in 15 minute increments
2. Time will be billed in increments of one day

Other Direct Costs

Mileage for vehicle use to be reimbursed at current IRS rate.
Travel, equipment rental and other direct costs to be reimbursed at actual cost

Outside Professional Services:

Outside professional services to be reimbursed at actual cost

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : Pure Water Project Las Virgenes-Triunfo: Award of Advanced Water Treatment Plant Preliminary Siting Study

SUMMARY:

On September 6, 2016, the JPA Board authorized staff to issue a Request for Proposals for an advanced water treatment plant preliminary siting study. Proposals were received from Kennedy/Jenks Consultants; HDR, Inc.; and RMC Water and Environment. The proposals were reviewed by an evaluation committee consisting of LVMWD and TSD staff. Based on the proposed scope of work, project understanding, experience and fee proposal, staff recommends accepting the proposal from RMC Water and Environment, a Woodard & Curran Company, in the amount of \$157,648, which includes an optional task to complete a technical analysis of alternative advanced water treatment plant layouts.

RECOMMENDATION(S):

Accept the proposal from RMC Water and Environment, a Woodard & Curran Company, and authorize the Administering Agent/General Manager to execute a professional services agreement, in the amount of \$157,648, for an advanced water treatment plant preliminary siting study.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of the work is \$157,648, which includes an optional task for \$8,176 to complete a technical analysis of alternative advanced water treatment plant layouts. Sufficient funds are available in the adopted Fiscal Year 2016-17 JPA Budget for the work. A budget of \$1,750,000 was provided for the Pure Water Project Las Virgenes-Triunfo under CIP No. 10587, which is allocated 70.6% to LVMWD and 29.4% to TSD. No additional appropriation is required. As shown in the table below, a total of \$1,331,217 would be committed to-date with the Board's acceptance of this proposal.

Plan of Action (MWH)	\$ 174,716
Basis of Design Report (MWH)	\$ 462,825
Basis of Design Report (MWH) Amendment 1	\$ 17,000
Basis of Design Report (MWH) Amendment 2	\$ 11,300
Encino Reservoir Investigation (RMC)	\$ 52,820
Outreach (Katz & Associates)	\$ 41,115
Outreach (Katz & Associates) Amendment 1	\$ 15,383
Outreach (Katz & Associates) Amendment 2	\$ 8,615
Financial Consultant (The PFM Group)	\$ 30,000
LADWP Contribution	\$ (62,370)
Demo Project Preliminary Design (CDM Smith)	\$ 142,487
Trussell Tech Mixing Study	\$ 199,690
Trussell Tech IAP Option	\$ 79,988
RMC Preliminary Siting Study	\$ 157,648
TOTAL	\$ 1,331,217

DISCUSSION:

Background:

On August 1, 2016, the JPA Board directed staff to develop the next steps for the Pure Water Project. The next steps fall into seven categories; (1) funding and financing, (2) advocacy, (3) technical studies, (4) outreach, (5) demonstration project, (6) environmental analysis, and (7) potential institutional issues. The steps were further refined on September 6, 2016, when the Board authorized staff to issue requests for proposals for the preliminary design and environmental review of a demonstration project, technical studies to support compliance with the draft surface water augmentation regulations, and initial work to support the future environmental review of the Pure Water Project.

The Basis of Design Report (BODR) identified nine potential advanced water treatment plant (AWTP) sites at a very high level. However, the nine sites identified in the BODR were not exhaustive, and there are other possible sites that could be considered. Selecting a smaller group of potential sites is necessary to support future environmental review and preliminary design for the Pure Water Project. To more thoroughly evaluate siting options and develop a smaller group of potential sites, a Request for Proposals for a preliminary siting study was issued.

Scope of Work:

The intent of the siting study is not to recommend a preferred site, rather to identify a broad range of potential sites using a screening process to determine feasible sites as well as a comparative analysis to develop a shortlist of potential site alternatives. When reviewing the various sites, consideration will be given to the proximity of the site to existing recycled water infrastructure, proximity to the Salinity Management (brine) Pipeline, proximity to Las Virgenes Reservoir, property ownership, property cost, new infrastructure cost and alignments, property size, adjacent neighborhoods, potential environmental/social considerations, and current land use among others items. The consultant will take into account potential impacts to adjacent residents and businesses new infrastructure costs and pipeline alignments.

Request for Proposals and Consultant Selection:

On September 6, 2016, the JPA Board authorized staff to issue a Request for Proposals for the

advanced water treatment plant preliminary siting study. Proposals were received from Kennedy/Jenks Consultants; HDR, Inc.; and RMC Water and Environment. The following table summarizes key elements of the three proposals.

Firm	Cost	Duration	Notes
Kennedy /Jenks	\$154,976	8 months	
HDR	\$149,316	6 months	
RMC	\$157,648	8 months	Includes an optional task for \$8,176 to complete a technical analysis of alternative AWTP layouts.

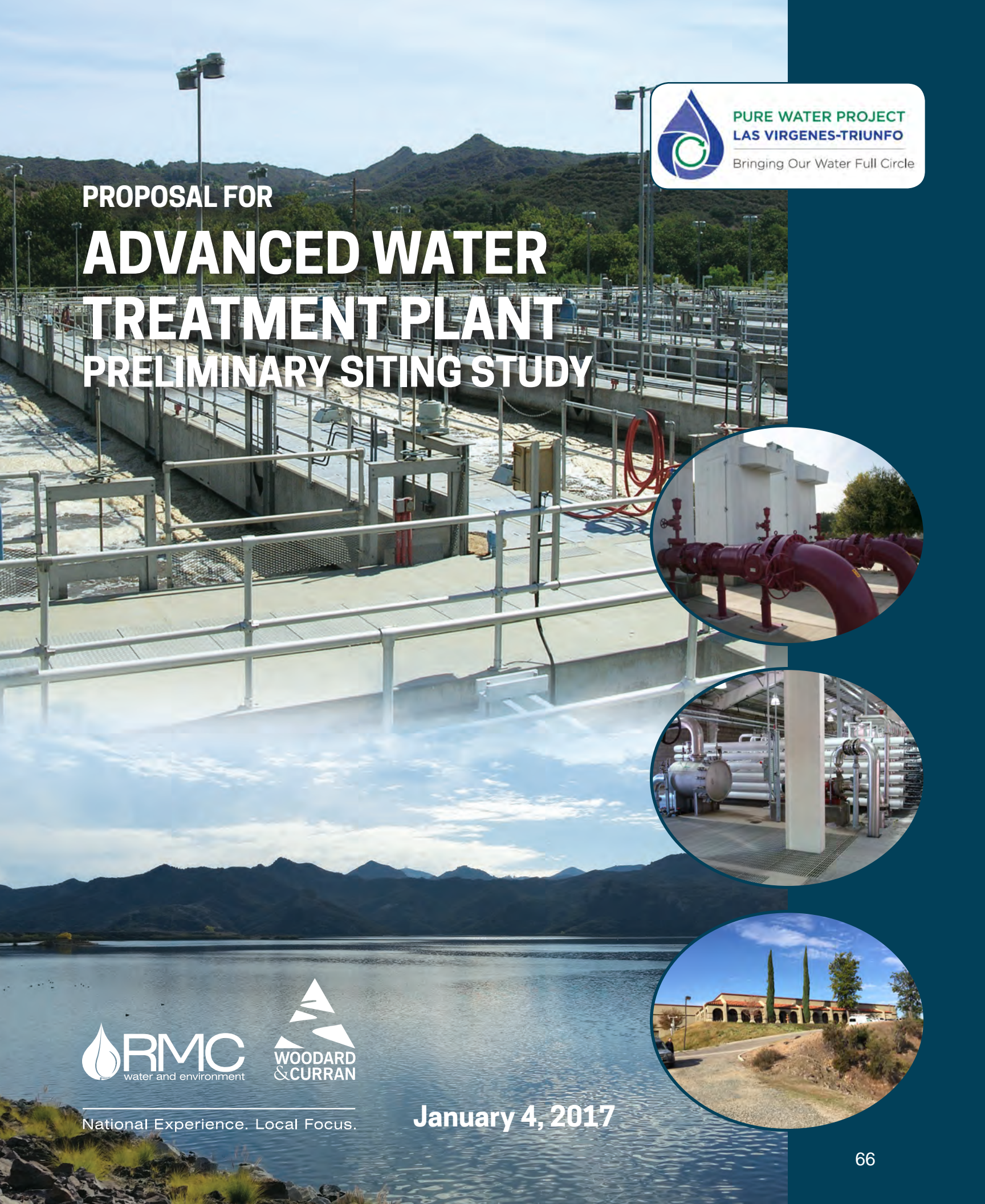
Based on the proposed scope of work, project understanding, experience and fee proposal, staff recommends accepting the proposal from RMC Water and Environment, a Woodard & Curran Company, in the amount of \$157,648, which includes an optional task to complete a technical analysis of alternative AWTP layouts.

All three proposals were from well-known, qualified firms and responsive to the Request for Proposals. RMC's base fee proposal was \$149,472; however, the proposal four optional tasks were presented. The optional tasks were: (1) technical analysis of alternative AWTP layouts for \$8,176; (2) additional key stakeholder meetings for \$5,181; (3) technical analysis of failure response time strategy for \$8,524; and, (4) a key stakeholder workshop for \$3,630. The evaluation committee of LVMWD and TSD staff recommends approving the technical analysis of alternative AWTP layouts because it could added value to the study by increasing the number of potential sites that can be considered. However, the effort will need to be balanced with the operational and maintenance constraints that a smaller footprint and multi-story AWTP could create.

Prepared by: David R. Lippman, P.E., Director of Facilities and Operations

ATTACHMENTS:

- RMC Preliminary Siting Study Proposal
- RMC Preliminary Siting Study Fee Proposal




**PURE WATER PROJECT
LAS VIRGENES-TRIUNFO**
Bringing Our Water Full Circle

**PROPOSAL FOR
ADVANCED WATER
TREATMENT PLANT
PRELIMINARY SITING STUDY**



National Experience. Local Focus.

January 4, 2017



National Experience. Local Focus.

January 4, 2017

David R. Lippman, P.E.
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302

RE: Advanced Water Treatment Plant Preliminary Siting Study

Dear Mr. Lippman:

Thank you for the opportunity to present our proposal to provide professional engineering services for the Advanced Water Treatment Plant Preliminary Siting Study (Siting Study). This project supports the Las Virgenes – Trifuno Joint Powers Authority (JPA) Pure Water Project for which Guiding Principles, a Plan of Action, and a Basis of Design Report for an Advanced Water Treatment Plant (AWTP) have already been completed. The next step in this process is the subject project and its main objectives are to identify an initial broad set of candidate sites, screen for certain fundamental technical and institutional requirements, and then identify a small group of preferred candidate sites for further consideration as the project moves forward.

Through our experience performing similar AWTP siting studies, RMC (now a Woodard & Curran Company) has a comprehensive understanding of associated issues and trade-offs involved. Our approach will develop a defensible methodology to identify potential sites (i.e., around 200), then apply a robust screening process that uses “fatal flaws” to narrow that number (30-40 sites), and finally conduct a detailed comparative analysis that ranks the remaining sites using specific attributes (10-12 sites). Regular interaction with the JPA staff, including structured workshops, will be essential to the process.

Our proposed project team will be led by Brian Dietrick who brings 25 years of experience leading feasibility studies, integrated regional water management plans, recycled water master plans, and alternatives analyses that included extensive stakeholder and public outreach. He will be supported by Tom Richardson who is chair of the WateReuse Association’s Potable Reuse Committee and has been at the forefront of the regulatory and technical evolution of potable reuse over the past 20 years. Along with Tom and additional experts from RMC, Brian will be assisted by professionals from Oakridge Geoscience, Inc. who bring in-depth geotechnical engineering experience, as well as Associated Right of Way Services, Inc., a leading expert in real estate and right of way consulting.

We are excited for this opportunity to continue our work with you. Based on the Siting Study’s scope of work, we would like to recommend two insurance-related clarifications for the JPA’s consideration as part of our proposal. We have included this verbiage in Appendix A. Should you have any questions regarding our qualifications or approach, please contact me at 213-223-9479 or bdietrick@woodardcurran.com.

Sincerely,

Brian Dietrick, P.E., Project Manager



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Section 2 – Project Understanding and Approach

Section 3 – Scope of Work

Section 4 – Project Team

Section 5 – Project Experience and References

Appendix

A – Insurance Clarifications

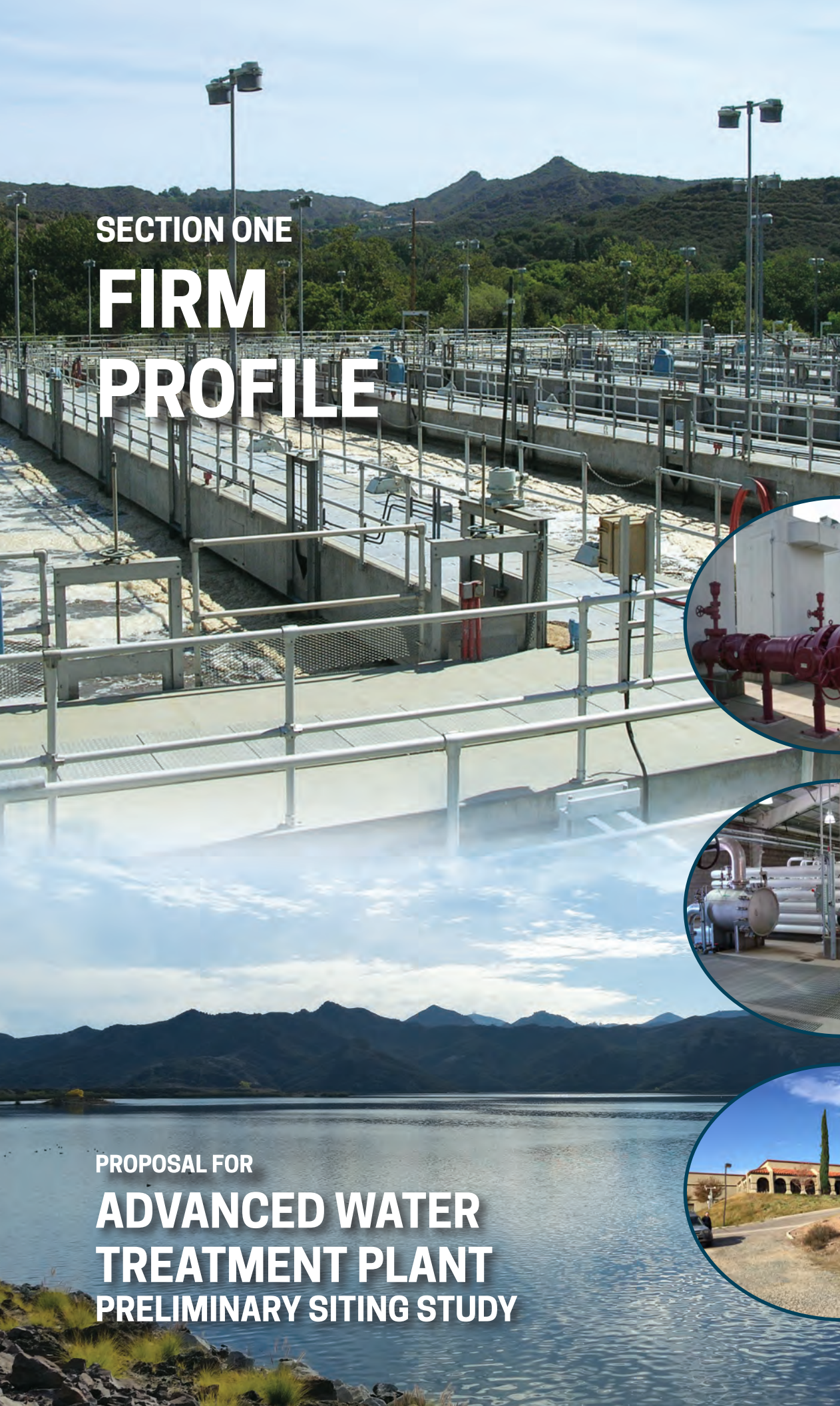
B – Team Resumes

C – Proof of Professional Registrations

D – Certificate of Professional Liability Insurance

SECTION ONE

FIRM PROFILE



PROPOSAL FOR

ADVANCED WATER TREATMENT PLANT PRELIMINARY SITING STUDY

SECTION ONE

FIRM PROFILE

Inspired by our commitment to continually expand exceptional client service and innovative solutions to the most complex water-related challenges, RMC Water and Environment (RMC) has recently merged with East Coast-based Woodard & Curran. Together, our combined firm will deliver a greater breadth and depth of services to meet today's complex water management needs, providing our clients and the water industry with:

- Expanded capabilities in infrastructure and facility design
- Top talent and national expertise in a wide range of water and environmental issues
- Experience in alternative delivery methods such as design-build

Our combined company now provides clients with access to over 900 highly qualified professionals from 25 locations across the U.S. RMC serves as the West Coast division of Woodard & Curran. We look forward to sharing our enhanced capabilities with you.

WOODARD & CURRAN

Woodard & Curran is an integrated engineering, science, and operations company. Privately held and steadily growing, we serve public and private clients locally and nationwide. Talented people are at the heart of our firm. Our company was founded in 1979 on a simple business concept: provide an enjoyable place to work with opportunity, integrity, and commitment, and we will attract talented people. It happened. At the heart of our company are people who are experts in their fields and passionate about what they do, showing a level of commitment and integrity that drive results for our clients. You experience this power every day in our actions, our solutions, and our promises kept. We have been serving cities, towns, and state governments for over 35 years. Today, we offer services beginning with studies, concept, and design, on through construction and operations to address our clients' solid waste, wastewater, water, stormwater, and civil engineering needs.

Woodard & Curran was named on Engineering News Record's 2016 list of Top 200 Environmental Firms as well as the list of Top 500 Design Firms.

Firm Name:

RMC, a Woodard & Curran Company
888 South Figueroa Street,
Suite 1700
Los Angeles, CA 90017
213.223.9460

Corporate Headquarters:

41 Hutchins Drive
Portland, ME 04102

Principal-in-Charge:

Tom Richardson, P.E.

Project Manager:

Brian Dietrick, P.E.



SECTION TWO

PROJECT UNDERSTANDING AND APPROACH

2. Project Understanding
and Approach



PROPOSAL FOR

ADVANCED WATER TREATMENT PLANT PRELIMINARY SITING STUDY

SECTION TWO

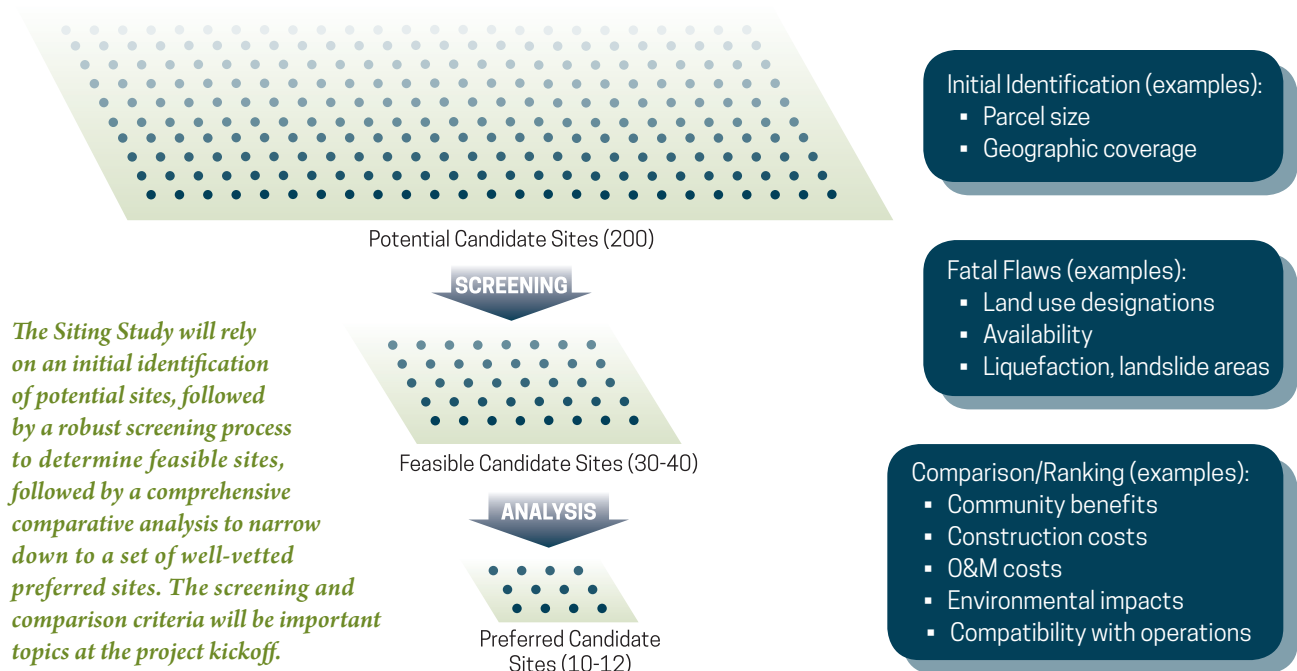
PROJECT UNDERSTANDING AND APPROACH

The Las Virgenes – Triunfo Joint Powers Authority (JPA) between Las Virgenes Municipal Water District (LVMWD) and the Triunfo Sanitation District (TSD) is seeking to diversify their water resources portfolio, reduce the use of imported water, and more proactively manage treated effluent from the Tapia Water Reclamation Facility (Tapia) without discharging to Malibu Creek. To this end, the JPA has embarked on a series of investigations to develop a Surface Water Augmentation (SWA) project that introduces purified water into the Las Virgenes Reservoir (LVR). The project is known as the Pure Water Project Las Virgenes – Triunfo (Pure Water). Thus far, the JPA has completed Guiding Principles, a Plan of Action, and a Basis of Design Report (BODR) that establish the project objectives and design criteria for an Advanced Water Treatment Plant (AWTP). In addition, a hydrodynamic modeling analysis of the reservoir will be underway soon.

Another important aspect of the Pure Water project is the decision process used to determine the location of the AWTP and supporting infrastructure. The objective of this Siting Study is to identify an initial broad set of candidate sites, screen for certain fundamental technical and institutional requirements, and then conduct a comparative analysis to identify the best candidate sites that would receive further consideration as the project moves forward. This process will require a robust screening methodology (i.e., defining true fatal flaws), followed by a comprehensive analysis that ranks the remaining sites using specific attributes.

At the kickoff meeting with staff, both the basic screening objectives and the more detailed comparison criteria to be used in the evaluation of candidate sites will be identified. It is assumed for this proposal that:

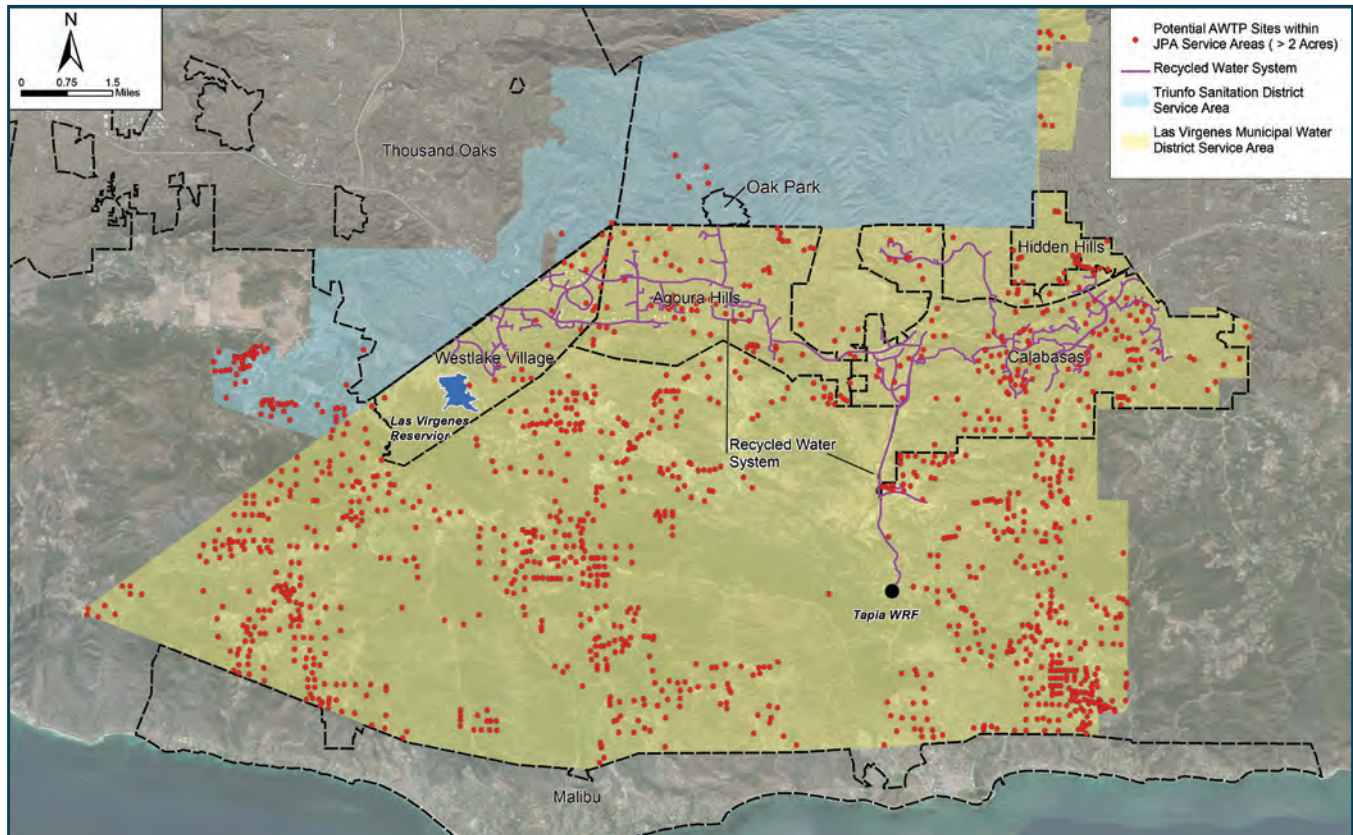
- the Initial Identification of parcels will yield approximately 200 sites,
- the Screening Process will yield approximately 30-40 sites, and
- the Comparative Analysis will yield approximately 10-12 sites.



PROJECT UNDERSTANDING AND APPROACH

STEP 1 - INITIAL IDENTIFICATION OF POTENTIAL CANDIDATE SITES

To provide a basis for the initial identification of potential sites (i.e., the world of opportunities), three key assumptions will need to be established early in the project work (preferably at the kickoff meeting). It is assumed that the Initial Identification step could start with over 1,000 parcels; the intent is to ultimately narrow that number down to approximately 200 potential candidate sites.

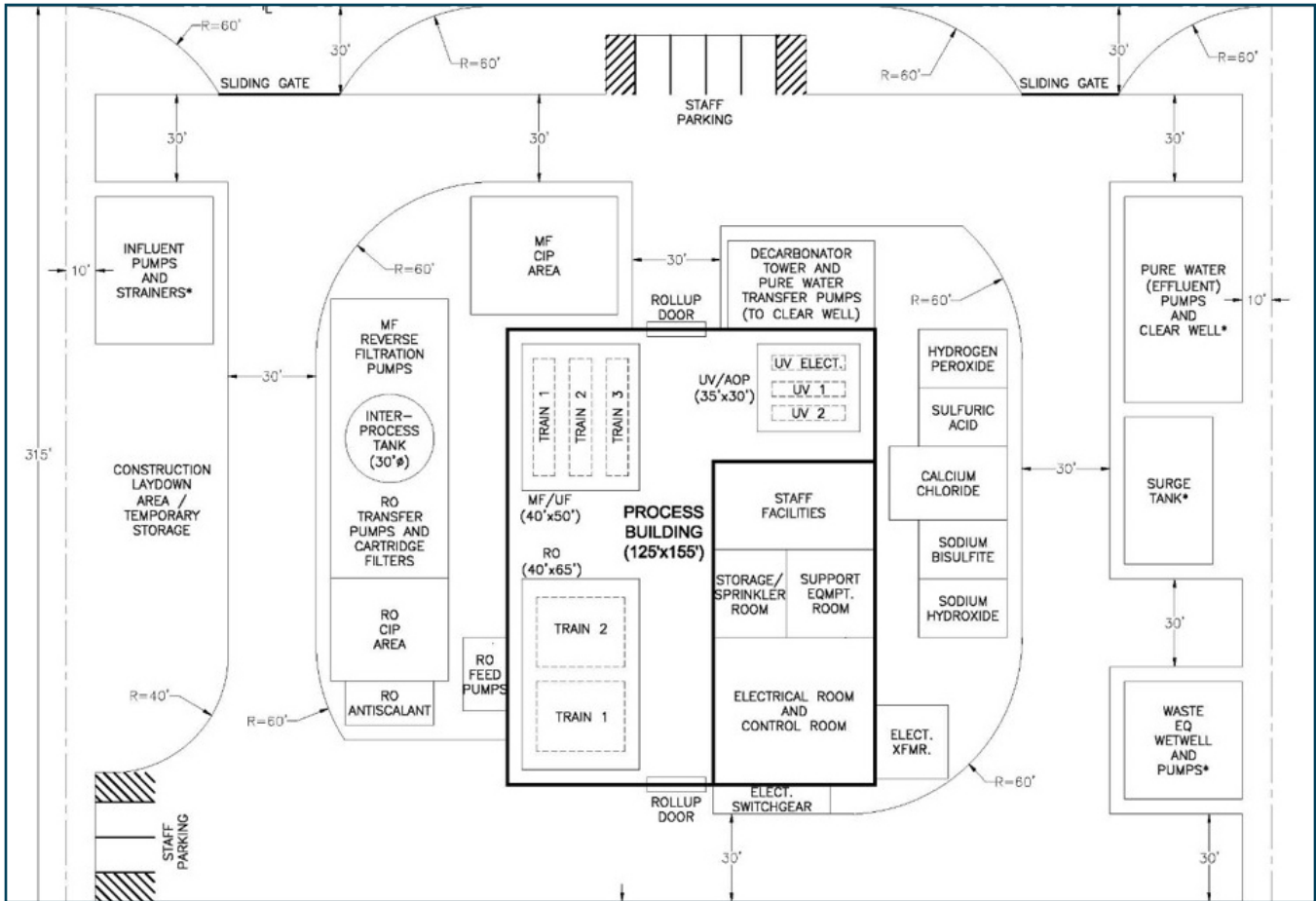


The importance of the Initial Identification step cannot be understated. A preliminary assessment by RMC identified over 1,300 parcels within the combined JPA service areas that are two acres or larger in size and designated as “vacant”. The intent of the Initial Identification is to reduce the number from potentially over 1,000 parcels to around 200 potential candidate sites.

The following assumptions may be used to help guide Step 1:

Assumption No. 1 - AWTP Parcel Size. Based on the recently completed BODR, candidate sites will need to accommodate a 6 mgd AWTP consisting of microfiltration, reverse osmosis, and advanced oxidation processes (MF/RO/AOP). Note that if the 1:100 dilution criterion is not achievable in LVR, space for an additional pathogen barrier treatment process would be required (anticipated in pending SWA draft regulations). In addition, storage volume requirements for recycled water feed, purified product water, RO concentrate, and other residuals need to be considered in parcel size requirements, as well as pump stations and potential future expansions. Meeting the parcel size requirement, once established, could be achieved through a combination of adjacent parcels or through the flexibility offered by using multi-story AWTP layouts, as described below.

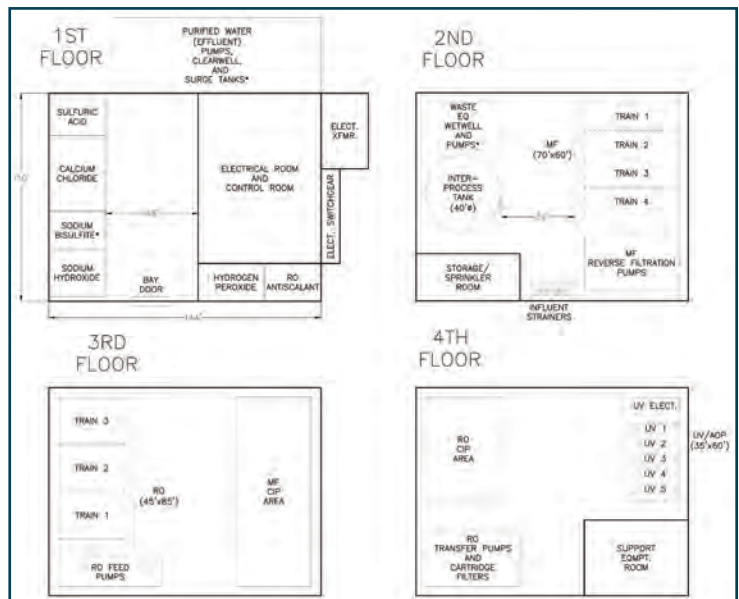
PROJECT UNDERSTANDING AND APPROACH



The BODR determined that a site approximately two acres in size will be needed for a 6 mgd AWTP facility. This requirement will be validated as a part of the work for the Siting Study.

A complicating factor in the identification of a minimum parcel size is the ability to modify the AWTP footprint using layout strategies (i.e., multi-story). As an example, RMC is investigating the feasibility of constructing a 10 mgd AWTP on a 0.5-acre site for a northern California agency. Accordingly, a range of parcel sizes, considering standard layout versus multi-story layout, could be established if desired by the JPA. Our scope of work includes this investigation as an optional task. The minimum parcel size for consideration in the initial selection of candidate sites will be determined at the project kick off meeting.

Assumption No. 2 - Geographic Coverage of Potential Candidate Sites. In order to limit the potential candidate sites to a manageable number (around 200), RMC proposes to work with the JPA to define the allowable geographic coverage.



RMC is currently investigating the feasibility of a 10 mgd AWTP on a 0.5-acre site for the Santa Clara Valley Water District. This type of multi-story layout could increase the number of feasible sites for the Pure Water AWTP.

PROJECT UNDERSTANDING AND APPROACH

One possible way to do this would be to confine potential sites to areas covered by the JPA service areas. Another would be to use an assumed radius of proximity (e.g., within five miles of LVR). Potential strategies for defining the geographic coverage include:

- confine to JPA service areas only
- confine to JPA service areas + defined margin (e.g., three miles)
- confine to JPA service areas + adjacent municipalities
- confine to radius of proximity (e.g., within five miles of LVR)
- confine to modified radius of proximity (e.g., within five miles of LVR or Tapia)

It is anticipated that there may be other reasonable ways to define allowable geographic coverage. RMC proposes to work with the JPA to come to agreement on this definition at the project kickoff meeting.

Assumption No. 3 – Location of Las Virgenes Reservoir Inlet Structure. Achieving a 1:100 dilution prior to withdrawal from LVR will be a key criterion for the Pure Water project. Hence, the location of the purified water inlet structure will be a critical component of the LVR SWA regulatory strategy, and it could influence AWTP siting. Based on our preliminary analysis, RMC has identified three potential inlet locations as a basis for conducting this siting analysis. Once additional information is received from the concurrent LVR Hydrodynamic Modeling Study, these inlet locations will be refined.



RMC has identified three preliminary inlet locations at LVR based on the reservoir configuration, the location of existing recycled water pipelines, and distance to the existing outlet structure near the Westlake Filtration Plant.

STEP 2 - SCREENING PROCESS FOR FEASIBLE CANDIDATE SITES

A robust Screening Process (i.e., with clear and defensible “fatal flaws”) is essential to narrow down the list of potential candidate sites to a smaller list of feasible candidate sites. As a basis for discussion, the following are some sample objectives that may be considered for the Screening Process. These are examples only and do not represent a comprehensive list of screening criteria. The main idea is that parcels would remain in consideration if they meet these objectives. It is assumed that the Screening Process will narrow the number of potential candidate sites down to approximately 30-40 feasible candidate sites.

This stage of the analysis will include a preliminary investigation into utility record drawings and other available material related to potential candidate sites; it also includes review of the relevant city and county general and specific plans, other JPA record drawings, and the BODR.

PROJECT UNDERSTANDING AND APPROACH

Objective No. 1 – Represent Appropriate Land Use Designations. Certain zoning and land use designations are more appropriate for siting of an AWTP, such as public/institutional or commercial, while others such as single-family residential or designated open space tend to be less appropriate, sometimes due to environmental concerns. The project team will work with JPA staff to identify appropriate land use designations for each jurisdiction in the JPA service area, and the team will strive to identify acceptable candidate sites in a variety of land use jurisdictions and to screen out unacceptable sites. The RMC team includes Associated Right of Way Services, Inc. (AR/WS), a real estate consulting firm that has broad experience in conducting this type of land use analysis. Other factors that could play a role include zoning regulations, land use restrictions, improvements, and significant demolition.

Objective No. 2 – Represent Diversity of Jurisdictions. While all municipalities within the JPA will receive benefits, either directly or indirectly, from the Pure Water project, certain municipalities may be more or less favorably inclined to receive an AWTP within its jurisdiction. Potential benefits could include some of the following:

- Road reconstruction cost sharing
- Developer partnerships
- Multi-benefit funding pursuits (regional collaboration)

Other benefits may also be provided. That said, municipalities and/or agencies that are not supportive of siting an AWTP within their service areas could be screened from further consideration.

Objective No. 3 – Reasonable Potential for Availability. One of the most dynamic elements in siting a public works facility is availability. Parcels that are on the market while you are conducting a preliminary siting investigation often are “gone” by the time a decision to proceed is made. Conversely, parcels may become available after a study is conducted. Land use can be just as important as market listings regarding parcels that may be available when the time comes to proceed with a project. The list of feasible candidate sites should include a mix of “current availability” as well as land use. AR/WS will support the team in this phase of analysis with their experience in performing market analyses and tracking trends within the real estate market.

Objective No. 4 – Geotechnical Acceptability. There may be certain parcels within the initial defined area of geographic coverage that are unacceptable because of poor soil conditions, potential for liquefaction, landslide vulnerability, or other geologic reasons. To the extent that these represent “fatal flaws”, RMC proposes to remove these areas from further consideration as part of the screening process. Our team includes Oakridge Geoscience, Inc. (OGI), a firm that specializes in performing this type of preliminary geotechnical analysis. OGI will support the team in defining reasonable and defensible constraints for geotechnical acceptability. This part of the Screening Process will consist of a preliminary geotechnical siting study that includes review of published geologic and geohazard data. “Fatal flaws” could include features such as poor foundation soil material, slope steepness, liquefaction potential, and landslide potential.

STEP 3 - COMPARATIVE ANALYSIS FOR PREFERRED CANDIDATE SITES

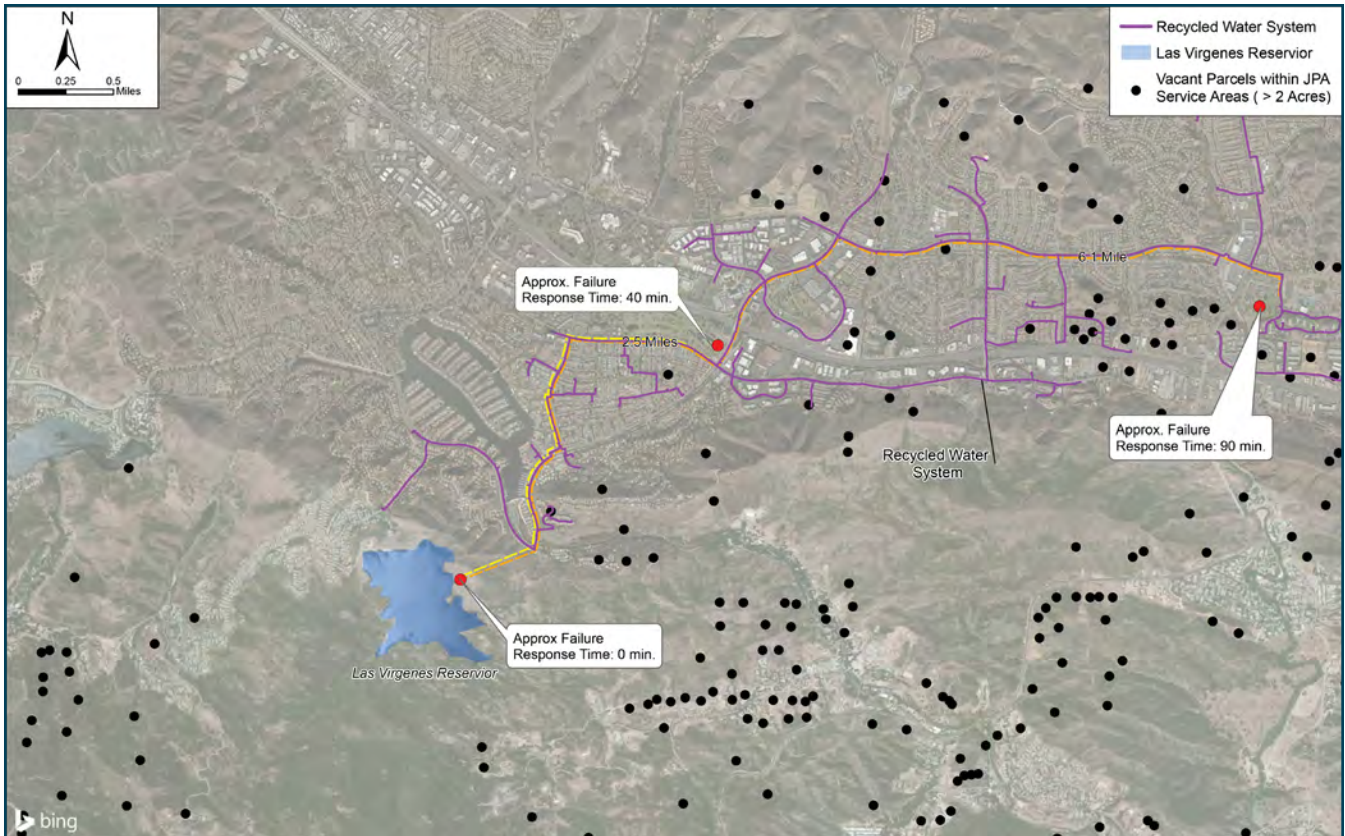
Once feasible candidate sites has been identified, additional criteria (to be finalized at the kickoff meeting) will be used to evaluate and rank the best candidate sites using a Comparative Analysis. Following are example criteria categories and specific criteria that could be used for this purpose. It is assumed that the Comparative Analysis will narrow the number of feasible candidate sites to approximately 10-12 preferred candidate sites.

PROJECT UNDERSTANDING AND APPROACH

Sample Criteria	Relative Benefits
Cost Influencers	
<p>Pipeline Lengths and Existing Utilities</p> <ul style="list-style-type: none"> ▪ Recycled water source pipeline ▪ Purified water pipeline ▪ Reverse osmosis (RO) concentrate pipeline ▪ Residual (non RO concentrate) pipeline to sewer connection (distance to sewer infrastructure with adequate capacity) ▪ Off-spec water pipeline (to storm drain or sanitary sewer) 	<p>In general, more pipeline projects, longer pipeline lengths and urban/developed construction settings will increase construction costs. A higher number of existing major utilities in pipeline alignments will also increase construction costs.</p>
<p>Pumping Requirements</p> <ul style="list-style-type: none"> ▪ Recycled water source ▪ Purified water ▪ RO concentrate ▪ Off-spec water pipeline (to storm drain or sanitary sewer) 	<p>In general, greater pumping distances and elevation changes will increase operational costs.</p>
<p>Site Work Requirements</p> <ul style="list-style-type: none"> ▪ Grading ▪ Utilities ▪ Access 	<p>In general, more complex sites with greater numbers of utilities, additional grading requirements, and/or difficult access will increase construction costs.</p>
Environmental and Community Considerations	
<p>Candidate Site</p> <ul style="list-style-type: none"> ▪ Greenfield considerations ▪ Construction impacts ▪ Noise ▪ Light ▪ Aesthetics 	<p>In general, sites with Greenfield issues; construction impacts; and/or a greater degree of operational noise, light, and aesthetic impacts will be less acceptable to the community.</p>
<p>Pipeline Alignments</p> <ul style="list-style-type: none"> ▪ Greenfield considerations ▪ Construction impacts 	<p>In general, pipeline alignments with Greenfield issues or greater construction impacts will have more environmental impacts that must be mitigated.</p>
<p>Community Partnerships</p> <ul style="list-style-type: none"> ▪ Cost sharing opportunities (e.g., street resurfacing already planned, developer needs, etc.) ▪ Opportunity for co-location with community benefit facilities (e.g., sports fields, demonstration gardens, etc.) 	<p>In general, AWPf sites that allow for more cost sharing opportunities and/or community benefits will be more acceptable to the community.</p>
Other Factors	
<p>AWTP Pipeline to Las Virgenes Reservoir (see figure below)</p> <ul style="list-style-type: none"> ▪ Upstream length to LVR (provides failure response time) ▪ Alternative to upstream pipeline length is comparable storage volume at AWTP ▪ Grade (eases operation of off-spec diversion) 	<p>In general, sites that allow for greater upstream response times and that rely on elevation head to divert off-spec water are preferable.</p> <p>Note: RMC’s scope of work includes a separate optional analysis to compare the benefits/costs of providing FRT in pipeline vs. storage tank.</p>

PROJECT UNDERSTANDING AND APPROACH

Sample Criteria	Relative Benefits
Management of Off-Spec Flows <ul style="list-style-type: none"> ▪ Purified water pipeline gradient ▪ Distance to storm drain or sanitary sewer ▪ Pumping requirement to storm drain or sanitary sewer ▪ Elevation of AWTP (should ideally be lower than LVR) 	In general, site features that make management of off-spec purified water more practical are preferred.
Supplemental Source - Urban Runoff Storm Water <ul style="list-style-type: none"> ▪ Available local urban runoff flow ▪ Conveyance pipeline length ▪ Pumping requirement 	In general, site features that make supplemental urban runoff more practical are preferred.
Compatibility with JPA Operations and Maintenance (O&M) Activities <ul style="list-style-type: none"> ▪ Distance to JPA facilities ▪ Distance to JPA O&M personnel 	In general, site features that are more compatible with ongoing JPA operations are preferred.



Providing an adequate length of pipeline upstream from LVR allows the capability to provide Failure Response Time (FRT) in case of an emergency. FRT could also be provided as storage tank volume near the AWTP site. RMC's scope of work includes an optional task to investigate the relative advantages of these two strategies. These preliminary alignments are for discussion purposes only and assume that existing pipe alignments would be followed.

PROJECT UNDERSTANDING AND APPROACH

The Comparative Analysis, like the Screening Process, will be supported by OGI. These team members will conduct a more focused desktop geotechnical study, including review of readily available data near the sites, review of selected aerial photographs, and a site reconnaissance to observe real conditions.

Project Workshops and Meetings

RMC proposes to maintain continuous contact with the JPA staff through biweekly progress conference calls. In addition, five workshops/meetings are planned at pivotal stages of the project. An optional workshop with stakeholders is also included in our scope of work.

1

Workshop 1 – Project Kickoff

- Introduce Team and project objectives, review background
- Determine assumptions for Initial Identification
- Determine draft screening criteria
- Determine draft comparative analysis criteria
- Discuss needed outreach to agencies/municipalities
- Information needs

2

Workshop 2 – Screening Process

- Review progress and project objectives
- Review results of Initial Identification
- Review results of Screening Process
- Adjustments to screening criteria
- Discuss additional outreach needs

3

Workshop 3 – Comparative Analysis

- Review progress and project objectives
- Review results of Comparative Analysis
- Adjustments to Comparative Analysis criteria
- Discuss additional outreach needs

4

Workshop 4 – Board Meeting

- Background
- Objectives of Pure Water
- Objectives of Siting Study
- Description of Site Selection process
- Findings of Site Selection process
- Next Steps

5

Workshop 5 – Additional Board Meeting

6

Workshop 6 – Optional Stakeholder Workshop



Meetings and workshops will be an important component of the work flow. Tom Richardson and Brian Dietrick will bring their extensive experience leading project meetings to the Siting Study effort.

RMC's QA/QC Process

Our team will rely on the project control systems developed by RMC to effectively plan and manage the JPA's project. We implement practical project control programs that avoid cost and schedule overruns while providing high quality work products. Proactive discussion and resolution of project issues, regular reporting of project progress, an established quality assurance program, and proven budget and schedule management tools are cornerstones of our project control systems.

Project Communication

Our project managers focus on communication—with both the client and team members—and sound project execution techniques to achieve a “no surprises” outcome for our projects. Conference calls, workshops, and

PROJECT UNDERSTANDING AND APPROACH

e-mail correspondence are techniques we employ to keep key team members and client staff on the same page, with frequency and means of communication dictated by client preference and project size and technical complexity. At a minimum, RMC will provide the JPA with the status of the project, budget status, schedule, and discuss any outstanding issues or concerns on a monthly basis.

“RMC met every schedule we had for submission of reports. Reports have always been clear and accurate (even in first draft form).”

– Brad Boman, Pasadena Water and Power

Quality Assurance Program

RMC will be responsible for the work products developed by our project team. Ensuring high-quality results requires application of proven quality assurance/quality control (QA/QC) procedures. RMC has established a company-wide QA/QC program that must be implemented for all projects. At the start of the project, a QA/QC plan is completed with the Deltek Vision (Deltek) system that identifies any technical issues that would require extra quality control reviews, establishes the expected project deliverables and review schedule, and the technical review responsibilities. Automatic alerts tied to the project schedule are then generated from Deltek for the technical reviewers and project managers. Additional procedures RMC utilizes related to QA/QC include:



- **QA/QC Reviews.** All work products must undergo peer or senior review prior to being submitted to the client.
- **Project Audits.** Senior project managers conduct audits of projects to ensure that they are being executed in a timely and efficient manner to meet the project scope, budget and schedule.
- **Senior Technical Advisory Review Workshops.** At the early stage of a complex project development, RMC may conduct workshops with senior technical resources of the project team to ensure that the best approach is being taken and the right specialty resources are being utilized to meet the technical challenges and goals of the project.

Budget Management

One of RMC’s key goals has been to improve efficiency and pass on the cost savings associated with this increased efficiency on to our clients.

Accurate Accounting

RMC’s primary cost management and control tool is our Deltek System. Deltek includes electronic time card entry directly into the accounting functions, electronic expense reporting, and real-time cost reporting back to our project managers. Deltek also allows each project manager to develop and track costs against a baseline plan that includes budgeted staff resources over the planned duration of the project. As costs are incurred against project account numbers, Deltek reports these costs and compares them against the planned expenditures as shown on the previous page.

PROJECT UNDERSTANDING AND APPROACH

Schedule Management

RMC establishes comprehensive baseline schedules that are reviewed and managed at least monthly. We also generate “look-ahead” schedules that identify upcoming activities, key milestones and decisions, allowing decision making to remain on-track. We incorporate your organization’s decision process into our schedule from the beginning, so senior management and staff can make informed decisions with adequate time for consideration.

“RMC Water and Environment provided engineering leadership for the project. RMC’s partnership with the City of Malibu in overseeing and managing the project was greatly appreciated and definitely assisted in controlling the project costs and maintaining our schedule.”

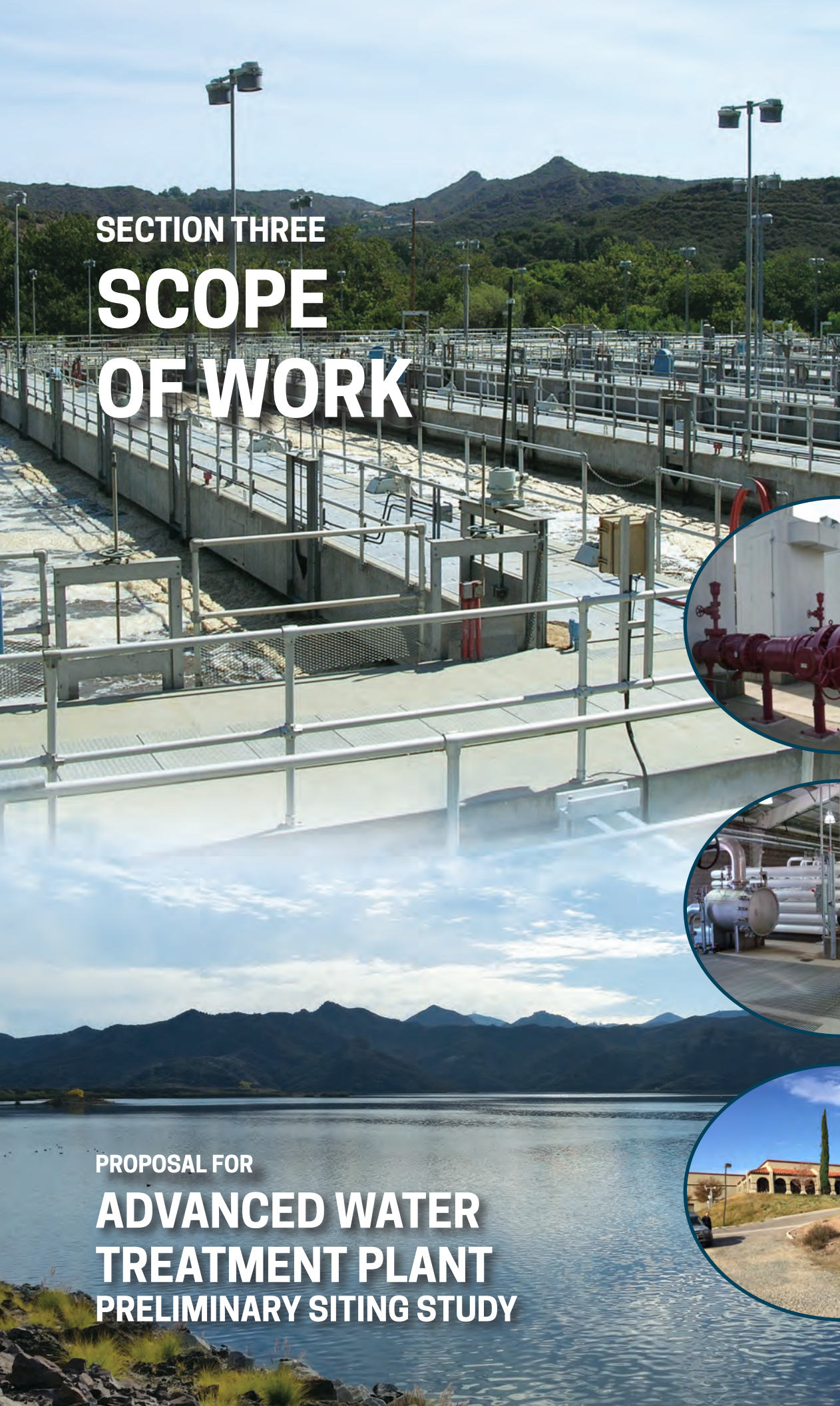
– Jim Thorsen, City of Malibu

The screenshot displays a software interface with several sections. At the top, there are tabs for 'General', 'QA/QC', 'Team', 'Clients/Contacts', 'Activities', 'Background', 'Amendments', 'Dates/Costs', 'M&G Campaigns', 'Files', and 'Log'. Below these, there are fields for 'QA/QC Billings', 'QA/QC Coordinator', 'QA/QC Charge #', and 'QA/QC Budget'. A table titled 'List of Deliverables' is visible, with columns for 'Task', 'Deliverable', 'Due Date', 'Reviewer within BMC', 'Reviewer outside BMC', 'Remarks', and 'Review Completed'. Below this, there are sections for 'STAR Workshop', 'STAR Committee', and 'Other responsibilities'.

Task	Deliverable	Due Date	Reviewer within BMC	Reviewer outside BMC	Remarks	Review Completed
Schematic Design		2/24/06	Hermanow, Glenn			
30% Design		3/31/06	Hermanow, Glenn		Due date is postponed @ 3/30/06	
60% Design		5/5/06	Hermanow, Glenn		Schematic design has been reviewed	5/1/06
90% Design		6/9/06	Hermanow, Glenn			6/16/06
Final Design		7/7/06	Bla, Steve			

RMC relies on Deltek to track contracts, project deliverables, billings, the QA/QC process, and budget. In addition, RMC project managers use templates for project status, meeting agendas, telephone memoranda, and meeting notes.

SECTION THREE
**SCOPE
OF WORK**



PROPOSAL FOR
**ADVANCED WATER
TREATMENT PLANT
PRELIMINARY SITING STUDY**

SECTION THREE

SCOPE OF WORK

TASK 1 – INITIAL IDENTIFICATION AND KICKOFF MEETING

RMC will conduct the Initial Identification step of the Siting Study, the main purpose of which is to narrow down the “universe” of possible sites to approximately 200 potential candidate sites. This is the first of a three-step process designed to provide a defensible and thoroughly-vetted siting analysis. This task also includes the Project Kickoff Meeting.

Subtask 1.1: Prepare Information Request

RMC will prepare a comprehensive Information Request for submittal to the JPA staff in advance of the Project Kickoff Meeting. It is assumed that the information will be provided within two weeks of the request and that any remaining information needs will be discussed at the Project Kickoff. The information request will include, but is not limited to, the following:

- Utility record drawings
- City general plans
- County general plans
- Assessor and real estate records
- Available geotechnical data

This subtask includes the preparation of an initial list of stakeholder outreach targets (e.g., local land use officials) that will be presented and discussed at the Project Kickoff Meeting. This stakeholder list will be maintained and updated throughout the project as a reference for deliverable reviews and meetings. This task also includes a review of existing documents, both from the Information Request and documents already obtained (e.g., Plan of Action, BODR).

Subtask 1.2: Develop Preliminary Methodology

RMC will develop a preliminary version of the methodology for Initial Identification of potential candidate sites. The intent is to create the methodology and apply it to sites within the region/vicinity in advance of the Project Kickoff Meeting, such that an initial set of findings (i.e., 200 potential candidate sites) is ready for discussion. Then the assumptions and constraints of the methodology will be explained and revised at the Project Kickoff Meeting. After receiving feedback from JPA staff at the Kickoff, the methodology and findings will be revised accordingly and documented in a Draft technical memorandum (TM), covered under Subtask 1.4. Note that for Task 1, the Draft TM will be submitted for review after the Project Kickoff Meeting (as opposed to Task 2 and Task 3, where the Draft TMs are submitted prior to the workshops).

The methodology for the Initial Identification may include criteria such as AWTP parcel size restrictions, limitations on allowable geographic coverage, and other factors. These criteria will be developed in detail; and one objective of the Kickoff will be to reach consensus on the methodology for Initial Identification.

Note: Optional Task O-1, if authorized, would be performed during this time period (see below under Optional Tasks). This effort would provide a technical analysis of alternate AWTP layouts that could result in a smaller footprint. Findings from this analysis would be included in the Draft TM under Subtask 1.4.

SCOPE OF WORK

This subtask includes a preliminary investigation of likely purified water inlet locations at LVR, based on reservoir configuration, prevailing winds, and the locations of existing recycled water pipelines. These inlet locations will ultimately be used to determine locations and costs for other facilities (e.g., AWTP, conveyance pipelines, etc.). It is assumed that the inlet locations will be refined with findings from the concurrent LVR Hydrodynamic Modeling Study, once available.

Subtask 1.2 also includes development of preliminary versions of the methodologies/criteria for the Screening Process and Comparative Analysis (Tasks 2 and 3, respectively). These methodologies will be developed to be compatible with the Initial Identification methodology and will also be presented at the Project Kickoff Meeting. These will represent “first versions” of the Task 2 and 3 methodologies and are intended to be subsequently refined after Task 1 is complete.

Subtask 1.3: Workshop 1 – Project Kickoff Meeting

RMC will prepare for, conduct, and document the first workshop, which will also serve as the Project Kickoff Meeting. This meeting will be approximately two (2) hours in duration and will cover an extensive list of topics, likely to include the following:

- Introduce team and project objectives, review background
- Explain assumptions and constraints for Initial Identification
- Discuss findings of Initial Identification
- Determine draft Screening Criteria
- Determine draft Comparative Analysis Criteria
- Discuss stakeholder outreach to agencies/municipalities
- Remaining information needs (if needed, after initial Information Request)

Subtask 1.4: Prepare Draft Initial Identification TM

RMC will document all assumptions, constraints, and feedback from meetings/workshops in a Draft TM that explains the Initial Identification of potential candidate sites. The Draft TM will be submitted for review by JPA staff (and other reviewers as desired).

Subtask 1.5: Prepare Final Draft Initial Identification TM

RMC will receive comments from JPA staff and will incorporate them into a Final Draft TM. The Final Draft version will also be submitted for review, but it is anticipated that a “final” version of the TM will not be developed. Instead, the Final Draft TM and any comments will eventually be incorporated into a chapter/section in the AWTP Preliminary Siting Study.

▪ Deliverables:

- » Information Request
- » Working List of Stakeholder Outreach Targets
- » Workshop 1 agenda, materials, notes
- » Draft Initial Identification TM (electronic version, Word)
- » Final Draft Initial Identification TM (electronic version, Word)

▪ Assumptions:

- » JPA will provide information requested within 2 weeks
- » Workshop 1 will be two (2) hours in duration
- » JPA review period for Draft/Final Draft TMs is one week
- » Approximately 200 potential candidate sites will be identified
- » Initial Identification consensus will be achieved at Kickoff
- » Preliminary Screening Criteria consensus will be achieved at Kickoff

SCOPE OF WORK

TASK 2 – SCREENING PROCESS AND WORKSHOP 2

RMC will conduct the Screening Process step of the Siting Study, the main purpose of which is to narrow down the 200 potential candidate sites to approximately 30-40 feasible candidate sites. This is the second of a three-step process designed to provide a defensible and thoroughly-vetted siting analysis. This task also includes Workshop 2.

Subtask 2.1: Develop Detailed Screening Process

RMC will further develop and refine the preliminary Screening Process methodology developed under Subtask 1.2, based on feedback obtained at the Kickoff. Criteria to be used in the Screening Process may include land use designations, jurisdictional support (or lack thereof), availability, geotechnical issues, and other factors.

This stage of the analysis will include a preliminary investigation into utility record drawings and other available material related to potential candidate sites; it also includes review of the relevant city and county general and specific plans, other JPA record drawings, and the BODR.

The Screening Process will include a preliminary geotechnical review, led by OGI, that includes review of published geologic and geohazard data. “Fatal flaws” could include features such as poor foundation soil material, slope steepness, liquefaction potential, and landslide potential. The findings of the geotechnical siting study will be included in the Draft TM, under Subtask 2.2.

Note: Optional Task O-2, if authorized, would be performed during this time period (see below). This effort would cover meetings with up to three (3) stakeholder municipalities/agencies to solicit early input on the Siting Study. Feedback from the meetings, particularly concerning support for siting an AWTP within their respective jurisdictions, would be included in the Draft TM under Subtask 2.2.

Subtask 2.2: Prepare Draft Screening Process TM

RMC will document all assumptions, constraints, and feedback from previous meetings/workshops in a Draft TM that explains the Screening Process for feasible candidate sites. The Draft TM will be submitted for review by JPA staff (and other reviewers as desired) in advance of Workshop 2.

Subtask 2.3: Workshop 2 – Screening Process

RMC will prepare for, conduct, and document the second workshop. This meeting will be approximately two (2) hours in duration and will cover an extensive list of topics, likely to include the following:

- Review progress
- Review results of Initial Identification
- Review results of Screening Process
- Adjustments to screening criteria
- Discuss additional outreach needs

Subtask 2.4: Prepare Final Draft Screening Process TM

RMC will receive comments from JPA staff and will incorporate them into a Final Draft TM. The Final Draft version will also be submitted for review, but it is anticipated that a “final” version of the TM will not be developed. Instead, the Final Draft TM and any comments will eventually be incorporated into a chapter/section in the AWTP Preliminary Siting Study.

SCOPE OF WORK

▪ Deliverables:

- » Workshop 2 agenda, materials, notes
- » Draft Screening Process TM (electronic version, Word)
- » Final Draft Screening Process TM (electronic version, Word)

▪ Assumptions:

- » Workshop 2 will be two (2) hours in duration
- » JPA review period for Draft/Final Draft TMs is two weeks
- » Approximately 30-40 feasible candidate sites will be identified
- » Screening Process criteria, methodology, and general findings will be finalized at Workshop 2
- » Field observation and subsurface exploration will not be conducted as a part of the preliminary geotechnical review

TASK 3 – COMPARATIVE ANALYSIS AND WORKSHOP 3

RMC will conduct the Comparative Analysis step of the Siting Study, the main purpose of which is to narrow down the 30-40 feasible candidate sites to approximately 10-12 preferred candidate sites. This is the third of a three-step process designed to provide a defensible and thoroughly-vetted siting analysis. This task also includes Workshop 3.

Subtask 3.1: Develop Detailed Comparative Analysis Methodology

RMC will further develop and refine the preliminary Comparative Analysis methodology developed under Subtask 1.2, based on feedback obtained at the Kickoff and elsewhere. Criteria to be used in the Comparative Analysis may include cost influencers, community issues, environmental issues, and other factors.

The Comparative Analysis will include a geotechnical desktop study, led by OGI, that includes review of readily available geotechnical data near the sites, review of selected aerial photographs, and site reconnaissance to observe site conditions. A summary table of geotechnical site conditions, including anticipated foundation materials (bedrock, alluvium, etc.), potential geohazards (slope instability, liquefaction, flooding, etc.), and approximate historical groundwater depths will be developed and included in the Draft TM, under Subtask 3.2.

Note: Optional Task O-3, if authorized, would be performed during this time period (see below). This effort would cover a technical analysis that compares the relative merits of two different failure response time (FRT) strategies. Findings from this analysis would be included in the Draft TM under Subtask 3.2.

Subtask 3.2: Prepare Draft Comparative Analysis TM

RMC will document all assumptions, constraints, and feedback from previous meetings/workshops in a Draft TM that explains the Comparative Analysis for preferred candidate sites. The Draft TM will be submitted for review by JPA staff (and other reviewers as desired) in advance of Workshop 3.

Subtask 3.3: Workshop 3 – Comparative Analysis

RMC will prepare for, conduct, and document the third workshop. This meeting will be approximately two (2) hours in duration and will cover an extensive list of topics, likely to include the following:

- Review progress
- Adjustments to Comparative Analysis criteria
- Review results of Comparative Analysis
- Discuss additional outreach needs

SCOPE OF WORK

Subtask 3.4: Prepare Final Draft Comparative Analysis TM

RMC will receive comments from JPA staff and will incorporate them into a Final Draft TM. The Final Draft version will also be submitted for review, but it is anticipated that a “final” version of the TM will not be developed. Instead, the Final Draft TM and any comments will eventually be incorporated into a chapter/section in the AWTP Preliminary Siting Study.

▪ Deliverables:

- » Workshop 3 agenda, materials, notes
- » Draft Comparative Analysis TM (electronic version, Word)
- » Final Draft Comparative Analysis TM (electronic version, Word)

▪ Assumptions:

- » Workshop 3 will be two (2) hours in duration
- » JPA review period for Draft/Final Draft TM is two weeks
- » Approximately 10-12 preferred candidate sites will be identified
- » Comparative Analysis criteria, methodology, and general findings will be finalized at Workshop 3
- » No subsurface exploration will be conducted to confirm observations from the focused geotechnical desktop study

TASK 4 – AWTP PRELIMINARY SITING STUDY REPORT

RMC will prepare a Draft AWTP Preliminary Siting Study that incorporates all of the final draft TMs prepared under Tasks 1 through 3, as well as any additional feedback obtained from meetings, workshops, and/or progress calls. Once completed, this draft version will be distributed for review by JPA staff (and other reviewers as desired). Comments received will be incorporated into a Final AWTP Preliminary Siting Study.

Note: Optional Task O-4, if authorized, would be performed during this time period (see below). This effort would provide for a Stakeholder Workshop to explain the Siting Study process and findings to a selected group of key stakeholders. Feedback from the workshop would be included in the Draft AWTP Preliminary Siting Study under Subtask 4.1.

Subtask 4.1: Draft AWTP Preliminary Siting Study Report

Subtask 4.2: Final AWTP Preliminary Siting Study Report

▪ Deliverables:

- » Draft AWTP Preliminary Siting Study Report (electronic version, Word)
- » Final AWTP Preliminary Siting Study Report (elec. version, PDF; five [5] hard copies)

▪ Assumptions:

- » JPA review period for Draft Study is two weeks
- » RMC time to incorporate comments into Final Study is one week

SCOPE OF WORK

TASK 5 – JPA BOARD MEETINGS

RMC will prepare for, conduct, and document up to two (2) JPA Board meeting presentations. Board meeting attendance and participation will be at the discretion of JPA staff. These meetings are assumed to be approximately two (2) hours in duration and will cover an extensive list of topics, likely to include the following.

- Background
- Objectives of Pure Water
- Objectives of Siting Study
- Description of process
- Findings of process
- Next Steps

Subtask 5.1: Board Meeting No. 1

Subtask 5.2: Board Meeting No. 2

- **Deliverables:**
 - » JPA Board meeting agenda, materials, notes
- **Assumptions:**
 - » JPA Board meetings will be two (2) hours in duration
 - » First JPA Board meeting will occur the first Monday of Month 7 of project
 - » Second JPA Board meeting will occur the first Monday of Month 8 of project

TASK 6 – PROJECT MANAGEMENT

RMC will perform routine project management duties as explained in detail in Section 2 of this proposal (Project Understanding and Approach). This task also includes biweekly progress calls with JPA staff that are intended to provide an opportunity for regular communication.

Subtask 6.1: Project Administration

RMC will provide invoicing, progress reports, and project setup for the project.

Subtask 6.2: Quality Assurance/Quality Control (QA/QC)

RMC will provide QA/QC for all deliverables submitted under this project.

Subtask 6.3: Biweekly Progress Calls with JPA Staff

RMC will conduct biweekly progress calls with JPA staff.

- **Deliverables:**
 - » Monthly progress reports and invoices, sub-invoices
 - » Call notes (assumed to be in email format)
- **Assumptions:**
 - » Progress calls will occur twice per month except when workshops are scheduled
 - » Total number of progress calls is twelve (12)
 - » Progress calls will be between 30-60 minutes in duration

SCOPE OF WORK

OPTIONAL TASKS

Task 0-1: Technical Analysis of Alternate AWTP Layouts

Based on a target parcel size for the AWTP determined at the Kickoff Meeting (specifically the area required), the RMC team will develop on alternative layout and associated cost implications. This analysis will compare the benefits and costs of a standard single-story layout versus a multi-story layout. The potential value of this analysis is to determine whether smaller parcels could be considered as feasible if alternate AWTP layouts are used. This work would be performed in parallel with Task 1 as part of the Initial Identification methodology and would be incorporated into the draft Task 1 TM.

- **Assumptions:**

- » The write-up will be incorporated into the Task 1 Draft TM

Task 0-2: Additional Meetings

RMC will prepare for, conduct, and document up to three (3) meetings with key stakeholders selected with/by the JPA staff. The primary purpose of these meetings would be to solicit feedback on the Task 2 Screening Process, particularly with regard to jurisdictional support for an AWTP within a given stakeholder service area. The potential value of this effort would be to gain insights upfront on roadblocks to feasible candidate sites. These meetings would occur in parallel with Task 2 as part of the Screening Process methodology and feedback would be incorporated into the draft Task 2 TM.

- **Deliverables:**

- » Meeting agendas, materials, notes

- **Assumptions:**

- » Up to three meetings are included
- » Meeting duration is 1.5 hours
- » Feedback will be incorporated into Draft Task 2 TM

Task 0-3: Technical Analysis of Failure Response Time Strategy

RMC will perform a technical analysis to compare the relative costs and benefits of two strategies for providing adequate Failure Response Time (FRT) for the management of off-spec AWTP product water. The two strategies would consist of travel time in the pipeline between the AWTP and LVR, versus comparable retention time in a storage tank. The potential value of this analysis is to provide insights on the preferred strategy. It is assumed that the value of FRT will be determined at Workshop 1 or Workshop 2 and that conceptual-level costs would be developed for the analysis. This work would be performed in parallel with Task 3 as part of the Comparative Analysis methodology and would be incorporated into the draft Task 3 TM.

- **Assumptions:**

- » FRT value will be determined at Workshop 1 or 2
- » Concept-level costs will be developed
- » The write-up will be incorporated into the Task 3 Draft TM

SCOPE OF WORK

Task O-4: Workshop 4 - Stakeholder Workshop

RMC will prepare for, conduct, and document a fourth workshop to inform key stakeholders about the Siting Study process and solicit feedback. The intent is to hold this meeting in parallel with Task 4, after the key steps of the Siting Study have been completed and after the first JPA Board meetings. This workshop will be approximately two (2) hours in duration and will cover an extensive list of topics, likely to include the following:

- Background
- Objectives of Pure Water
- Objectives of Siting Study
- Description of process
- Findings of process
- Next steps

The list of invitees/attendees and the subject matter to be covered would be determined in collaboration with JPA staff. This workshop could be viewed as a collective “follow-up” meeting to the initial outreach conducted under Optional Task O-2.

- **Deliverables:**
 - » Workshop agenda, materials, notes
- **Assumptions:**
 - » Duration is two (2) hours

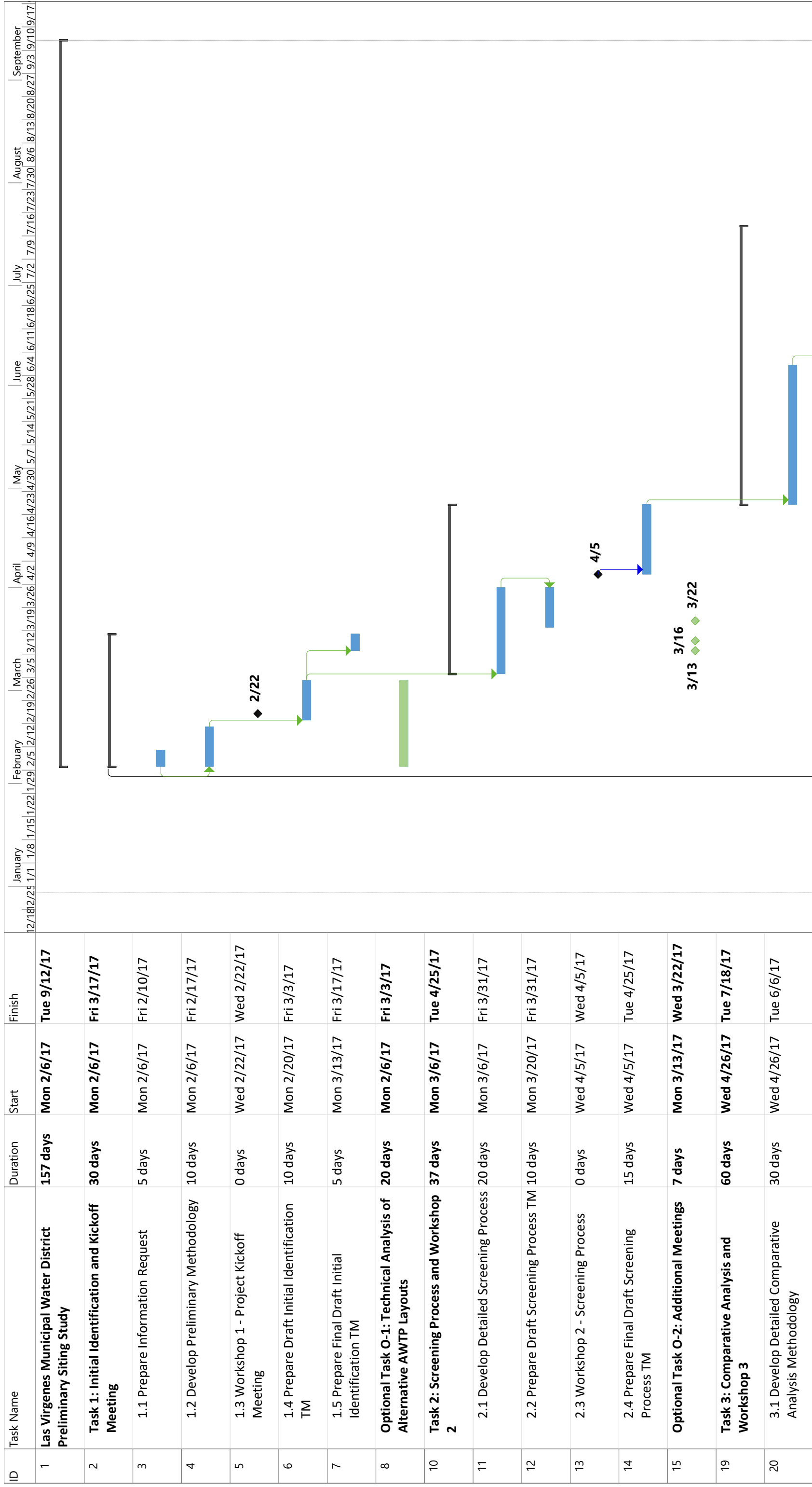
Project Schedule

On the following pages, RMC has developed a detailed 8-month schedule for completion of the AWTP Preliminary Siting Study. We believe the schedule is feasible to complete the scope of work outlined in our proposal. As with any project, schedules may be delayed or expedited depending upon the following factors:

- Responsiveness to requests for information
- Availability for meetings
- Timely review of comments on draft materials

RMC prides itself on proactive schedule management, and if selected for the AWTP Preliminary Siting Study, we will work closely with the JPA to ensure the project stays on track.

It should be noted that the Optional Tasks are shown with their corresponding Primary Work Tasks in the Project Schedule. In the Scope of Work and Fee Estimate, the Optional Tasks are shown at the end.



ID	Task Name	Duration	Start	Finish	January	February	March	April	May	June	July	August	September																															
21	3.2 Prepare Draft Comparative Analysis TM	10 days	Wed 5/24/17	Tue 6/6/17	12/18/17	12/25/17	1/1/18	1/8/18	1/15/18	1/22/18	1/29/18	2/5/18	2/12/18	2/19/18	2/26/18	3/5/18	3/12/18	3/19/18	3/26/18	4/2/18	4/9/18	4/16/18	4/23/18	4/30/18	5/7/18	5/14/18	5/21/18	5/28/18	6/4/18	6/11/18	6/18/18	6/25/18	7/2/18	7/9/18	7/16/18	7/23/18	7/30/18	8/6/18	8/13/18	8/20/18	8/27/18	9/3/18	9/10/18	9/17/18
22	3.3 Workshop 3 - Comparative Analysis	0 days	Wed 6/14/17	Wed 6/14/17																																								
23	3.4 Prepare Final Draft Comparative Analysis TM	25 days	Wed 6/14/17	Tue 7/18/17																																								
24	Optional Task O-3: Tehcnical Analysis of FRT Strategy	30 days	Wed 4/26/17	Tue 6/6/17																																								
26	Task 4: Siting Study Report	40 days	Wed 7/19/17	Tue 9/12/17																																								
27	4.1 Draft AWTP Preliminary Siting Study Report	20 days	Wed 7/19/17	Tue 8/15/17																																								
28	4.2 Final AWTP Preliminary Siting Study Report	10 days	Wed 8/30/17	Tue 9/12/17																																								
29	Optional Task O-4: Stakeholder Workshop	0 days	Wed 7/19/17	Wed 7/19/17																																								
31	Task 5: JPA Board Meetings	24 days	Tue 7/4/17	Mon 8/7/17																																								
32	5.1 Board Meeting No. 1	0 days	Tue 7/4/17	Tue 7/4/17																																								
33	5.2 Board Meeting No. 2	0 days	Mon 8/7/17	Mon 8/7/17																																								
34	Task 6: Project Management	150 days	Mon 2/6/17	Fri 9/1/17																																								
35	6.1 Project Administration	150 days	Mon 2/6/17	Fri 9/1/17																																								
36	6.2 QA/QC	150 days	Mon 2/6/17	Fri 9/1/17																																								
37	6.3 Biweekly progress calls	114 days	Tue 3/7/17	Mon 8/14/17																																								

SECTION FOUR

PROJECT TEAM



PROPOSAL FOR

ADVANCED WATER TREATMENT PLANT PRELIMINARY SITING STUDY

SECTION FOUR

PROJECT TEAM

The following organization chart outlines the RMC/Woodard & Curran team. Our proposed project manager, Brian Dietrick, is an accessible senior staff member who will manage this project with vigor and efficiency, tapping into specialized expertise within RMC and our subconsultant partners to support specific tasks. He will serve as the JPA's primary contact and has led integrated regional water management plans, recycled water master plans, and salt and nutrient management plans. Brian has also had extensive experience with alternatives analyses of various types; and he led the effort to develop LVMWD's Recycled Water Seasonal Storage Feasibility Study in 2012. Tom Richardson is our proposed principal-in-charge and has led AWTP siting studies for LADWP, SCVWD, and the City of San Diego. Tom will provide QA/QC for the RMC/Woodard & Curran team and ensure that the appropriate resources are applied to the project. With 32 years of experience, Tom is a nationally-recognized leader in water recycling and he has managed several large, complex projects demanding the integration of institutional, regulatory, environmental, and funding strategies, particularly for surface water augmentation (SWA) projects.

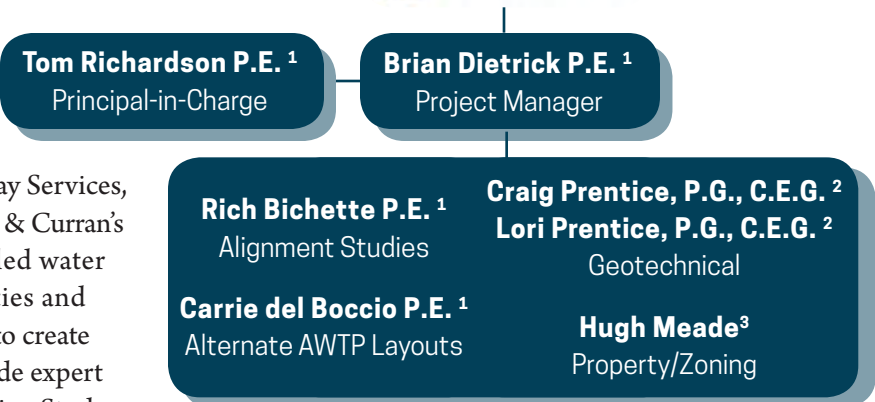
Team Subconsultants

In addition to the staff resources within RMC/Woodard & Curran, our team is enhanced by including two specialty subconsultants selected for their specific expertise in geotechnical engineering (Oakridge Geoscience, Inc.) and property/zoning (Associated Right of Way Services, Inc.). We have integrated RMC/Woodard & Curran's proven project management and recycled water planning skills with the technical abilities and engineering expertise of these two firms to create a dedicated, focused team who will provide expert guidance to the JPA in developing the Siting Study.

Oakridge Geoscience, Inc. (OGI)

OGI is incorporated in California as an 'S' Corporation.

The company provides geotechnical engineering services, including siting studies, and construction materials testing for public works infrastructure projects in southern and central California. Project experience includes water and wastewater storage tanks and reservoirs, dams, conveyance pipelines and treatment facilities, transportation projects including roadways, pavements, and bridges, construction materials testing, groundwater services, and third-party review services. The firm has been certified by the State of California (Caltrans and Small Business Administration) as a Disadvantaged Business Enterprise (DBE) for federal projects, a State Women-Owned Business Enterprise (SWBE), and a Small Business Enterprise (SBE) as described in Caltrans Local Assistance Procedures Manual Section 10.



Project Team:

1. RMC, A Woodard & Curran Company
2. Oakridge Geosciences, Inc.
3. Associated Right of Way Services, Inc.

PROJECT TEAM

Associated Right of Way Services, Inc. (AR/WS)

Associated Right of Way Services, Inc. (AR/WS) provides real estate and right of way consulting for federal, state, and locally funded public projects. Since 1989, AR/WS has successfully completed hundreds of projects with local public, state, and federal agencies, special districts, transportation authorities, and engineering firms. AR/WS has worked with RMC on numerous projects including the Santa Clara Valley Water District's Lower Silver Creek, and Coyote Watershed Program; as well as engineering during construction services for the City of Novato's Wastewater Treatment Plant upgrade.

The background and expertise of our team members includes:

- Unparalleled expertise in recycled water planning. Based on our experience with 130 recycled water projects State-wide, we can offer forward-thinking solutions for the Siting Study, particularly with non-traditional uses of recycled water.
- Familiarity with current Las Virgenes MWD systems and local setting. We will not have to spend time getting up to speed on your system or local issues and can start working on the Siting Study right away.
- Community stakeholder outreach/facilitation ability. Our strength in effectively crafting, implementing, and integrating extensive stakeholder and public outreach programs will help to develop a plan to achieve broad-based support for the Siting Study.
- A track record of providing cost-effective, implementable solutions. We are skilled at identifying potential obstacles to project implementation and finding ways to overcome them.

“RMC’s key staff members have consistently demonstrated superior organizational and project management skills. Their knowledge and ability to work with our diverse stakeholder group is unsurpassed.”

– Toby Roy, Water Resources Manager, San Diego County Water Authority

Relevant experience summaries for each team member are provided on the following pages. Complete resumes with details have been appended, as well as proof of professional registration for each.

TEAM MEMBER QUALIFICATIONS

Brian Dietrick, P.E. | Project Manager



Registration: Professional Civil Engineer, CA

Brian is a civil engineer with 25 years of experience in facilities planning and design for recycled water, wastewater, and water projects, many of which included detailed alternatives analyses. He has experience in technical planning for integrated regional water management plans, urban water management plans, environmental impact and regulatory compliance reports, collection systems, distribution systems, and groundwater recharge facilities. He is also experienced in funding, public outreach, cost estimating, and industrial waste discharge. Brian previously worked for the Los Angeles County Sanitation Districts and was involved with the planning, design, and permitting of seasonal storage reservoirs for water reclamation facilities in Palmdale and Lancaster. He also assisted LVMWD with a feasibility study for a recycled water seasonal storage reservoir within the service area.

PROJECT TEAM

Brian's Relevant Project Experience:

- Led preparation of a study that analyzed a recycled water seasonal storage project, including expansions of the existing conveyance system and customer base outside the Las Virgenes service area for LVMWD.
- Served as technical task lead on Calero Reservoir SWA analysis, part of overall effort to identify pathways to maximize recycling at the San Jose/Santa Clara Regional Wastewater Facility (up to 45,000 AFY) through non-potable and potable reuse pathways; and planning of reservoir augmentation using recycled water.
- Led a joint effort among the Water Replenishment District of Southern California, Los Angeles County Sanitation Districts, and the Upper San Gabriel Valley Municipal Water District, analyzing groundwater recharge supply and facility options, and various project alternatives to offset the use of imported replenishment water (Groundwater Reliability Improvement Program).
- Managed a feasibility study for the Los Angeles Department of Water and Power to investigate the potential for direct potable reuse at the Silverlake Reservoir Complex near downtown Los Angeles; the study examined the use of recycled water from the Los Angeles-Glendale Water Reclamation Plant for other uses as well, including non-potable reuse. The study also included preliminary siting of an AWPT facility near the reservoir.
- Served as deputy project manager for development of a comprehensive and cutting-edge recycled water planning effort for Los Angeles Department of Water and Power, including the Long-Term Concepts Report which included an alternatives analysis for direct potable reuse concepts and intertie opportunities with the LVMWD.
- Project manager for development of a recycled water strategic and master plan to set the near- and long-term course for recycled water use for Eastern Municipal Water District. The plan considers the relative merits of various facility, policy, and phasing options to achieve the benefits of different end uses.

Tom Richardson, P.E. | Principal-in-Charge



Registration: Professional Civil Engineer, CA

Tom specializes in the planning and design of recycled water, wastewater, and domestic water systems. He has 32 years of experience and is a recognized national leader in potable reuse, including groundwater replenishment, surface water augmentation, and direct potable applications. He is currently serving as chair of the WateReuse Association National Potable Reuse Committee and is a member of California's Direct Potable Reuse Committee. Tom has been active in California's most cutting-edge potable reuse projects (i.e., Orange County, San Diego, Los Angeles, and San Jose).

Tom's Relevant Project Experience:

- Led development of the Los Angeles Recycled Water Master Plan – including separate planning efforts in the areas of: Indirect Potable Reuse, Nonpotable Reuse, Satellite Treatment, System Reliability, and Long-Term Recycling Vision. The Plan included potential intertie concepts with the LVMWD.
- Managed overall demonstration phase of the City of San Diego's reservoir augmentation project with emphasis on regulatory approval, outreach, and owner representative on the design and construction of a 1 mgd advanced water treatment facility.
- Facilitating and managing effort among wastewater agency/water wholesaler/water retailers to identify pathways to maximize recycling at the San Jose/Santa Clara Regional Wastewater Facility (up to 45,000 AFY) through non-potable and potable reuse pathways.

PROJECT TEAM

Rich Bichette, P.E. | Alignment Studies



Registration: Professional Civil Engineer, CA

Rich has 17 years of experience in facility planning, design and construction management of potable and recycled water distribution, stormwater collection, wastewater collection and treatment, site development, and pumping systems design. He has led and provided technical planning, design, and operations support for over 15 water and recycled water projects in California.

Rich's Relevant Project Experience:

- Led preliminary design and CEQA (MND) for a project to deliver recycled water from the LVMWD Tapia Water Reclamation Plant to customers within the City of Los Angeles. Project consisted of approximately 5 miles of 24-inch diameter pipeline. Work included an alignment evaluation, hydraulic analysis, preliminary design drawings and report, and preparation of a CEQA MND.
- Project manager for development of a preliminary design report and preparation of plans, specifications and cost estimates for approximately 24,000 linear feet of 8-inch through 16-inch diameter recycled water pipeline to deliver recycled water to Burbank customers for irrigation and industrial use and to provide two interconnections with the LADWP recycled water system.
- Project manager responsible for preparing a feasibility study for the City of Pasadena's recycled water system to deliver water from Los Angeles-Glendale WRP to Pasadena; developed preliminary design and currently completing final design (at 90% completion) of Phase 1 of the system; CEQA/NEPA EIR/EA preparation; assistance with grants and loans; customer coordination and retrofit design; and permitting.
- Project manager for the development of a preliminary design report and preparation of plans, specifications and cost estimate for approximately 16,000 linear feet of recycled water pipeline in the City of Burbank, including an interconnection to serve customers within the LADWP service area.
- Project manager for the development of a Preliminary Design Report, CEQA MND, and final design plans, specifications and estimate (for Phase I) for a recycled water system extension to deliver approximately 6,300 AFY of recycled water to agriculture and landscape irrigation customers in eastern Escondido.
- As lead project engineer, led the development of a predesign report, pre-purchase bid package for pipes and valves, and preparation of plans and specifications for approximately two miles of 36-inch diameter recycled water pipeline for Inland Empire Utilities Agency.

Carrie Del Boccio, P.E. | Alternate Layouts



Registration: Professional Civil Engineer, CA

Carrie brings 11 years of experience with recycled water planning, infrastructure and treatment design. She has prepared several recycled water feasibility studies, facilities plans, and recent potable reuse studies for California clients.

PROJECT TEAM

Carrie's Relevant Project Experience:

- Leading the team providing preliminary engineering services for three AWT facilities for the Santa Clara Valley Water District Expedited Purified Water Program, including treatment technology alternatives and facilities siting evaluations, source water quality analysis, Class 4 cost estimates, and facilities plans.
- For the Regional San Project Programmatic Feasibility Study, performed detailed market assessment and water supply analysis, identified project facilities including recycled water recharge facilities into the local groundwater basin, and determined most cost-effective method of delivering recycled water. Carrie was responsible for legal and institutional requirements, and overall project schedule and budget controls.
- For the Del Puerto, North Valley Regional Recycled Water Project, first served as project engineer that built upon the feasibility study work that evaluated pipeline and river conveyance alternatives, including use of the San Joaquin River and the Delta Mendota Canal as conveyance alternatives. For Phase 2, Carrie completed a flow analysis for the San Joaquin River, regulatory, legal and institutional requirements, as well as outreach to stakeholders, and funding opportunities. Carrie was project manager for Phase 3 of the project that focused on completing a joint EIR/EIS, developing conceptual level engineering, continued NPDES permitting, application for recycled water rights, local and elected officials outreach, and funding support.
- For the City of Hayward Recycled Water Feasibility Study and Facility Plan, developed estimates for potential recycled water demand based on customer water usage, reviewed water quality data to identify potential fatal flaws, developed project alternatives including generating GIS layouts of proposed facilities and performing preliminary cost estimates for the Study. Developed the facilities, including a 6 mgd tertiary treatment plant at the facility plan level, developed and implemented a funding strategy; and prepared for implementation.

Craig Prentice, P.G., C.E.G. | Geotechnical Engineering



Registration: Professional Geologist, CA; Certified Engineering Geologist, CA; American Concrete Institute Field Testing Technician - Grade 1 #01364795; Current

Craig has 29 years of experience managing geologic and geotechnical projects including preliminary desktop studies, design studies, and construction services. His background includes geologic/geotechnical site characterization; seismic hazard evaluations including liquefaction potential, potential for strong ground shaking, fault rupture potential; fault evaluations; landslide characterization, evaluation, and stabilization; geologic evaluations; groundwater well installation and logging; and geotechnical studies for pipelines, buildings, roadways, and bridge foundations, reservoirs/dams, water and wastewater treatment facilities.

Craig's Relevant Project Experience:

- Project manager for geotechnical study including pavement coring/drill holes, laboratory testing, and geotechnical evaluation for 7,000 feet of water pipeline replacement and two lane-miles of pavement replacement. Evaluation included use of cold in-place recycling as well as conventional paving of heavily traveled Harvard Boulevard in Santa Paula.
- Project manager for geotechnical study for an 1,800-foot long, 12-inch diameter HDPE pipeline near the San Gabriel River in Pico Rivera for Water Replenishment District of Southern California. Provided field exploration, laboratory testing, geotechnical evaluation, and design parameters for the pipeline design and installation and pavement design for redesign of road ways and intersections impacted during construction.

PROJECT TEAM

Lori Prentice, P.G., C.E.G. | Geotechnical Engineering



Registration: Professional Geologist, CA; Certified Engineering Geologist, CA; California Division of Occupational Safety and Health (DOSH) 40-Hour Health and Safety Training for Hazardous Waste Sites; Current 8-Hour DOSH Refresher Course

Lori is principal engineering geologist and president of OGI and her 26 years of experience includes geotechnical site characterization; seismic hazard evaluations, including liquefaction potential, potential for strong ground shaking, fault rupture potential; fault evaluations, including trenching and mapping; landslide characterization, evaluation, and stabilization; geologic evaluations; groundwater well installation and logging; and geotechnical studies for pipelines, building and bridge foundations, reservoirs/dams, water and wastewater treatment facilities.

Lori's Relevant Project Experience:

- Geotechnical study for an 1,800-foot long, 12-inch diameter HDPE pipeline near the San Gabriel River in Pico Rivera for Water Replenishment District of Southern California.
- Geotechnical study for a 225-foot-long, 42-inch diameter welded steel casing pipe and waterline under US101 in Camarillo, CA using trenchless construction methods for Camrosa Water District.
- Third party geotechnical review, evaluation, and consultation services, including geotechnical input associated with tank construction, tank foundation conditions, site grading, slope stability of graded and natural slopes, and pipeline construction on the relatively steep access road for Ventura County Public Works, Water & Sanitation Department.

Hugh Meade | Property/Zoning



Hugh “Bruz” Meade is a right of way consultant who brings diverse and broad real estate skills to the team. He provides right of way and real estate acquisition services, contract and document preparation, client communication, escrow monitoring and title reviews, right of way cost estimates and related services for public agency clients. Hugh also works closely with public utility clients, providing property research, investigation, and the acquisition of permanent and temporary construction easements. His work is performed in conformance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, Housing and Community Development Department, Caltrans standards, and state and federal guidelines.

Hugh's Relevant Project Experience:

- Currently investigating potential well sites for San Francisco Public Utilities Commission's (SFPUC) Regional Groundwater Storage and Recovery project. Hugh will coordinate closely with SFPUC staff on site selections as well as the solicitation of property owners when requested.
- Conducted thorough investigations of potential sites for electrical substations in the Dogpatch, Hunters Point and Brisbane areas for the SFPUC Bay Corridor Transmission and Distribution project.
- Provided right of way acquisition services to the California High-Speed Rail Authority on a live-work industrial property. Hugh acquired the parcel in Wasco through a negotiated right of way contract.
- Since 2015, provided general consulting and support assistance to SFPUC for their Encroachment Program. Works closely with SFPUC staff and notifies property owner of encroachments and the need to remove them in a timely fashion.

SECTION FIVE

PROJECT EXPERIENCE AND REFERENCES



PROPOSAL FOR

ADVANCED WATER TREATMENT PLANT PRELIMINARY SITING STUDY

SECTION FIVE

PROJECT EXPERIENCE AND REFERENCES

Our team has performed similar AWTP siting studies, providing a comprehensive understanding of associated issues and trade-offs. References for recently completed projects of similar scope, including contact person and telephone number are included below and on the following pages.

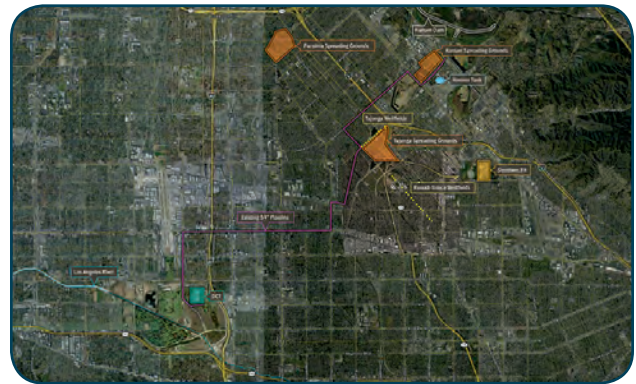
Groundwater Replenishment Facilities Planning | AWTP Siting Analysis, City of Los Angeles Department of Water and Power

As part of the City of Los Angeles' Recycled Water Master Planning project, RMC managed facilities planning for the City's San Fernando Valley Groundwater Replenishment project. A key initial step in that facilities planning initiative was an AWTP siting study. This study included an initial identification of roughly two-dozen candidate AWPF sites and two screening steps to identify two final candidate siting areas, one adjacent to the Tillman Water Reclamation Plant and the other within LADWP's Valley Generating Station site. Optional locations within each of these siting areas were further evaluated before a decision to site the AWTP at Tillman WRP was finalized. An array of criteria was used to conduct candidate site screening and the criteria were grouped into operational, cost, and permitting categories.

Key observations from this work included:

- Starting with a wide array of initial candidate sites enabled the site selection process to be defensible during the public outreach and environmental permitting phases
- Institutional preferences can outweigh technical criteria in the ultimate siting decision
- Decisions on AWTP ownership and operation need to be addressed concurrent with AWTP siting

Client Reference: Paul Liu, LADWP, 213.367.3419



Expedited Purified Water Program, Preliminary Engineering Santa Clara Valley Water District (SCVWD)

RMC has been supporting the Santa Clara Valley Water District in its regional potable reuse initiative since 2012. Preliminary studies conducted by RMC identified up to 45,000 AFY of potable reuse potential and concluded that beyond a baseline amount of non-potable reuse, potable reuse would best achieve the region's long term recycled water goals. RMC conducted a preliminary Potable Reuse assessment to refine the components of the program, and is currently conducting Preliminary Engineering Services covering an array of AWTP, purified water conveyance, and potable reuse receptors (percolation ponds, injection wells, Calero Reservoir, and raw water aqueducts). In addition, the preliminary engineering will support environmental certification, regulatory permitting, and procurement of project execution (e.g., design-build) services.

PROJECT EXPERIENCE AND REFERNECES

Groundwater Reliability Improvement Program Water Replenishment District of Southern California (WRD)

RMC conducted an alternatives analysis to develop projects that will offset the need for imported replenishment water used in the Central and Main San Gabriel Basins. RMC completed a review of existing documents and regulations, compiled an exhaustive list of supply and facility project options, and developed alternatives using various combinations of those options. The alternatives were developed to provide a more reliable source of replenishment water for the groundwater basins. RMC's high level of understanding of the key recycled water issues, players, and projects in the Central Basin area were an asset for WRD.

Client Reference: Jim McDavid, Senior Water Resources Engineer, WRD of Southern California, 562.275.4258





National Experience. Local Focus.

January 4, 2017

David R. Lippman, P.E.
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302

RE: Advanced Water Treatment Plant Preliminary Siting Study – Costs and Rate Schedule

Dear Mr. Lippman:

The envelope contains RMC's cost proposal for the above-referenced project. All proposed rate schedules are based on our standard 2017 rates included herein.

If selected, RMC would like to discuss your expectations for the project in greater detail and refine the cost proposal, as needed.

Should you have any questions regarding our proposed cost, please contact me at 213-223-9479 or bdietrick@woodardcurran.com.

Sincerely,

Brian Dietrick, P.E.
Project Manager



**Las Virgenes Municipal Water District
LVMWD Siting Study**

Fee Estimate

Tasks	Labor						Outside Services				ODCs		Total Fee		
	Principal Manager	Project Manager	Alignment Studies	AWTP Layouts	PE	Admin.	Total Hours	Total Labor Costs (1)	OGI	ARWS	Subtotal	Sub Consultant Total Cost (2)		ODCs	Total ODCs (3)
Task 1: Initial Identification and Kickoff Meeting															
1.1 Prepare Information Request	1	2			2		5	\$1,146			\$0	\$0	\$0	\$1,146	
1.2 Develop Preliminary Methodology	2	12	4		8		26	\$6,092	\$3,940	\$9,955	\$13,895	\$15,285	\$0	\$21,377	
1.3 Workshop 1 - Project Kickoff Meeting	4	4			8		16	\$3,520			\$0	\$0	\$500	\$4,070	
1.4 Prepare Draft Initial Identification TM	4	4	2		40		46	\$7,676			\$0	\$0	\$0	\$7,676	
1.5 Prepare Final Draft Initial Identification TM	2	2			16		18	\$2,964			\$0	\$0	\$0	\$2,964	
Subtotal Task 1:	7	24	6	0	74	0	111	\$21,398	\$3,940	\$9,955	\$13,895	\$15,285	\$500	\$37,233	
Task 2: Screening Process and Workshop 2															
2.1 Develop Detailed Screening Process	2	16	4		8		30	\$7,156	\$3,940	\$9,955	\$13,895	\$15,285	\$0	\$22,441	
2.2 Prepare Draft Screening Process TM	4	4	2		40		46	\$7,676			\$0	\$0	\$0	\$7,676	
2.3 Workshop 2 - Screening Process	4	4			8		16	\$3,520			\$0	\$0	\$100	\$3,630	
2.4 Prepare Final Draft Screening Process TM	6	26	6	0	72	0	110	\$21,316	\$3,940	\$9,955	\$13,895	\$15,285	\$100	\$36,711	
Subtotal Task 2:	12	40	12	0	128	0	162	\$39,168	\$7,880	\$29,910	\$39,085	\$45,855	\$100	\$87,148	
Task 3: Comparative Analysis and Workshop 3															
3.1 Develop Detailed Comparative Analysis Methodology	2	24	4		8		38	\$9,284	\$3,940	\$15,120	\$19,060	\$20,966	\$0	\$30,250	
3.2 Prepare Draft Comparative Analysis TM	4	8	2		40		50	\$8,740			\$0	\$0	\$0	\$8,740	
3.3 Workshop 3 - Comparative Analysis	4	4			8		16	\$3,520			\$0	\$0	\$100	\$3,630	
3.4 Prepare Final Draft Comparative Analysis TM	2	2			16		18	\$2,964			\$0	\$0	\$0	\$2,964	
Subtotal Task 3:	6	38	6	0	72	0	122	\$24,508	\$3,940	\$15,120	\$19,060	\$20,966	\$100	\$46,584	
Task 4: AWTP Preliminary Siting Study Report															
4.1 Draft AWTP Preliminary Siting Study Report	8	8			24		32	\$5,776			\$0	\$0	\$0	\$5,776	
4.2 Final AWTP Preliminary Siting Study Report	4	4			16		20	\$3,496			\$0	\$0	\$0	\$3,496	
Subtotal Task 4:	12	12	0	0	40	0	52	\$9,272	\$0	\$0	\$0	\$0	\$0	\$9,272	
Task 5: JPA Board Meetings															
5.1 Board Meeting No. 1	4	4			8		16	\$3,520			\$0	\$0	\$100	\$3,630	
5.2 Board Meeting No. 2	4	4			8		16	\$3,520			\$0	\$0	\$100	\$3,630	
Subtotal Task 5:	8	8	0	0	16	0	32	\$7,040	\$0	\$0	\$0	\$200	\$220	\$7,260	
Task 6: Project Management															
6.1 Project Administration	18	12			4		24	\$4,640			\$0	\$0	\$0	\$4,640	
6.2 QA/QC	18	12			8		30	\$5,580			\$0	\$0	\$0	\$5,580	
6.3 Biweekly Progress calls with JPA staff	18	24	0	0	4		46	\$3,192	\$0	\$0	\$0	\$0	\$0	\$3,192	
Subtotal Task 6:	45	32	0	0	278	8	481	\$99,945	\$11,820	\$35,030	\$46,850	\$51,536	\$900	\$149,472	
TOTAL without Optional Tasks															
OPTIONAL Task O-1															
O1.1 Technical Analysis of Alternate AWTP Layouts	2	4	0	12	24		42	\$8,176			\$0	\$0	\$0	\$8,176	
Subtotal Task O1:	2	4	0	12	24	0	42	\$8,176	\$0	\$0	\$0	\$0	\$0	\$8,176	
OPTIONAL Task O-2															
O2.1 Additional Meetings (3)	12	12	0	0	12		24	\$5,016			\$0	\$0	\$150	\$5,181	
Subtotal Task O2:	12	12	0	0	12	0	24	\$5,016	\$0	\$0	\$0	\$0	\$150	\$5,181	
OPTIONAL Task O-3															
O3.1 Technical Analysis of FRT Strategy	2	4	12	0	24		42	\$8,524			\$0	\$0	\$0	\$8,524	
Subtotal Task O3:	2	4	12	0	24	0	42	\$8,524	\$0	\$0	\$0	\$0	\$0	\$8,524	
OPTIONAL Task O-4															
O4.1 Workshop 4 - Stakeholder Workshop	4	4	0	0	8		16	\$3,520			\$0	\$0	\$100	\$3,630	
Subtotal Task O4:	4	4	0	0	8	0	16	\$3,520	\$0	\$0	\$0	\$0	\$100	\$3,630	
OPTIONAL Tasks TOTAL	8	24	12	12	68	0	124	\$25,236	\$0	\$0	\$0	\$250	\$275	\$25,511	
TOTAL with Optional Tasks	53	156	30	12	346	8	605	\$122,162	\$11,820	\$35,030	\$46,850	\$51,536	\$1,150	\$174,983	

1. The individual hourly rates include salary, overhead and profit.
 2. Subconsultants will be billed at actual cost plus 10%.
 3. Other direct costs (ODCs) such as reproduction, delivery, mileage (rates will be those allowed by current IRS guidelines), and travel expenses, will be billed at actual cost plus 10%.
 4. RMC reserves the right to adjust its hourly rate structure and ODC markup at the beginning of the calendar year for all ongoing contracts.



National Experience. Local Focus.

Labor Category	2017 Rate
Engineer 1 (E1) Scientist 1 (S1) Geologist 1 (G1) Planner 1 (P1) Technical Specialist 1 (TS1)	\$152
Engineer 2 (E2) Scientist 2 (S2) Geologist 2 (G2) Planner 2 (P2) Technical Specialist 2 (TS2)	\$178
Engineer 3 (E3) Scientist 3 (S3) Geologist 3 (G3) Planner 3 (P3) Technical Specialist 3 (TS3)	\$201
Project Engineer 1 (PE1) Project Scientist 1 (PS1) Project Geologist 1 (PG1) Project Planner 1 (PP1) Project Technical Specialist 1 (PTS1)	\$205
Project Engineer 2 (PE2) Project Scientist 2 (PS2) Project Geologist 2 (PG2) Project Planner 2 (PP2) Project Technical Specialist 2 (PTS2)	\$222
Project Manager 1 (PM1) Technical Manager 1 (TM1)	\$237
Project Manager 2 (PM2) Technical Manager 2 (TM2)	\$249
Senior Project Manager (SPM) Senior Technical Manager (STM)	\$266
Senior Technical Practice Leader (STPL) Service Line Leader (SLL)	\$295
National Practice Leader (NPL) Strategic Business Unit Leader (SBUL)	\$310
Software Engineer 1 (SE1)	\$136
Designer 1 (D1)	\$140
Designer 2 (D2)	\$150
Designer 3 (D3)	\$153
Senior Software Developer (SSD)	
Senior Designer (SD)	\$165
Project Assistant (PA)	\$105
Marketing Assistant (MA) Graphic Artist (GA)	\$113
Senior Accountant (SA) Billing Manager (BM)	\$125
Marketing Manager (MM) Graphics Manager (GM)	\$145

Note: The individual hourly rates include salary, overhead and profit. Other direct costs (ODCs) such as reproduction, delivery, mileage (as allowed by IRS guidelines), and travel expenses will be billed at actual cost plus 10%. Subconsultants will be billed as actual cost plus 10%. RMC, a Woodard and Curran Company, reserves the right to adjust its hourly rate structure at the beginning of each year for all ongoing contracts.

INFORMATION ONLY

February 6, 2017 JPA Board Meeting

TO: JPA Board of Directors

FROM: Resource Conservation & Public Outreach

Subject : Pure Water Project Las Virgenes-Triunfo: Draft Public Outreach Plan and Legislative Handout

SUMMARY:

In collaboration with staff, Katz & Associates developed the attached draft Public Outreach Plan for the Pure Water Project Las Virgenes-Triunfo. The purpose of the plan is to ensure that the JPA conveys timely, accurate and clear information on the program to local leaders, stakeholders and customers. The plan draws upon the expertise of Katz & Associates working on similar projects with other agencies, the results of one-on-one interviews conducted with community leaders in 2016, and the insights of staff with experience on previous successful public outreach efforts.

The overarching goal of the Public Outreach Plan is to raise awareness among JPA customers and stakeholders, including regulators, on the importance and benefits of the Pure Water Project Las Virgenes-Triunfo, and develop support for the program. The plan addresses the following major topics: outreach goal, communication objectives, strategies for success, anticipated challenges, opportunities, key messages, audiences and approach/activities.

Also attached is a handout for the Pure Water Project Las Virgenes-Triunfo to be used during meetings with elected officials and their staff in Washington D.C. and Sacramento. The document is designed to serve as a "leave-behind" as the JPA seeks support for grant and/or loan applications seeking funding for the program.

FISCAL IMPACT:

No

ITEM BUDGETED:

Yes

Prepared by: Jeff Reinhardt, Public Affairs and Communications Manager

ATTACHMENTS:

Draft Public Outreach Plan
Handout/Leave-Behind



PURE WATER PROJECT LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

Public Outreach Plan

Prepared by:

KATZ
& Associates

For:

Las Virgenes – Triunfo Joint Powers Authority

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INTRODUCTION AND BACKGROUND

The Las Virgenes – Triunfo Joint Powers Authority (JPA) is a partnership between Las Virgenes Municipal Water District (LVMWD) and Triunfo Sanitation District (TSD), established to cooperatively treat wastewater for these two bordering areas that share the Malibu Creek watershed. The JPA has been a pioneer in the development of recycled water as a renewable resource, operating the Tapia Water Reclamation Facility since 1965. All of the recycled water produced at the facility is used for irrigation during summer months; however, surplus recycled water must be discharged to Malibu Creek in winter months.

The JPA also has a goal of improving the health of the Malibu Creek Watershed. This has required a multi-pronged approach to address stringent USEPA water quality standards when recycled water must be discharged into the creek. However, compliance with standards has proven to be expensive and impactful to sewage treatment rates for customers, without fully protecting the creek or the species that live there. The JPA has expressed its commitment to creek stewardship, but with common sense solutions to water quality issues.

As part of a robust, 18-month stakeholder participation process, the JPA evaluated a number of options to beneficially use this “surplus” recycled water so that it will not need to be discharged into the creek. The top two options included indirect potable reuse using advanced purification followed by discharge to the Las Virgenes Reservoir, and repurposing the Los Angeles Department of Water and Power Encino Reservoir for recycled water storage.

With two alternatives identified, from July through September 2016, Katz & Associates conducted in-depth discussions with 15 JPA stakeholders – individuals who live and/or work within the LVMWD or TSD service areas and/or are involved in the communities served by the districts. The purpose of the interviews was to gauge awareness and perceptions about water, wastewater and recycled water, and JPA services, as well as to obtain feedback on maximizing the beneficial use of the region’s recycled water from TWRF. It was clear from the majority of participants that, should either alternative move forward, extensive community engagement and information sharing would be critical, and should the potable reuse project move forward, additional communication will be important to raise awareness and understanding about the water quality/safety and benefits of potable reuse.

Advanced Water Treatment Facility for Indirect Potable Reuse

On August 1, 2016, the JPA Board approved the indirect potable reuse project, which would create a local, reliable water supply for the region, as the preferred alternative. This new local source of water will reduce dependency on imported water, but will also effectively eliminate surplus recycled water discharged to the ocean through Malibu Creek.

While the science of water purification is solid, people are just now starting to accept and embrace the idea of using it to augment drinking water supplies. Great strides have resulted from necessity (for instance, drought), concerted water industry education efforts and positive experiences at other water agencies. However, questions and misunderstanding persist, and although it may be months or years before construction on the Pure Water Project would begin, it is important for the JPA to mount a

comprehensive education and information campaign now on behalf of the project. While the science is irrefutable, it is the emotion and lack of understanding about potable reuse that can delay and even defeat such projects. Getting the attention of busy residents in the service area to tell them about this high quality local water source will take a significant amount of time. Successful potable reuse projects such as Orange County Water District's Groundwater Replenishment System indicate that outreach must start long before a project is constructed for the best outcome in terms of public understanding and acceptance. The outreach activities identified in this plan allow the JPA to introduce the potable reuse concept in an assortment of venues in a variety of ways, and lay the groundwork for the opportunity of touring the advanced water purification facility after its construction to see the purity and safety of the product water first-hand.

PURPOSE

The purpose of this Public Outreach Plan is to ensure that the JPA conveys timely, accurate and clear program information to local leaders, stakeholders and residents. This plan includes strategies and tactics that will maximize public awareness and understanding of the project, and is a living, working document that will be reviewed and revised as the project and associated analyses proceed.

OUTREACH GOAL

The goal of this plan is to raise awareness and obtain support among JPA stakeholders, including regulators, about the importance and benefits of the Las Virgenes-Triunfo Pure Water Project and increase comfort with and support for its use.

COMMUNICATION OBJECTIVES

- Implement a public outreach program that transparently explains the Pure Water Project, the high quality and safety of the water it produces, and its benefits.
- Provide consistent and complete information to all stakeholders, including multicultural communities, so there are no surprises throughout the multi-phased development process.
- Foster understanding and acceptance of the science and advanced technology behind recycled water and indirect potable reuse.
- Minimize any confusion, opposition and discomfort with indirect potable reuse.
- Ensure consistency of information among all representatives and spokespersons.

STRATEGIES FOR SUCCESS

- **Program identity** – Make the Las Virgenes-Triunfo Pure Water Project a recognizable program throughout all JPA and individual agency communication vehicles.
- **Key messages** – Help focus communication efforts using understandable terms and cut through the information clutter.
- **Science** – Incorporate information about technology to address health and safety concerns

through clear articulation of advanced treatment steps, description of monitoring procedures, and facility tours.

- **Consistent, sustained and multifaceted communication tools** – Employ a variety of general and tailored materials and tools, in multiple formats and appropriate translations, to clearly communicate project history, purpose and other relevant information to an array of audiences.
- **Transparency** – Demonstrate transparency by discussing pertinent aspects of indirect potable reuse, such as water quality, cost, regulatory oversight, safety and environmental issues with all stakeholders.
- **Two-way communication** – Create an environment for open dialogue with key audiences.
- **Alignment with technical work** – Schedule outreach activities and informational materials to stay on track with technical preparation of reports, recommendations, and facilities design.
- **Visuals** – Use engaging graphics and visuals to communicate key messages and complex information about potable reuse.
- **Partnerships** – Team with civic, environmental, academic and other groups to raise awareness with diverse audiences about potable reuse and empower others to carry Pure Water Project messages and, potentially, develop support statements.
- **Varied levels of technical detail** – Provide a range of technical details about potable reuse from those appropriate to the layperson to more in-depth and technical information as needed for other audiences, and address varied information needs from simple to complex.
- **Media relations** – Strengthen relationships and provide up-to-date media outreach activities in a variety of formats including print, electronic and social media.
- **Rapid response** – Quickly address misinformation or information gaps that might arise about the Pure Water Project.
- **Evaluation and course correction** – Measure efforts, accomplishments and feedback, and adjust as needed to reflect the evolution of the project and program.
- **Experience** – Refer to successful projects elsewhere.

ANTICIPATED CHALLENGES

While the public is becoming more accepting of the idea of indirect potable reuse, situational and communication challenges exist. Below are several potential challenges that will probably be encountered along the way that could impact the program.

“Toilet to Tap”

The fact that purified water was once municipal wastewater continues to generate a “yuck” factor with some. The “toilet to tap” phrase has been used negatively in political campaigns, by the media, and by oppositional interests as “shorthand” to express opposition to potable reuse as being unsafe to drink or even hazardous to the public. Calling the project “toilet to tap” or using imagery of toilets as “shock” images can create a strong negative influence on the public and serve to stigmatize the program.

Water Quality Concerns

In recent years, the issue of pharmaceuticals present in wastewater has been a drinking water quality concern raised in the media and by members of the community. Emotional fears exist about the health effects of pharmaceuticals and other “unknown contaminants” in drinking water.

Lack of Public Trust

Research has shown there is a significant portion of the public that has a general mistrust or lack of confidence in government. This lack of trust can translate into a concern that a governmental agency is not capable of successfully operating such a high-tech, advanced program.

Technical Information

The water purification process involves many treatment steps of a very technical nature. The information will need to be communicated in clear and relatable terms.

Construction Route

The proposed project pipeline will travel through a highly urbanized area which has previously experienced and expressed concerns about LVMWD construction.

Different Population Groups

The program will need to address the communication preferences of each unique group. An additional element to consider is the fact that some multicultural groups may have direct negative experiences with water systems and water quality in other locations that may hinder support of potable reuse.

Cost Concerns and Personal Economic Impacts

A public concern over the cost and funding sources for a large-scale, multi-year program is an anticipated challenge with Pure Water Project Las Virgenes-Triunfo and must be addressed.

Media and Social Media Misinformation

The media, social media, blogs and online discussion boards can all be vehicles for misinformation about Pure Water Project Las Virgenes-Triunfo. Networks of followers and interested parties can increase negative publicity or opinions with astounding speed and volume. There are no checks and balances or accountability to ensure data, facts or claims are accurate.

Attitudinal vs. Behavioral Change

There is no behavioral change associated with Pure Water Project Las Virgenes-Triunfo other than people pledging their support. There is not a cause or specific issue to rally behind, such as asking someone to conserve water, not litter, etc. A call to action is often what triggers engagement for members of the public and that is not expressly present with this project.

OPPORTUNITIES

In addition to challenges that need to be addressed, there are many opportunities to aid in enhancing and building program understanding, momentum, visibility and support. Below are several key opportunities that can contribute to the success of the program.

Recycled Water Discharges to Malibu Creek

The JPA is committed to environmental stewardship and delivering cost effective projects and services to customers. For both reasons, substantially reducing or eliminating discharges to the Malibu Creek watershed is beneficial and possible through completion of this project.

Continuation of JPA's Cutting Edge Reputation

The JPA has been a pioneer in the development of recycled water as a renewable resource. Since 1965, the JPA has operated the Tapia Water Reclamation Facility (TWRP). The recycled water program is expansive and well received; the Pure Water Project is another opportunity to cement that innovative reputation.

Continuation and Expansion of Already Established Stakeholder Engagement

The JPA conducted an in-depth stakeholder engagement process with more than 25 agencies and interest groups represented to identify options to maximize use of recycled water. This is an informed, involved group that can and should continue to be engaged as the program and project move forward.

The "Green" Movement

Sustainability is a widely accepted and motivating concept. The environmental benefits and sustainable characteristics of Pure Water Project Las Virgenes-Triunfo can be emphasized, including energy savings compared to importing water, a low carbon footprint, the reuse of a scarce natural resource, and more. Leaders of local environmental groups are important potential allies who can provide support and confirmation of the environmental benefits to be achieved with Pure Water Project Las Virgenes-Triunfo.

Successful Southern California Potable Reuse Project

The Groundwater Replenishment System (GWRS), operated by the Orange County Water District, uses the same water purification process as that proposed for Pure Water Project Las Virgenes-Triunfo. The GWRS project opened in January 2008 and has received national and international recognition and strong public acceptance. The Orange County project is an excellent example of the technology at a publicly owned and operated advanced water treatment facility. Pure Water Project Las Virgenes-Triunfo can point to the GWRS's proven track record of treatment process safety and consistently high water quality, as well as take residents to Fountain Valley to tour the project and see the purity of the water produced for themselves.

Heightened Awareness about Drought

California has experienced its lowest rainfall in recorded history, and there is increasing attention on the dire drought conditions in California. The reliability of imported water supplies is also a significant concern, as is the rising costs for this water. Developing complementary messaging and partnering with the District's water conservation staff can provide a better understanding as to why the Pure Water Project Las Virgenes-Triunfo opportunity comes at such an important time for the region.

Positive Public Opinion

Recent surveys conducted by state agencies and other utilities indicate that more people are accepting of indirect potable reuse projects than in previous years.

Media Attention

Attracting positive media attention includes working more with science and environmental reporters and reaching out to more online publications, which offer the added benefit of a comments section where community members can post their opinions and feedback. Story pitches can also be accompanied by editorial briefings, interviews in a variety of formats, media advisories, and media tours.

Social Media

Social media provides an opportunity to increase program visibility, and supporters can be encouraged to share Pure Water Project Las Virgenes-Triunfo updates and information with their communities through it. Pure Water Project Las Virgenes-Triunfo's presence on Facebook, Twitter, YouTube, and other social media channels (Instagram, Vine, etc.) will continue to be an important communication channel to keep the program's progress top-of-mind for interested community members.

KEY MESSAGES

The following messages are recommended as the foundation of the Pure Water Project Message Plan:

- **Reliable and Environmentally Sustainable:** The project will address two major challenges facing the community: it will improve local water supply reliability and drought resilience, and effectively eliminate discharges to Malibu Creek, a current practice that is not sustainable.
- **Proven Technology to Produce Safe Water:** Advanced water treatment using the latest, proven technology will produce the purest, highest quality water that can be blended with existing sources and placed in the drinking water system.
- **Affordable and Cost-Effective:** The new supply of water will be economical, with costs competitive to those projected for imported water supplies over the long term.

This plan will be expanded to include key messages for other issues related to the project, such as the environment, cost, rates, demonstration and timing. The Pure Water Message Plan will be a living document for the use by spokespersons and in development of materials, and will be updated as opportunities and challenges require.

AUDIENCES

Through its previous stakeholder engagement process, one-on-one discussions, and ongoing capabilities for information signup through the LVMWD website, the JPA has already prepared a solid stakeholder database. Using the audience category list included below, the stakeholder database will be broadened even more to incorporate those not previously engaged. This database will include email addresses whenever possible, but may also include purchased direct mail lists. A broad and comprehensive database will be foundational to ensuring consistent, sustained and targeted communication based on stakeholder interests and information requests. The following lists the wide variety of stakeholders that will be reached with a comprehensive outreach program:

- Internal (board and staff, as well as their families)
- Agency ratepayers
- Government and elected officials (local cities, county, state and national)
- Governmental and regulatory agencies (regional, state and national)
- Other water purveyors and industry groups/associations
- Recycled water customers
- School boards and parent-teacher groups
- Landscaping, gardening and related industries
- Business organizations
- Civic groups and service organizations
- Multicultural leaders and groups
- Environmental organizations and other NGOs
- Medical, public health and water quality experts
- Academia/education
- Media
- Homeowner Associations

APPROACH/ACTIVITIES

The outreach activities identified in this Public Outreach Plan are organized into the following categories:

- Data Collection and Research
- Informational Materials and Branding
- Stakeholder Engagement
- Media and Social Media
- Partnerships
- Tracking and Measurement

All approaches/activities listed are recommendations. As the Pure Water Project evolves, the JPA should revisit the plan and recommendations, and appropriately implement as resources allow. Many recommendations are focused on the nearer term as results of analyses solidify, a demonstration project moves forward, outreach increases, and financing options are explored.

Data Collection and Research

- **In-depth Interviews:** The JPA has already undertaken in-depth interviews to more fully grasp perceptions about water, water reliability and water reuse. As the program and project evolve,

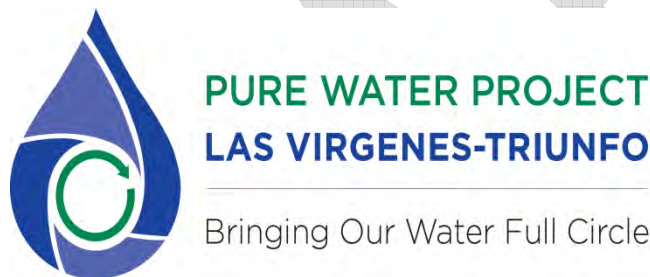
the JPA should continue to schedule these one-on-one informal discussions to gauge opinions and perceptions, and to identify potentially emerging issues.

- **Online Secondary Research:** Potable reuse projects continue to evolve throughout the world, and particularly in the western United States. The JPA should conduct information research, such as article searches and analysis, to provide monthly updates and to stay current on emerging issues.
- **Formalized Survey(s):** As project plans proceed and as new information becomes available, the JPA should conduct a baseline survey of people within the JPA service area(s) to identify awareness level and interest areas. If conducted early enough, this will create a solid foundation and can be followed by regularly-scheduled inquiries to measure change and inform future outreach and communication efforts.

Informational Materials and Branding

Branding:

All materials and communication going forward will include the approved logo and theme line to establish a recognized identity for this regional water supply sustainability and environmental protection effort.



Informational Materials:

The JPA has prepared several collateral pieces that will be reviewed and updated to align with the project branding, new key messages, and up-to-date technical information. Existing key documents include:

- Malibu Creek Watershed Beneficial Uses
- “One Page Summary”
- Stewardship Brochure

Informational materials moving forward will be tailored to different audiences, address specific concerns and needs, be written for a varying knowledge base, and convey important messages in a consistent manner. All materials will also incorporate descriptions of the science of potable reuse in easy-to-understand language. Materials and communication tools will be reviewed for cultural sensitivity and appropriateness for different age groups. Materials will be distributed in a variety of ways and include both electronic and non-electronic outlets to reach multiple audiences. Initial recommended materials include:

- Fact Sheets (targeted to different audience information needs)

- Key Message Graphics/Infographics
- Frequently Asked Questions (FAQ)
- Presentation Template (with modules for lay to technical audiences)
- Quick Facts Card (for use by field personnel and at presentations)
- Animated Video
- Material Translated into Spanish
- Newsletter/E-newsletter

Website Presence

Currently, JPA information is included as part of the material on LVMWD and TSD websites. As part of the branding initiative, and to establish identifiable and easily accessible information resources, the JPA should establish a separate URL, accessible from both existing sites. Audiences should be able to access the site directly, or via the existing agency websites. The site will:

- Prominently feature an information link on the home pages of both districts.
- Use the new Pure Water Project logo as an icon linking to the project landing page.
- Create sub-pages that support key topics with concise content in easily-understood, non-technical language.

The website should also house updated fact sheets and FAQ sheets and other relevant Pure Water Project documents, supported with appropriate graphics. The website should offer an opportunity for visitors to submit questions or comments on the project that can be answered in subsequent public communication as well.

Stakeholder Engagement

Key Stakeholder Briefings

A JPA priority should be to conduct immediate and then periodic individual briefings with elected officials and previously identified representatives of stakeholder groups, as well as with participants of the JPA's stakeholder engagement efforts to date. The purpose will be to ensure elected officials and others in the service area clearly understand what the Pure Water Project is, are aware of the purity of the product water, and have a pathway to make sure their questions are answered. This effort will include development of a briefing presentation for JPA spokespersons to use. A full round of such briefings should be completed in the first quarter of 2017.

Project Liaison

One request that was repeated by several stakeholders was to have a liaison who could address all manner of recycled water questions. The liaison will act as a customer representative, guide to JPA services, on-site resource for customers, information presenter and more. This individual will need to be knowledgeable about recycled water uses; impacts of recycled water on buildings and equipment; recycled water quality and any fluctuations in quality ahead of time so customers can adapt; and potable reuse background, project examples and where one can go to see an operating potable reuse project and taste the water.

One-on-one Meetings

One-on-one meetings are crucial for engaging stakeholders and keeping them informed. The goals of these meetings are as follows:

- Build awareness, trust and confidence in the potable reuse technology processes among community leaders and local elected officials, and inform them of water supply demands and shortages, as well as how potable reuse can meet demands while being responsive to concerns related to project implementation.
- Provide potable reuse information to key business, environmental and community leaders to ensure they are informed about the safety and reliability of this water source.

Speakers Bureau

Presentations about the Pure Water Project have been opportunistic to this point. Now, the JPA will launch a proactive, targeted and broad-based speakers bureau effort throughout the region served by the JPA agencies, as well as to industry and professional associations and organizations. Project presentations will be targeted to begin in the first part of the year of 2017 as part of laying the foundation for potable reuse understanding and awareness. This will include civic and business groups as well as elected bodies that might share an interest in staying current with project developments. Contact with groups can begin in January to schedule presentations through June.

- **Presentation:** Based on the updated message plan and materials, a PowerPoint presentation will be prepared and will offer, in approximately 15 minutes, a concise explanation of the Pure Water Project, including purpose and need, technical details (in lay language), cost and timelines. The will include graphics and animation to visually describe the potential project. Also ensure that indirect potable reuse content is part of all presentations by the District's speakers bureau.
- **Spokespersons:** When naming spokespersons, ensure all speakers are effective presenters and confirm that all speakers will have an opportunity to practice presentations and use consistent messages. JPA spokespersons should be identified and should participate in a presentation workshop that will include presentation review and FAQ practice. Spokespersons should include both board and staff as well as, potentially, third-party spokespersons.
- **Scheduling:** Presentation scheduling will be proactive, broad and organized. The plan will include calls and inquiries to targeted groups regarding the opportunity to present at an upcoming meeting, logistics coordination, and spokesperson preparation and support, as well as collection of questions received, coordination of timely responses to questions or requests for additional information, and follow up on evaluation forms. It can also include a partnership-building effort that, for instance, provides a Pure Water emblem that can be displayed on the websites of organizations that support the project. Reach out broadly to stakeholders in order to ensure that speakers bureau presentations reach a wide variety of groups and multicultural audiences.
- **Publicity:** The speakers bureau availability will be publicized in a variety of ways to a broad audience. A promotional flier can be emailed to key stakeholders and community organizations and distributed at community events, information can be posted on the website, elected officials can be encouraged to offer Pure Water presentations to their constituent groups, and

more.

- **Support cards:** Speakers bureau presentations provide a timely opportunity to collect names of program supporters and to allow audience members to request additional program information. Each speaker will have a supply of support cards to distribute as appropriate following presentations.
- **Speaker tracking form:** Each speaker or support staff will complete a tracking form immediately following each presentation. This provides key information about the presentation, any needed follow up, audience size, audience questions, and commentary. Information will be included in the ongoing communication metrics assessment.
- **Presentation evaluation form:** A presentation evaluation form will be distributed to the group leader or program chairperson immediately following the presentation. Staff will conduct follow up to obtain the completed form, if needed. The presentation will be revised, as needed, based on feedback and project progress.

Events and Forums

Existing community events within the JPA service area are good examples of “grass roots tactics that reach ratepayers directly.” LVMWD does such events and staffs booths all year round. For 2017, special information and promotions to support event participation will occur during the first half of the year. In some cases, sponsorship of certain events may be useful. A detailed plan will include research of event opportunities, specific recommendations and logistics for JPA inclusion that will likely require the continued participation of District staff.

Media and Social Media

- Enhance traditional and social media outreach.
- Provide media with continuously stimulating and newsworthy content related to water supply diversity and indirect potable reuse.
- Cultivate working relationships with local/regional media representatives, bloggers and specialty reporters to facilitate accurate and balanced media coverage.
- Develop short video presentations featuring indirect potable reuse descriptions and benefits that can be shared with the media and stakeholders.
- Engage multicultural publications and media outlets that reach a diverse readership.
- Increase the presence, audience and level of engagement on social media.
- Establish and implement a rapid response program to address misinformation that might arise about potable reuse.

Partnerships

One way to increase the reach of the Pure Water Project Las Virgenes-Triunfo is to partner or collaborate with other governmental agencies, community and stakeholder groups, schools at various educational levels, and others. This may take the form of an exhibit booth at an event or festival, developing educational curriculum, sponsoring a forum with a focus on a topic such as the environment or health, or placing an article in a publication.

- Research opportunities to provide articles and other content for stakeholder groups and partnering agencies' publications, websites and newsletters. Produce template articles of varying length to adapt to needs of other groups or agencies. Participate in events or activities sponsored by partnering agencies, such as key meetings or events, to increase visibility of the program. When possible, engage the audience with interactive activities.

Tracking and Measurement

The effectiveness of the communication program will be measured by a variety of performance indicators. Track progress to identify program successes as well as opportunities for improvement. The outreach program should remain flexible to allow for change as program elements are evaluated or new elements are initiated. Some of the methods that can be used to measure effectiveness include:

- Level of social media engagement using online analytic tools
- Number of news/media mentions
- Number of support cards collected/number of letters or resolutions of support gathered
- Number of meetings held with stakeholders
- Website traffic and e-update open rate and sharing analytics
- Comprehensive records of speakers bureau activities, including number of attendees and feedback
- Number of event participation and the audience reach for each event
- Number of conferences and industry forums participated in
- Number of tours conducted and volume of attendees

Timeline

A schedule of activities to launch the Pure Water Project Public Outreach Plan for the first and second quarters of 2017 is provided on the following page. An update of the Public Outreach Plan timeline, driven by project needs and developments, will be necessary from time to time.

Pure Water Project Public Outreach Plan Launch Timeline



- Public Outreach plan, with media outreach outline, completed
- Messages/speaking points completed
- Fact sheet(s) updated and FAQ completed
- Initial infographics completed
- Initial elected official updates scheduled/completed
- Stakeholder list updated; thank yous and updates to interviewees and stakeholder group participants
- Updated website planned/launched
- Dedicated recycled water POC discussed
- First metrics and dashboards identified
- Speakers bureau presentations and collateral materials finalized; training workshops conducted
- Initial requests issued for speakers bureau priority groups
- Initial support letters and resolutions requested
- Elected official/agency briefings continued; project updates provided to stakeholders
- Tour opportunities identified and scheduled
- Electronic partner badge created
- Analysis and prep for spring events and forums conducted
- Template articles identified for external publications
- Broader media plan completed
- Metrics/dashboards updated

- Continued calls/emails to priority speakers bureau groups
- Technical team meeting conducted for outreach info
- Demonstration facility recommendations developed
- Materials/talking points updated based on feedback
- Elected official/agency briefings continued; project updates provided to stakeholders
- Program video initiated
- Template articles prepared and submitted
- Community meeting(s)/events scheduled if needed
- Partnerships with academia analyzed
- Support letter/resolution requests continued
- Metrics/dashboards updated
- Abstracts prepared/submitted
- Demonstration facility recommendations advanced; materials started
- Speakers bureau presentations and evaluation continued
- Website updated
- Additional community partnerships established
- Outreach activities evaluated; public outreach plan updated
- Youth education opportunities identified/pursued
- Water cycle tour concept developed

SUSTAINABLE WATER AND ENVIRONMENTAL STEWARDSHIP IN THE REGION



PURE WATER PROJECT LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

A New Source of Water for Southern California

The Las Virgenes-Triunfo Joint Powers Authority (JPA) is undertaking a visionary project to improve local water supply reliability and drought resilience, and effectively eliminate discharges to Malibu Creek, a current practice that is costly due to new regulations without commensurate public benefit.

The Pure Water Project relies on indirect potable reuse, a water supply strategy now adopted by many cities and water agencies in California and across the United States to provide local, reliable water supplies. The project involves the development of

necessary infrastructure to provide for the delivery of recycled water to a proposed advanced water treatment facility where proven technology will be used to purify the water. In addition to stopping the unsustainable practice of discharging recycled water to Malibu Creek in the winter, the Pure Water Project provides an affordable, local water supply that will be cost-competitive with imported water supplies over the long-term. This important effort will require public understanding, regional leadership, and funding to move from concept to reality.



Las Virgenes Reservoir

The environmentally sensitive Malibu Creek Watershed and Las Virgenes – Triunfo Joint Powers Authority communities will benefit from the proposed Pure Water Project Las Virgenes – Triunfo, which will provide a new, local water supply for the region and eliminate discharges of recycled water to Malibu Creek.

Infrastructure for Indirect Potable Reuse

The Pure Water Project will use proven technology to provide safe water through construction of an advanced water purification plant that will treat recycled water from the JPA's Tapia Water Reclamation Facility.

The purified water will be conveyed through a newly-constructed pipeline to the Las Virgenes Reservoir where it will blend with the water stored there. All reservoir water will be retreated to drinking water standards at the Westlake Filtration Plant before it is safely delivered to homes and businesses. A method for brine disposal will also be included in the project. The effort will require public understanding, regional leadership, and funding to move from concept to reality.

Tapia Water Reclamation Facility



Built in 1965, each day the Tapia Water Reclamation Facility treats upward of nine million gallons to Title 22-Tertiary Treated Recycled Water standards.

Long-Term Effort to Bring Our Water Full Circle

Years 1 – 5

- ▶ Demonstration Project
- ▶ Regulatory/Environmental Compliance
- ▶ Financing and Funding
- ▶ Pre-Design
- ▶ Land Acquisition
- ▶ Public Outreach



Years 6 – 8

- ▶ Final Design
- ▶ Construction Permitting
- ▶ Equipment Procurement
- ▶ Public Outreach

A Collaborative Approach

The proposed project stems from the recommendations of a stakeholder group that explored ways to maximize the beneficial use of the region's recycled water. The stakeholders, representing various interested parties in the watershed, conducted an intensive 18-month collaborative process to evaluate the political, economic, social, technical, legal and environmental aspects of a number of alternatives. Of the two options recommended by the stakeholders, the JPA selected **ADVANCED WATER TREATMENT** for indirect potable reuse over the Encino Reservoir Seasonal Storage alternative.

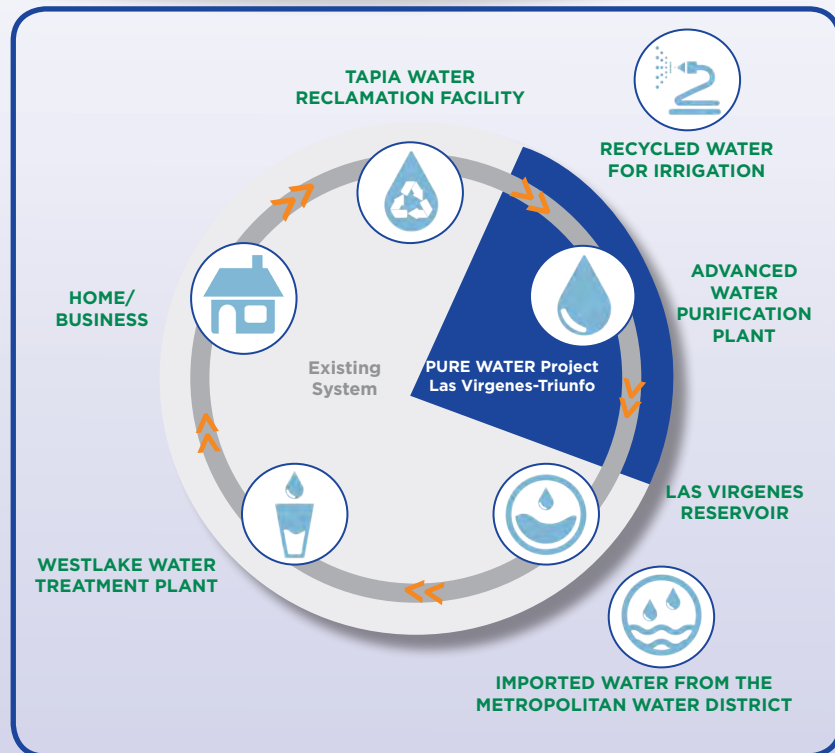


Advantages

- ◆ Reduces demand for imported potable water
- ◆ Makes use of an underutilized local resource
- ◆ Takes advantage of existing infrastructure
- ◆ Is a multi-agency and multi-county collaborative project
- ◆ Provides long-term cost benefits

Challenges

- ◆ Brine disposal
- ◆ Construction cost: \$95 million (seeking State, Federal and local assistance)
- ◆ Pipeline construction in urbanized areas
- ◆ Public acceptance



Years 9 – 11

- ▶ Construction of Pipelines and Advanced Water Treatment Facility
- ▶ Public Outreach

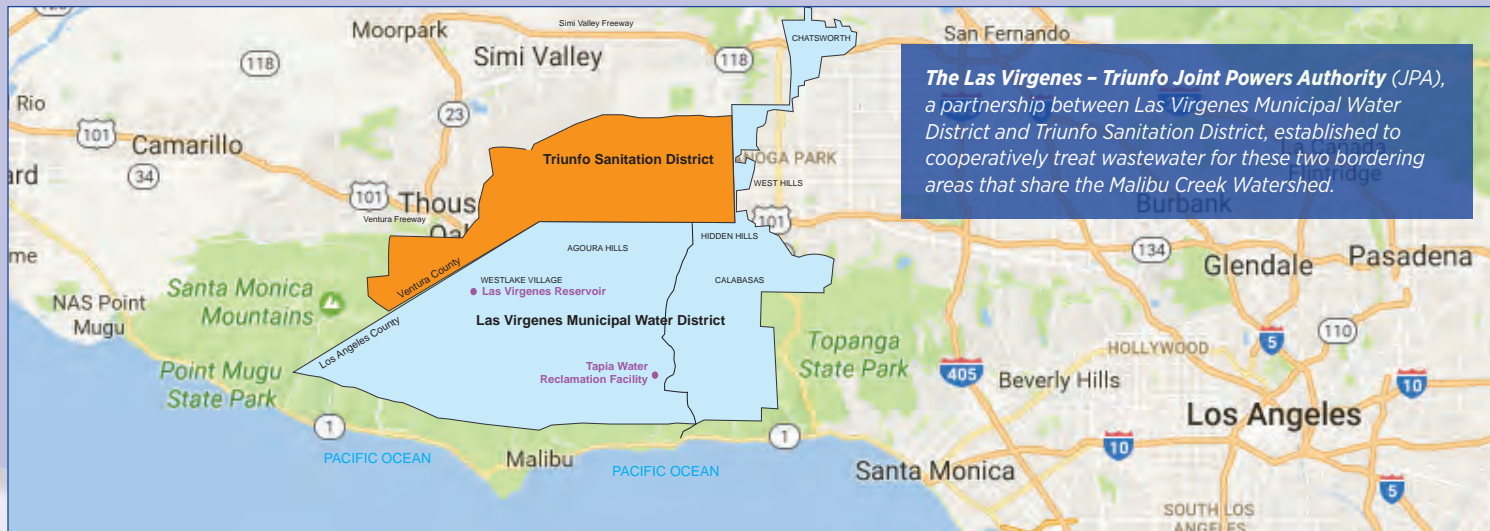


Years 11 – 13 1/2

- ▶ Project Start-Up
- ▶ Regulatory Compliance
- ▶ Public Outreach



Serving Southern California



JPA's Environmental Stewardship

The Las Virgenes – Triunfo JPA has demonstrated its long-term commitment to a stewardship role in the Malibu Creek Watershed:

- ▶ A leader in developing recycled water as a resource since the early 1970s.
- ▶ Built \$50 million in watershed improvements including a composting facility to eliminate land application of biosolids.
- ▶ Maintains stream flow for endangered species protection.
- ▶ Invested over \$12 million in nutrient reduction facilities.
- ▶ Avoids creek discharge for seven months each year at a cost of \$1 million per year.
- ▶ Contracted for 20 years of solar power to pump recycled water and reduce greenhouse gases.
- ▶ Funded creek monitoring and the compilation of 40 years of water quality data.
- ▶ Representation in the Santa Monica Bay Restoration Commission.
- ▶ Conducts tours and educational programs for elected officials, residents and students on their respective roles



One megawatt solar power facility used to pump recycled water in Calabasas, CA.

For More Information

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www.LVMWD.com/Pure-Water-Project



PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle