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 December 5, 2016

PLEDGE OF ALLEGIANCE

1 CALL TO ORDER AND ROLL CALL

2 APPROVAL OF AGENDA

3 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

4 CONSENT CALENDAR

A Minutes: Regular Meeting of November 7, 2016 (Pg. 3)

Approve

5 ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

A Recognition of Director Michael McReynolds' Service to JPA

B Annual Financial Statements and Independent Auditor's Report (Pg. 9)

Receive and file the Fiscal Year 2015-16 JPA Financial Statements and Independent Auditor's Report.

6 ACTION ITEMS

A Tapia Water Reclamation Facility Secondary Influent Slide Gates Replacement: Final Acceptance (Pg. 47)

Approve the execution of a Notice of Completion and have the same recorded, and in the absence of claims from subcontractors and others, release the retention, in the amount of $19,694.65, within 30 calendar days after filing the Notice of Completion for

the Tapia Water Reclamation Facility Secondary Influent Slide Gates Replacement Project.

B Pure Water Project Las Virgenes-Triunfo: Reschedule Special Board Workshop (Pg. 50)

Reschedule the special JPA Board meeting for a workshop to discuss institutional issues related to the Pure Water Project Las Virgenes-Triunfo.

C Pure Water Project Las Virgenes-Triunfo: Award of Preliminary Design and Environmental Review for Demonstration Project (Pg. 51)

Accept the proposal from CDM Smith, in the amount of $142,487, and authorize the Administering Agent/General Manager to execute a professional services agreement for the preliminary design and environmental review of a demonstration project for the Pure Water Project Las Virgenes-Triunfo.

7 BOARD COMMENTS

8 ADMINISTERING AGENT/GENERAL MANAGER REPORT

9 FUTURE AGENDA ITEMS

10 INFORMATION ITEMS

A Supply and Delivery of Aluminum Sulfate: Award of Bid (Pg. 105)

B Reservoir No. 2 Improvements: Shade Ball Effectiveness (Pg. 109)

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.

LAS VIRGENES – TRIUNFO
JOINT POWERS AUTHORITY
MINUTES
REGULAR MEETING

5:00 PM November 7, 2016

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Michael Paule.

1. CALL TO ORDER AND ROLL CALL

The meeting was called to order at **5:00 p.m.** by Vice Chair Michael Paule 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, McReynolds, Orkney, Paule, Polan, Renger, and Wall.
Absent: Director(s): Peterson.

2. APPROVAL OF AGENDA

Director Renger moved to approve the agenda as presented. Motion seconded by Director Wall. Motion carried by the following vote:

AYES: Caspary, Iceland, Lewitt, McReynolds, Orkney, Paule, Polan, Renger, Wall
NOES: None
ABSENT: Peterson
ABSTAIN: None

3. PUBLIC COMMENTS

None.

4. CONSENT CALENDAR

A Minutes: Special Meeting of October 5, 2016

Director Iceland moved to approve the Consent Calendar as presented. Motion

seconded by Director Renger. Motion carried by the following vote:

AYES: Caspary, Iceland, Lewitt, McReynolds, Orkney, Paule, Polan, Renger, Wall
NOES: None
ABSENT: Peterson
ABSTAIN: None

5. ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

A TMDL Implementation Plan Update

Administering Agent/General Manager David Pedersen provided an update on the Los Angeles Regional Water Quality Control Board's (Regional Board) draft 2013 Implementation Plan for the Malibu Creek Nutrients Total Maximum Daily Load (TMDL) and the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments. He noted that the JPA previously submitted written comments for the Regional Board's consideration, including the timeframe for short and long-term actions the JPA would take in order to implement the TMDL. He stated that the Regional Board prescribed a five-year timeframe for complying with the summer TMDL limits and a 13.5-year timeframe for the long-term strategy for winter compliance for the Pure Water Project. He noted that the 13.5 year timeframe would not begin until final adoption of the basin plan amendment incorporating the TMDL Implementation Plan, which would not be completed for 9 to 12 months. He also noted that the final outstanding issue was winter wet weather compliance addressing large storm events, receiving large peak flows into the treatment plant, and the ability to discharge to the creek. He stated that the Regional Board agreed to a mass-based limit rather than a concentration-based limit that would apply anytime there are flows from Tapia exceeding 11 million gallons per day (mgd) over a 24-hour period. He also stated that the Regional Board had addressed the JPA's comments to staff's satisfaction. He noted that staff would attend the Regional Board's hearing on November 10th, and staff would comment in support of the implementation plan, ask the Regional Board to adopt the plan as written, explain why the timeframe of 13.5 years for winter compliance makes sense, and explain the JPA's ultimate plan for the Pure Water Project Las Virgenes-Triunfo.

6. ACTION ITEMS

A 2017 JPA Board Meeting Calendar

Review the 2017 JPA Board Meeting Calendar, make any scheduling adjustments, and select a date and time for a special Board workshop to discuss institutional issues related to the Pure Water Project Las Virgenes-Triunfo.

Administering Agent/General Manager David Pedersen presented the report. He suggested the Board schedule a special meeting on January 19, 2017, at 5:00 p.m., for a workshop to discuss institutional issues related to the Pure Water Project Las Virgenes-Triunfo.

Director Orkney suggested canceling the July 3, 2017 regular meeting due to the proximity of the Independence Day holiday, and scheduling a special meeting on July 10, 2017.

Director Orkney moved to approve the 2017 JPA Board Meeting calendar as amended by scheduling a special meeting on January 19, 2017 for the workshop, cancelling the July 3, 2017 regular meeting, and scheduling a special meeting on July 10, 2017. Motion seconded by Director Renger. Motion carried by the following vote:

AYES: Caspary, Iceland, Lewitt, McReynolds, Orkney, Paule, Polan, Renger, Wall
NOES: None
ABSENT: Peterson
ABSTAIN: None

B Tapia Chemical Building Roof Replacement Project: Award

Accept the proposal from L&L Roofing and authorize the Administering Agent/General Manager to execute a contractual services agreement, in the amount of $55,000, for the Tapia Chemical Building Roof Replacement Project.

Administering Agent/General Manager David Pedersen presented the report.

Director McReynolds moved to approve Item 6B. Motion seconded by Director Lewitt.

Director of Facilities and Operations David Lippman responded to a question regarding to the type of insulation that would be installed by stating that he would follow-up with the contractor and report back to the Board.

Motion carried by the following vote:

AYES: Caspary, Iceland, Lewitt, McReynolds, Orkney, Paule, Polan, Renger, Wall
NOES: None
ABSENT: Peterson
ABSTAIN: None

C Digester 1 Rehabilitation Project: Award of Design Contract

Accept the proposal from Pacific Advanced Civil Engineering, Inc., and authorize the Administering Agent/General Manager to execute a professional services agreement, in the amount of $53,694, for design of the Digester No. 1 Rehabilitation Project.

Administering Agent/General Manager David Pedersen presented the report. He responded to questions related to the tank concrete material and the possibility of translating design services for Digester No. 2.

Director of Facilities and Operations David Lippman responded to questions related to the project timeline, the extent of damage to Digester No. 1, and replacing the instrumentation in case of failure.

Director Renger moved to approve Item 6C. Motion seconded by Director Polan. Motion carried by the following vote:

AYES: Caspary, Iceland, Lewitt, McReynolds, Orkney, Paule, Polan, Renger, Wall
NOES: None
ABSENT: Peterson
ABSTAIN: None

7. BOARD COMMENTS

Director Orkney commended Las Virgenes Municipal Water District on its representation of *Little Drop*. She reported that she participated in the Thousand Oaks Street Faire and stated that she was impressed by the Advanced Placement (AP) Government and Political Science students who visited her booth. She suggested the JPA look into reaching out to the AP classes.

8. ADMINISTERING AGENT/GENERAL MANAGER REPORT

Administering Agent/General Manager David Pedersen reported that he, Triunfo Sanitation District Manager Mark Norris, and Director of Facilities and Operations David Lippman met with Ventura County Supervisor Linda Parks and staff from the Ventura County Watershed Protection District to discuss the potential of a low flow diversion in lieu of the County's biofiltration project in Oak Park. He noted that one area of concern would be the ability to dispose of brine to Calleguas Municipal Water District's (Calleguas) Salinity Management Pipeline. He suggested exploring this option further with Calleguas. He stated that staff was also approached by other municipalities for similar low flow diversions, and an item would be presented on a future agenda for Board discussion.

9. FUTURE AGENDA ITEMS

None.

10. INFORMATION ITEMS

A 18-inch Recycled Water Pipeline Joint Bonding Repair Project: Final Acceptance

11. PUBLIC COMMENTS

None.

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)

The Board recessed to Closed Session at **5:34 p.m.** and reconvened to Open Session at **6:00 p.m.**

Authority Counsel Wayne Lemieux reported that during the Closed Session the Board received a report regarding the Ninth Circuit's oral arguments heard earlier in the day related to Heal the Bay, Inc., et al v. United States Environmental Protection Agency et al.

13. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **6:00 p.m**.

Glen Peterson, Chair

ATTEST:

Michael Paule, Vice Chair

December 5, 2016 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

Subject : Annual Financial Statements and Independent Auditor's Report

SUMMARY:

The Pun Group, LLP completed the annual audit of the Las Virgenes-Triunfo Joint Powers Authority (JPA) financial statements and issued an opinion that they fairly present the financial position of the JPA as of June 30, 2016.

RECOMMENDATION(S):

Receive and file the Fiscal Year 2015-16 JPA Financial Statements and Independent Auditor's Report.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

DISCUSSION:

The JPA's net position decreased by $3,721,655, or 3.9%, during Fiscal Year 2015-16 and by $2,715,143, or 2.7%, during Fiscal Year 2014-15. For Fiscal Year 2015-16, expenditures were reduced by 8.4%, or $1.3 million, while billings to participants were decreased by 10.7%. The reduction in expenditures and billings were the result of reduced flows to Tapia due to the on-going drought and State-mandated water use restrictions that were in place during the fiscal year. The decrease in net position was largely due to depreciation expense, which was partially offset by participant capital contributions.

The following table provides highlights from the JPA's Financial Statements.

	Amount (In Thousands)	
Description	FY 2016	FY 2015
Recycled Water Sales	$2,287	$2,135
Other Operating Revenue	70	226

Total Operating Revenue	**2,357**	**2,361**
Depreciation Expense	6,492	6,318
Other Operating Expense	13,919	15,190
Total Operating Expense	**20,411**	**21,508**
Loss before Billings	(18,054)	(19,147)
Billings to Participants	11,540	12,929
Non-operating Revenue	22	13
Non-operating Expenses	(44)	(167)
Net Loss before Capital Contributions	**(6,536)**	**(6,372)**
Participant Capital Contributions	2,814	3,657
NET POSITION		
Net Position Beginning of Year	96,482	99,197
Change in Net Position	(3,722)	(2,715)
Net Position - End of Year	**92,760**	**96,482**

A representative from The Pun Group, LLP will be available at the JPA Board meeting to answer questions.

Prepared by: Donald Patterson, Director of Finance and Administration

ATTACHMENTS:

Auditor's Letter
Audited Financial Statements

THE PUN GROUP
ACCOUNTANTS & ADVISORS

November 14, 2016

To the Board of Directors
of the Las Virgenes-Triunfo Joint Powers Authority
Calabasas, California

We have audited the financial statements of the Las Virgenes-Triunfo Joint Powers Authority (the "JPA") for the years ended June 30, 2016 and 2015, and have issued our report thereon dated November 14, 2016. Professional standards require that we provide you with the following information related to our audit.

Our Responsibility under U.S. Generally Accepted Auditing Standards and *Government Auditing Standards*

As stated in our engagement letter dated July 8, 2016, our responsibility, as described by professional standards, is to express opinions about whether the financial statements prepared by management with your oversight are fairly presented, in all material respects, in conformity with U.S. generally accepted accounting principles. Our audit of the financial statements does not relieve you or management of your responsibilities.

As part of our audit, we considered the internal control of the JPA. Such considerations are solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we also performed tests of the JPA's compliance with certain provisions of laws, regulations, contracts, and grants. However, providing an opinion on compliance with those provisions is not an objective of our audit.

Our responsibility is to plan and perform the audit to obtain reasonable, but not absolute, assurance that the financial statements are free of material misstatement.

Generally accepted accounting principles provide for certain required supplementary information ("RSI") to supplement the basic financial statements. Our responsibility with respect to the Management Discussion and Analysis ("MD&A"), which supplements the basic financial statements, is to apply certain limited procedures in accordance with generally accepted auditing standards. However, the RSI was not audited and, because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance, we do not express an opinion or provide any assurance on the RSI.

We have been engaged to report on the Schedule of Changes in Participants' Advance Account, which accompany the financial statements but are not RSI. Our responsibility for this supplementary information, as described by professional standards, is to evaluate the presentation of the supplementary information in relation to the financial statements as a whole and to report on whether the supplementary information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Planned Scope and Timing of the Audit

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit will involve judgment about the number of transactions to be examined and the areas to be tested.

Our audit included obtaining an understanding of the entity and its environment, including internal control, sufficient to assess the risks of material misstatement of the financial statements and to design the nature, timing, and extent of further audit procedures. Material misstatements may result from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the entity or to acts by management or employees acting on behalf of the entity.

We performed the audit according to the planned scope and timing previously communicated to you.

Significant Audit Findings

Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the JPA are described in Note 2 to the basic financial statements.

New Accounting Standards

GASB has issued Statement No. 72, *Fair Value Measurement and Application*. This Statement addresses accounting and financial reporting issues related to fair value measurements. This Statement provides guidance for determining a fair value measurement for financial reporting purposes and also provides guidance for applying fair value to certain investments and disclosures related to all fair value measurements. This statement became effective for periods beginning after June 15, 2015 and did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

GASB has issued Statement No. 73, *Accounting and Financial reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*. This Statement establishes requirements for defined benefit pensions that are not within the scope of Statement No. 68, Accounting and Financial Reporting for Pensions, as well as for the assets accumulated for purposes of providing those pensions. In addition, it establishes requirements for defined contribution pensions that are not within the scope of Statement 68. It also amends certain provisions of Statement No. 67, Financial Reporting for Pension Plans, and Statement 68 for pension plans and pensions that are within their respective scopes. This statement became effective for periods beginning after June 15, 2015 and did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

GASB has issued Statement No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*. This statement establishes standards relating to the hierarchy of generally accepted accounting principles (GAAP). The "GAAP hierarchy" consists of the sources of accounting principles used to prepare financial statements of state and local governmental entities in conformity with GAAP and the framework for selecting those principles. This Statement reduces the GAAP hierarchy to two categories of authoritative GAAP and addresses the use of authoritative and nonauthoritative literature in the event that the accounting treatment for a transaction or other event is not specified within a source of authoritative GAAP. This statement became effective for periods beginning after June 15, 2015, and should be applied retroactively. This statement did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

GASB has issued Statement No. 79, *Certain External Investment Pools and Pool Participants*. This statement establishes standards relating accounting and financial reporting for certain external investment pools and pool participants. This statement became effective for periods beginning after June 15, 2015, except for certain provisions on portfolio quality, custodial credit risk, and shadow pricing. Those provisions are effective for reporting periods beginning after December 15, 2015 and did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

No other new accounting policies were adopted and the application of existing policies was not changed during 2016. We noted no transactions entered into by the JPA during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the JPA's financial statements were:

- Management's estimate of the investment fair market value is based on information provided by the State of California for its investment in the Local Agency Investment Fund, and information provided by the Union Bank, the trustee for the JPA's investments in U.S. Government Sponsored Enterprise Securities. We evaluated the key factors and assumptions used to develop the estimate of the investment fair market value in determining that it is reasonable in relation to the financial statements taken as a whole.

- Management's estimate for the allowance for doubtful accounts is based on the JPA's historical data with the collectability of its accounts receivable. We evaluated the key factors and assumptions used to develop the estimate for the allowance for doubtful accounts in determining that it is reasonable in relation to the financial statements taken as a whole.

- Management's estimate of the depreciable lives and estimated residual value of capital assets is based on the JPA's capital assets policy. We evaluated the key factors and assumptions used to develop the depreciation on capital assets in determining that it is reasonable in relation to the financial statements taken as a whole.

Certain financial statement disclosures are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting the financial statements were:

- Note 2 – Summary of Significant Accounting Policies
- Note 3 – Cash and Investments
- Note 6 – Participant Contributions
- Note 8 – Commitment and Contingencies

The financial statement disclosures are neutral, consistent, and clear.

Difficulties Encountered in Performing the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. In addition, none of the misstatements detected as a result of audit procedures and corrected by management were material, either individually or in the aggregate, to each opinion unit's financial statements taken as a whole.

Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Management Representations

We have requested certain representations from management that are included in the management representation letter dated November 14, 2016.

Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the JPA's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other accountants.

Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the governmental unit's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Other Matters

We applied certain limited procedures to the MD&A, which is RSI that supplements the basic financial statements. Our procedures consisted of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We did not audit the RSI and do not express an opinion or provide any assurance on the RSI.

We were engaged to report on the Schedule of Changes in Participants' Advance Account, which accompany the financial statements but are not RSI. With respect to this supplementary information, we made certain inquiries of management and evaluated the form, content, and methods of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.

Restriction on Use

This information is intended solely for the use of the Board of Directors and management of the Las Virgenes-Triunfo Joint Powers Authority and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

The Pun Group, LLP

Santa Ana, California

Kenneth H. Pun, CPA, CGMA
CPA Number: 88316

Las Virgenes – Triunfo Joint Powers Authority

Financial Statements and Independent Auditors' Reports

For the Years Ended June 30, 2016 and 2015

THE PUN GROUP
ACCOUNTANTS & ADVISORS

Las Virgenes-Triunfo Joint Powers Authority

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THE PUN GROUP
ACCOUNTANTS & ADVISORS

INDEPENDENT AUDITORS' REPORT

To the Board of Directors
of the Las Virgenes-Triunfo Joint Powers Authority
Calabasas, California

Report on the Financial Statements

We have audited the accompanying basic financial statements of the Las Virgenes-Triunfo Joint Powers Authority (the "JPA"), which comprise the statement s of net position as of June 30, 2016 and 2015, and the related statements of revenues, expenses and changes in net position, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the JPA as of June 30, 2016 and 2015, and the respective changes in its financial position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 5 to 9 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the JPA's basic financial statements. The Supplementary Schedule of Changes in Participants' Advance Accounts is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The Schedule of Changes in Participants' Advance Accounts is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Changes in Participants' Advance Accounts is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated November 14, 2016, on our consideration of the JPA's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the JPA's internal control over financial reporting and compliance.

The Pun Group, LLP

Santa Ana, California
November 14, 2016

Kenneth H. Pun, CPA, CGMA
CPA Number: 88316

THE PUN GROUP
ACCOUNTANTS & ADVISORS

REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Independent Auditors' Report

To the Board of Directors
of the Las Virgenes-Triunfo Joint Powers Authority
Calabasas, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the basic financial statements of the Las Virgenes-Triunfo Joint Power Authority (the "JPA"), which comprise the statements of net position as of June 30, 2016 and 2015, and the related statements of revenues, expenses, and changes in net position and cash flows for the years then ended, and have issued our report thereon dated November 14, 2016.

Internal Control over Financial Reporting

In planning and performing our audits of the financial statements, we considered the JPA's internal control over financial reporting ("internal control") to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the JPA's internal control. Accordingly, we do not express an opinion on the effectiveness of the JPA's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the JPA's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards.*

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

The Pun Group, LLP

Santa Ana, California
November 14, 2016

Kenneth H. Pun, CPA, CGMA
CPA Number: 88316

MANAGEMENT'S DISCUSSION AND ANALYSIS

This section of the Joint Powers Authority (JPA) annual financial report presents our analysis of the JPA's financial performance during the Fiscal Years that ended on June 30, 2015 and June 30, 2016. Please read it in conjunction with the Financial Statements, which follow this section.

FINANCIAL HIGHLIGHTS

- The JPA's net position decreased by $3,721,655, or 3.9% during FY16 and by $2,715,143, or 2.7% during FY15.

- During FY16 the JPA's operating expenses, not including depreciation expense, decreased $1.3 million, or down by 8.4% while it remain the static during FY15.

- Billings to JPA participants decreased to $11.5 million during FY16 or by 10.7% less than the prior fiscal year, while it increased to $12.9 million during FY15 or by 7.4% from prior fiscal year..

OVERVIEW OF THE FINANCIAL STATEMENTS

The discussion and analysis are intended to serve as an introduction to Las Virgenes - Triunfo Joint Powers Authority (JPA) financial statements. The JPA's basic financial statements comprise two components: Financial Statements and Notes to the Financial Statements. This report also contains other supplementary information in addition to the basic financial statements themselves.

BASIC FINANCIAL STATEMENTS

The Financial Statements of the JPA report information about the JPA using accounting methods similar to those used by private sector companies. These statements offer short- and long-term financial information about its activities. The Comparative Statements of Net Position (CSNP) includes all of the JPA's assets and liabilities and provides information about the nature and amount of investments in resources (assets) and the obligations to JPA creditors (liabilities). The CSNP also provides the basis for evaluating the capital structure of the JPA.

All of the current year's revenues and expenses are accounted for in the Comparative Statements of Revenues, Expenses and Changes in Net Position. These statements reflect the result of the JPA's operations over the past year.

The final Financial Statements are the Comparative Statements of Cash Flows. The primary purpose of this statement is to provide information about the JPA's cash receipts and cash payments during the reporting period. The statement reports cash receipts, cash payments, and net changes in cash resulting from operations and investments. It also provides answers to such questions as where did cash come from, what was cash used for, and what was the change in cash balance during the reporting period.

FINANCIAL ANALYSIS OF THE JOINT POWERS AUTHORITY

The analysis of the JPA begins on with the Financial Statements. The statements provide information on whether the District, as a whole, is in a stronger or weaker financial position compared to the last year. The Statement of Net Position and the Statement of Revenues, Expenses, and Changes in Net Position provide a means to measure the District's financial health or financial position. Over time, increases or decreases in the District's net position are one indicator of whether its financial health is improving or deteriorating. However, you will need to consider other non-financial factors such as changes in economic conditions, population growth, zoning, and new or changed government legislation.

The JPA has been impacted by the current multi-year drought through decreased sanitation flows and decreased sales of recycled water. Additionally, during FY 2015-16, the JPA made significant progress on a multi-year planning effort to maximize beneficial reuse of recycled water. During FY 2015-16, the JPA studied multiple scenarios ranging from construction of a new recycled water reservoir to indirect potable reuse. During FY 2016-17, a preferred alternative is expected to continue in the planning and design process.

NET POSITION

To begin our analysis, a summary of the JPA's Statement of Net Position is presented in Table 1.

TABLE 1
Condensed Statements of Net Position
(in thousands of dollars)

	FY 2016	FY 2015	FY 2014
Current Assets	$6,463	$6,832	$7,310
Capital Assets	92,760	96,482	99,197
Total Assets	**99,223**	**103,314**	**106,507**
Due to Participants	5,812	5,952	6,534
Other Liabilities	651	880	776
Total Liabilities	**6,463**	**6,832**	**7,310**
Total Net Position:	**$92,760**	**$96,482**	**$99,197**

As can be seen from the table above, net position of the JPA is equivalent to capital assets. Everything else is either a current asset or a liability. The decrease in Net Position (and capital assets) is due to depreciation expense exceeding participant capital contributions.

While the Statement of Net Position shows the change in financial position, the Statement of Revenues, Expenses and Changes in Net Position provides answers as to the nature and source of these changes.

TABLE 2
Condensed Statements of Revenues, Expenses and Changes in Net Position
(in thousands of dollars)

	FY 2016	FY 2015	FY 2014
Recycled Water Sales	$2,287	$2,135	$2,892
Other Operating Revenue	70	226	213
Total Operating Revenue	**2,357**	**2,361**	**3,105**
Depreciation Expense	6,492	6,318	6,280
Other Operating Expense	13,919	15,190	15,153
Total Operating Expense	**20,411**	**21,508**	**21,433**
Loss before Billings	**(18,054)**	**(19,147)**	**(18,328)**
Billings to Participants	11,540	12,929	12,037
Non-Operating Revenue	22	13	11
Non-Operating Expense	(44)	(167)	(84)
Net Loss before Capital Contributions	**(6,536)**	**(6,372)**	**(6,364)**
Participant Capital Contributions	2,814	3,657	6,177
NET POSITION:			
Net Position - Beginning of Year	96,482	99,197	99,384
Change in Net Position	(3,722)	(2,715)	(187)
Net Position – End of Year	**$92,760**	**$96,482**	**$99,197**

As reflected in Table 2, revenue from recycled water sales increased slightly due to an increase in wholesale water rates. Revenue was suppressed by a 13% reduction in recycled water purchases from Las Virgenes Municipal Water District. Recycled water sales to Triunfo Sanitation District were flat year-over-year. Operating expenses decreased due to decreased sanitation flow to the Tapia Water Reclamation Facility.

CAPITAL ASSETS AND DEBT ADMINISTRATION

At the end of FY 2016 and FY 2015, the JPA had net capital assets of $92.8 million and $96.4 million, respectively as shown in Table 3.

TABLE 3
Capital Assets
(in thousands of dollars)

	FY 2016	FY 2015	FY 2014
Land & Land Rights	12,259	12,259	$12,259
Sewer & Treatment Plant	118,814	117,535	117,198
Compost Plant	70,972	63,275	63,063
Recycled Water System	33,349	31,845	31,845
Construction in Progress	2,217	10,250	7,320
Subtotal	**237,611**	**235,164**	**231,685**
Less Accumulated Depreciation	(144,851)	(138,682)	(132,488)
Total Capital Assets	**92,760**	**96,482**	**$99,197**

The following is a summary of some of the major improvements to the system during FY 2016 and FY 2015.

TABLE 4
Major Capital Improvement Projects
(in thousands of dollars)

	FY 2016
Tapia Channel Mixing Improvements	$1,105
Recycled Water Seasonal Storage Plan	526
Woodland Hills Golf Course Recycled Water Main Extension	378
Rancho Las Virgenes Compost Facility New Loader	163
Rancho Las Virgenes Digester Cleaning and Repair	162
Centrate Equalization Tank	145
Total Major Projects	**$2,479**

	FY 2015
Reservoir #2 Improvements	$1,425
Construction of 3rd Digester at Rancho	1,297
Tapia Primary Tank Rehabilitation	260
Centrate Tank Cathodic Protection System Replacement	129
Total Major Projects	**$3,111**

LONG TERM DEBT

The JPA currently has no long-term debt. All funding is provided by the participating agencies.

CONTACTING THE DISTRICT'S FINANCIAL MANAGER

This financial report is designed to provide our residents, customers and creditors with a general overview of the JPA's finances and to demonstrate the JPA's accountability for the money it receives. The responsibility for the JPA's accounting and financial reporting rests with the staff of the Las Virgenes Municipal Water District. If you have questions about this report or need additional financial information, contact the Las Virgenes Municipal Water District, Department of Finance and Administration, 4232 Las Virgenes Road, Calabasas, California, 91302.

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Las Virgenes-Triunfo Joint Powers Authority
Statements of Net Position
June 30, 2016 and 2015

	2016	2015
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,352,680	$ 4,759,547
Investments	1,000,650	1,001,457
Accounts receivable	889,662	850,601
Interest receivable	6,621	3,937
Inventories	175,108	177,855
Prepaid items	38,372	39,131
Total current assets	6,463,093	6,832,528
Noncurrent assets:		
Capital assets, not being depreciated	14,475,926	22,509,038
Capital assets, being depreciated, net	78,284,060	73,972,613
Total capital assets	92,759,986	96,481,651
Total noncurrent assets	92,759,986	96,481,651
Total assets	99,223,079	103,314,179
LIABILITIES		
Current liabilities:		
Accounts and contracts payable and accrued liabilities	651,396	880,409
Due to participants	5,811,697	5,952,119
Total current liabilities	6,463,093	6,832,528
Total liabilities	6,463,093	6,832,528
NET POSITION		
Net Investments in Capital Assets by Participants:		
Las Virgenes Municipal Water District	61,600,523	64,185,698
Triunfo Sanitation District	31,159,463	32,295,953
Net Investments in Capital Assets by Participants	92,759,986	96,481,651
Total net position	$ 92,759,986	$ 96,481,651

See accompanying Notes to the Basic Financial Statements.

Las Virgenes-Triunfo Joint Powers Authority
Statements of Revenues, Expenses, and Changes in Net Positon
For the Years Ended June 30, 2016 and 2015

	2016	2015
OPERATING REVENUES:		
Wholesale recycled water sales	$ 2,286,663	$ 2,134,678
Other income	69,678	226,336
Total operating revenues	2,356,341	2,361,014
OPERATING EXPENSES:		
Treatment plant	4,265,142	4,428,106
Recycled water transmission and distribution	1,113,484	1,469,223
Compost plant	2,352,036	2,492,119
Sewer	65,253	112,719
Depreciation	6,491,741	6,318,589
General and administrative	5,931,993	6,452,880
Other operating expenses	191,375	234,508
Total operating expenses	20,411,024	21,508,144
OPERATING (LOSS) BEFORE BILLINGS TO PARTICIPANTS	(18,054,683)	(19,147,130)
Billings to participants	11,540,379	12,929,586
OPERATING (LOSS)	(6,514,304)	(6,217,544)
NONOPERATING REVENUES (EXPENSES):		
Interest income	22,563	13,136
Other expenses	-	(114,180)
Loss on disposal of capital assets	(44,061)	(53,353)
Total nonoperating revenues (expenses)	(21,498)	(154,397)
NET (LOSS) BEFORE PARTICIPANTS' CAPITAL CONTRIBUTIONS	(6,535,802)	(6,371,941)
Participants' capital contributions	2,814,137	3,656,798
CHANGES IN NET POSITION	(3,721,665)	(2,715,143)
NET POSITION:		
Beginning of year	96,481,651	99,196,794
End of year	$ 92,759,986	$ 96,481,651

See accompanying Notes to the Basic Financial Statements.

Las Virgenes-Triunfo Joint Powers Authority
Statements of Cash Flows
For the Years Ended June 30, 2016 and 2015

	2016	2015
CASH FLOWS FROM OPERATING ACTIVITIES:		
Cash received from participants	$ 13,787,981	$ 15,127,507
Cash paid to suppliers for operations	(14,144,789)	(14,961,919)
Other revenue	69,678	-
Net cash provided by (used in) operating activities	(287,130)	165,588
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:		
Acquisition of capital assets	(2,814,137)	(3,656,799)
Capital contributions	2,814,137	3,656,799
Net amount paid to participants	(140,423)	(581,866)
Net cash used in capital and related financing activities	(140,423)	(581,866)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Interest received	13,034	14,091
Purchase of investments	(1,000,000)	(1,002,456)
Cash receipts from sale of investments	1,007,652	-
Net cash provided by (used in) investing activities	20,686	(988,365)
Net decrease in cash and cash equivalents	(406,867)	(1,404,643)
CASH AND CASH EQUIVALENTS:		
Beginning of year	4,759,547	6,164,190
End of year	$ 4,352,680	$ 4,759,547
RECONCILIATION OF OPERATING LOSSES TO NET CASH USED IN OPERATING ACTIVITIES		
Operating loss	$ (6,514,304)	$ (6,217,544)
Adjustments to reconcile operating loss to net cash provided by (used in) operating activities:		
Depreciation	6,491,741	6,318,589
Changes in operating assets and liabilities:		
(Increase) decrease in accounts receivable	(39,061)	63,243
(Increase) decrease in inventories	2,747	10,466
(Increase) decrease in prepaid items	759	1,042
Increase (decrease) in accounts and contracts payable and accrued liabilities	(229,012)	103,972
Increase (decrease) in deposits and other	-	(114,180)
Net cash provided by (used in) operating activities	$ (287,130)	$ 165,588

See accompanying Notes to the Basic Financial Statements.

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Note 1 – Reporting Entity

On October 12, 1964, Las Virgenes Municipal Water District ("LVMWD") and Triunfo Sanitation District ("TSD") established Las-Virgenes-Triunfo Joint Powers Authority ("JPA") to construct, operate, maintain and provide for the replacement of a joint sewerage system to serve the Malibu Creek drainage area. The equity of each member is equal to the member's pro-rata share of capital assets, net of depreciation. LVMWD has been the designated administering agent.

Note 2 – Summary of Significant Accounting Policies

Basis of Presentation

Financial statement presentation follows the recommendations promulgated by the Governmental Accounting Standards Board ("GASB") commonly referred to as accounting principles generally accepted in the United States of America ("U.S. GAAP"). GASB is the accepted standard-setting body for establishing governmental accounting and financial reporting standards.

Measurement Focus, Basis of Accounting and Financial Statements Presentation

The Financial Statements (i.e., the statement of net position, the statement of revenues, expenses and changes in net position, and statement of cash flows) report information on all of the activities of the JPA.

The Financial Statements are reported using the *"economic resources"* measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Interest associated with the current fiscal period is considered to be susceptible to accrual and so has been recognized as revenue of the current fiscal period.

In accordance with GASB Statement No. 63, *Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources, and Net Position,* the Statement of Net Position reports separate sections for Deferred Outflows of Resources, and Deferred Inflows of Resources, when applicable.

Deferred Outflows of Resources represent outflows of resources (consumption of net position) that apply to future periods and that, therefore, will not be recognized as an expense until that time.

Deferred Inflows of Resources represent inflows of resources (acquisition of net position) that apply to future periods and that, therefore, are not recognized as revenue until that time.

Operating revenues are those revenues that are generated from the primary operations of the JPA. The JPA reports a measure of operations by presenting the change in net position from operations as "operating income" in the statement of revenues, expenses, and changes in net position. Operating activities are defined by the JPA as all activities other than financing and investing activities (interest expense and investment income), and other infrequently occurring transaction of a non-operating nature. Operating expenses are those expenses that are essential to the primary operations of the JPA. All other expenses are reported as non-operating expenses.

Note 2 – Summary of Significant Accounting Policies (Continued)

Cash, Cash Equivalents, and Investments

Cash and cash equivalents include all highly liquid investments with original maturities of 90 days or less and are carried at cost, which approximates fair value.

The JPA participates in an investment pool managed by the State of California titled Local Agency Investment Fund (LAIF), which has invested a portion of the pool funds in structured notes and asset-backed securities. The JPA also invests in CalTrust Short Term Fund. LAIF's investments are subject to credit risk with the full faith and credit of the State of California collateralizing these investments. In addition, these structured notes and assets-backed securities are subject to market risk and to change in interest rates. The reported value of the pool is the same as the fair value of the pool shares.

Certain disclosure requirements, if applicable for deposit and investment risk, are specified for the following areas:

- Interest Rate Risk
- Credit Risk
  - Overall
  - Custodial Credit Risk
  - Concentration of Credit Risk
- Foreign Currency Risk

Fair Value Measurements

In accordance with GASB Statement No. 72, *Fair Value Measurement and Application*, defines fair value, establishes a framework for measuring fair value and establishes disclosures about fair value measurement. Investments, unless otherwise specified, recorded at fair value in the Statements of Net Position, are categorized based upon the level of judgment associated with the inputs used to measure their fair value. Levels of inputs are as follows:

Level 1 — Inputs are unadjusted, quoted prices for identical assets and liabilities in active markets at the measurement date.

Level 2 — Inputs, other than quoted prices included in Level 1, that are observable for the asset or liability through corroboration with market data at the measurement date.

Level 3 — Unobservable inputs that reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date.

Accounts Receivable

Customer accounts receivable consist of amounts owed by private individuals and organizations for services rendered in the regular course of business operations. Receivables are shown net of allowances for doubtful accounts, if any. The JPA also accrues an estimated amount for services that have been provided, but not yet billed. Management has evaluated the accounts and believes they are all collectible.

Inventories

Inventories consist of expendable supplies and are valued at average cost method.

Note 2 – Summary of Significant Accounting Policies (Continued)

Prepaid items

Payments made to vendors for services that will benefit periods beyond the fiscal year ended are recorded as prepaid items.

Capital Assets

Capital assets are valued at historical cost, or estimated historical cost, if actual historical cost was not available. Donated capital assets are valued at their estimated fair market value on the date donated. The JPA policy has set the capitalization threshold for reporting capital assets at $5,000, all of which must have an estimated useful life in excess of one year. Depreciation is recorded on a straight-line basis over estimated useful lives of the assets, which range from 3 to 100 years.

Plant	10 - 100 Years
Machinery and equipment	3 - 25 Years

Capital assets are shared in accordance with each participant's capacity rights reserved in each component of the joint system. The allocation of costs for projects in process is based upon engineering estimates of the capacity rights and could increase or decrease when the final capacity rights are determined.

Net Position

Net position represents the difference between all other elements in the statement of net position and should be displayed in the following three components:

Net Investment in Capital Assets – This component of net position consists of capital assets, net of accumulated depreciation, reduced by the outstanding balances of debt that are attributable to the acquisition, construction, or improvement of those assets.

Restricted – This component of net position consists of restricted assets reduced by liabilities and deferred inflows of resources related to those assets.

Unrestricted – This component of net position is the amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that are not included in the determination of net investment in capital assets or the restricted component of net position.

Use of Restricted/Unrestricted Net Position

When both restricted and unrestricted resources are available for use, it is the JPA's policy to use restricted resources first, then unrestricted resources as they are needed.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect certain reported amounts and disclosure. Accordingly, actual results could differ from those estimates.

Note 2 – Summary of Significant Accounting Policies (Continued)

Accounting Changes

GASB has issued Statement No. 72, *Fair Value Measurement and Application*. This Statement addresses accounting and financial reporting issues related to fair value measurements. This Statement provides guidance for determining a fair value measurement for financial reporting purposes and also provides guidance for applying fair value to certain investments and disclosures related to all fair value measurements. This statement became effective for periods beginning after June 15, 2015 and did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

GASB has issued Statement No. 73, *Accounting and Financial reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*. This Statement establishes requirements for defined benefit pensions that are not within the scope of Statement No. 68, Accounting and Financial Reporting for Pensions, as well as for the assets accumulated for purposes of providing those pensions. In addition, it establishes requirements for defined contribution pensions that are not within the scope of Statement 68. It also amends certain provisions of Statement No. 67, Financial Reporting for Pension Plans, and Statement 68 for pension plans and pensions that are within their respective scopes. This statement became effective for periods beginning after June 15, 2015 and did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

GASB has issued Statement No. 76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*. This statement establishes standards relating to the hierarchy of generally accepted accounting principles (GAAP). The "GAAP hierarchy" consists of the sources of accounting principles used to prepare financial statements of state and local governmental entities in conformity with GAAP and the framework for selecting those principles. This Statement reduces the GAAP hierarchy to two categories of authoritative GAAP and addresses the use of authoritative and nonauthoritative literature in the event that the accounting treatment for a transaction or other event is not specified within a source of authoritative GAAP. This statement became effective for periods beginning after June 15, 2015, and should be applied retroactively. This statement did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

GASB has issued Statement No. 79, *Certain External Investment Pools and Pool Participants*. This statement establishes standards relating accounting and financial reporting for certain external investment pools and pool participants. This statement became effective for periods beginning after June 15, 2015, except for certain provisions on portfolio quality, custodial credit risk, and shadow pricing. Those provisions are effective for reporting periods beginning after December 15, 2015 and did not have a significant impact on the JPA's financial statements for the years ended June 30, 2016 and 2015.

Note 3 – Cash and Investments

At June 30, 2016 and 2015, cash and investments are reported in the accompanying statements of net position as follows:

	2016	2015
Cash and cash equivalent	$ 4,352,680	$ 4,759,547
Investments	1,000,650	1,001,457
	$ 5,353,330	$ 5,761,004

At June 30, 2016 and 2015, cash and investments consisted of the followings:

	2016	2015
Deposits:		
Pooled with Las Virgenes Municipal Water District	$ 337,517	$ 383,900
Investments:		
California Local Agency Investment Fund	4,015,163	4,375,647
CalTrust	-	1,001,457
U.S. Government Sponsored Agency Security	1,000,650	-
Total cash and investments	$ 5,353,330	$ 5,761,004

Demand Deposits

At June 30, 2016 and 2015, the carrying amounts of cash deposits were $337,517 and $383,900, respectively, which were fully insured and/or collateralized with securities held by the pledging financial institutions in the LVMWD's name as discussed below.

The California Government Code requires California banks and savings and loan associations to secure the LVMWD's cash deposits by pledging securities as collateral. This Code states that collateral pledged in this manner shall have the effect of perfecting a security interest in such collateral superior to those of a general creditor. Thus, collateral for cash deposits is considered to be held in the LVMWD's name.

The fair value of pledged securities must equal at least 110% of the LVMWD's cash deposits. California law also allows institutions to secure the LVMWD's deposits by pledging first trust deed mortgage notes having a value of 150% of the LVMWD's total cash deposits. LVMWD may waive collateral requirements for cash deposits, which are fully insured up to $250,000 by the Federal Deposit Insurance Corporation. LVMWD, however, has not waived the collateralization requirements.

Local Agency Investment Fund

The JPA's investments with Local Agency Investment Fund (LAIF) include a portion of the pool funds invested in Structured Notes and Asset-Backed Securities. These investments include the following:

- **Structured Notes** - debt securities (other than asset-backed securities) whose cash flow characteristics (coupon rate, redemption amount, or stated maturity) depend upon one or more indices and/or that have embedded forwards or options.
- **Asset-Backed Securities** - the bulk of which are mortgage-backed securities, entitle their purchasers to receive a share of the cash flows from a pool of assets such as principal and interest repayments from a pool of mortgages (such as CMO's) or credit card receivables.

LAIF is overseen by the Local Agency Investment Advisory Board, which consists of five members, in accordance with State statute.

As of June 30, 2016, the JPA had $4,015,163 invested in LAIF, which had invested 2.81% of the pool investment funds in Structured Notes and Asset-Backed Securities compared to $4,375,647 and 2.08% at June 30, 2015**.**

Note 3 – Cash and Investments (Continued)

Investments Authorized by the California Government Code and the JPA's Investment Policy

The JPA follows LVMWD's investment policy. The table below identifies the investment types that are authorized for the JPA by the California Government Code (or the LVMWD's investment policy, where more restrictive). The table also identified certain provisions of the California Code (or the LVMWD's investment policy, where more restrictive) that address interest rate risk, credit risk, and concentration of credit risk.

Authorized Investment Type	Maximum Maturity	Percentage of Portfolio	Maximum Investment In One Issuer
U.S. Treasury Bills, Bonds and Notes	5 Years	None	None
U.S. Government Sponsored Agency Securities	5 Years	None	None
Time Deposits	1 Year	25%	None
Repurchase Agreements	30 days	10%	None
California Local Agency Investment Fund (LAIF)	None	None	$50,000,000
Local Government Investment Pools	None	None	None
Bond issued by Local Agencies or States	5 Years	None	None

Disclosures Relating to Fair Value Measurement

Information about the fair value measurement of the JPA's investments is as follows:

	2016			2015		
	Level 1	Level 2	Total	Level 1	Level 2	Total
California Local Agency Investment Fund	$ -	$ 4,015,163	$ 4,015,163		$ 4,375,647	$ 4,375,647
CalTrust	-	-	-	-	1,001,457	1,001,457
U.S. Government Sponsored Agency Security	1,000,650	-	1,000,650	-	-	-
Total Investments	$ 1,000,650	$ 4,015,163	$ 5,015,813	$ -	$ 5,377,104	$ 5,377,104

Disclosures Relating to Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. One of the ways that the JPA manages its exposure to interest rate risk is by purchasing a combination of shorter term and longer term investments and by timing cash flows from maturities so that a portion of the portfolio is maturing or coming close to maturity evenly over time as necessary to provide the cash flow and liquidity needed for operations.

The JPA's investments of $5,015,813 and $5,377,104 at June 30, 2016 and 2015, respectively, made up of investments in LAIF and U.S. Government Sponsored Agency Securities at June 30, 2016 and LAIF and CalTRUST at June 30, 2015. Investments in LAIF are highly liquid, as deposits can be converted to cash within twenty-four hours without loss of interest. Investment in U.S. Government Sponsored Agency Securities matures in the year ended June 30, 2019, three years from June 30, 2016. Investment in CalTRUST has average maturity of 1.34 years as of June 30, 2015.

Note 3 – Cash and Investments (Continued)

Disclosures Relating to Credit Risk

Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. Investments in LAIF in the amounts of $4,015,163 and $4,375,647 at June 30, 2016 and 2015, respectively, are unrated. Investment in U.S. Government Sponsored Agency Securities in the amount of $1,000,650 at June 30, 2016 and in CalTRUST in the amount of $1,001,457 at June 30, 2015 are also unrated.

Disclosures Relating to Custodial Credit Risk

The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g., broker-dealer) to a transaction, a government will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The California Government Code and LVMWD's investment policy do not contain legal or policy requirements that would limit the exposure to custodial credit risk for investments. With respect to investments, custodial credit risk generally applies only to direct investments in marketable securities. Custodial credit risk does not apply to a local government's indirect investment in securities through the use of mutual funds or government investment pools (such as LAIF).

Note 4 – Capital Assets

Summary of changes in capital assets for the year ended June 30, 2016 is as follows:

	Balance July 1, 2015	Additions	Deletions	Reclassification	Balance June 30, 2016
Capital assets, not being depreciated:					
Land and land rights	$ 12,258,791	$ -	$ -	$ -	$ 12,258,791
Construction in progress	10,250,247	2,814,135	-	(10,847,247)	2,217,135
Total capital assets, not being depreciated	22,509,038	2,814,135	-	(10,847,247)	14,475,926
Capital assets, being depreciated:					
Sewer and treatment plant	117,534,566	-	-	1,279,939	118,814,505
Compost plant and farm	63,275,176	-	(367,174)	8,063,844	70,971,846
Recycled water system	31,845,276	-	-	1,503,464	33,348,740
Total capital assets, being depreciated	212,655,018	-	(367,174)	10,847,247	223,135,091
Less: accumulated depreciation					
Sewer and treatment plant	(75,900,762)	(3,378,551)	-	-	(79,279,313)
Compost plant and farm	(44,506,034)	(2,195,433)	323,115	-	(46,378,352)
Recycled water system	(18,275,609)	(917,757)	-	-	(19,193,366)
Total accumulated depreciation	(138,682,405)	(6,491,741)	323,115	-	(144,851,031)
Total capital assets, being depreciated, net	73,972,613	(6,491,741)	(44,059)	10,847,247	78,284,060
Total capital assets, net	$ 96,481,651	$ (3,677,606)	$ (44,059)	$ -	$ 92,759,986

Summary of changes in capital assets for the year ended June 30, 2015 is as follows:

	Balance July 1, 2014	Additions	Deletions	Reclassification	Balance June 30, 2015
Capital assets, not being depreciated:					
Land and land rights	$ 12,258,791	$ -	$ -	$ -	$ 12,258,791
Construction in progress	7,320,411	3,656,796	-	(726,960)	10,250,247
Total capital assets, not being depreciated	19,579,202	3,656,796	-	(726,960)	22,509,038
Capital assets, being depreciated:					
Sewer and treatment plant	117,197,572	-	(122,393)	459,387	117,534,566
Compost plant and farm	63,062,993	-	(55,390)	267,573	63,275,176
Recycled water system	31,845,276	-	-	-	31,845,276
Total capital assets, being depreciated	212,105,841	-	(177,783)	726,960	212,655,018
Less: accumulated depreciation					
Sewer and treatment plant	(72,630,780)	(3,350,101)	80,119	-	(75,900,762)
Compost plant and farm	(42,461,046)	(2,089,300)	44,312	-	(44,506,034)
Recycled water system	(17,396,423)	(879,186)	-	-	(18,275,609)
Total accumulated depreciation	(132,488,249)	(6,318,587)	124,431	-	(138,682,405)
Total capital assets, being depreciated, net	79,617,592	(6,318,587)	(53,352)	726,960	73,972,613
Total capital assets, net	$ 99,196,794	$ (2,661,791)	$ (53,352)	$ -	$ 96,481,651

Note 5 – Due to Participants

During the year ended June 30, 2016 and 2015, additional advances received from the participants were in the amount of $14,480,333 and $16,629,994, respectively. The advances received from the participants are used to pay for the operating, capital, and administrative cost of the JPA. At June 30, 2016 and 2015, due to participants were in the amount of $5,811,697 and $5,952,119, respectively.

Note 6 – Participant Contributions

Cost of the JPA is shared by the participants based on the following methodology. Variable operation and maintenance cost are prorated between the participants based on the average sewage flow contributed to the joint system. Fixed operating and maintenance cost are prorated between the participants based on the participants' respective capacity rights in the facility. Capital costs are prorated between the participants based on the participants' respectively capacity rights in the facility. Annual audit costs are shared equally. General and administrative costs are based on the actual cost of labor. Lastly, land acquisition costs are shared based on the capacity rights in the project for which the land is acquired. As of January 1, 2005, the joint system, except for the sewer collection system, is allocated by 70.6% to LVMWD and 29.4% to TSD.

The following is the summary of the contributions made by the participants for the years ended June 30, 2016 and 2015:

	2016			
	Operating Contribution	Percentage	Capital Contribution	Percentage
LVMWD	$ 7,623,145	66.1%	$ 1,986,781	70.6%
TSD	3,917,234	33.9%	827,356	29.4%
Total	$ 11,540,379	100.0%	$ 2,814,137	100.0%

	2015			
	Operating Contribution	Percentage	Capital Contribution	Percentage
LVMWD	$ 8,624,539	66.7%	$ 2,581,699	70.6%
TSD	4,305,047	33.3%	1,075,099	29.4%
Total	$ 12,929,586	100.0%	$ 3,656,798	100.0%

Note 7 – Risk Management

The JPA is covered under the LVMWD's insurance policies. The LVMWD retained Tolman & Wiker Insurance Service, LLC for general liability, property, auto and physical damage. The coverage for the general liability provided for $11 million per occurrence and $61 million for the aggregate, with a $50,000 self insured retention limit per occurrence. The coverage for the property provided for $61 million per occurrence with a self insured retention limit of $50,000 per occurrence.

During the past three fiscal years, none of the above programs of protection have had settlement or judgments that exceeded pooled or insured coverage. There have been no significant reductions in pooled or insured liability cover from coverage in the prior year.

Note 8 – Commitment and Contingencies

Lawsuits

The JPA is a defendant in various lawsuits. Although the outcome of these lawsuits is not presently determinable, it is the opinion of the JPA's legal counsel and the JPA's management that resolution of these matters will not have a material adverse effect on the financial condition of the JPA.

Commitments

The JPA had outstanding contract commitments of $2,319,964 and $2,216,418 for the years ended June 30, 2016 and 2015, respectively.

As of June 30, 2016 and 2015, in the opinion of the JPA's management, there were no additional outstanding matters that would have a significant effect on the financial position of the JPA.

SUPPLEMENTARY INFORMATION

Las Virgenes-Triunfo Joint Powers Authority
Schedule of Changes in Participants' Advance Accounts
For the Years Ended June 30, 2016 and 2015

	Construction Funds		Operating Funds	
	Tapia Plant and Truck Sewers		Operations and Maintenance	
	Las Virgenes Municipal Water District	Triunfo Sanitation District	Las Virgenes Municipal Water District	Triunfo Sanitation District
Due to (from) Participants - July 1, 2015	$ 338,007	$ 190,448	$ 2,319,846	$ 1,061,709
Advance from participants	26,442	(168,929)	7,626,632	4,664,471
Constructions costs allocated	(459,666)	(191,419)	-	-
Change in fair market value of LAIF	2,368	775	-	-
Change in fair market value of LAIF - Prior year	(1,317)	(328)	-	-
Grant income	-	-	-	-
Other miscellaneous income	254,746	106,085	-	-
Billings to participants for operating expenses	-	-	(7,626,632)	(3,920,982)
Billings to participants from replacement fund interest income	-	-	-	-
Interest income from (to) participants	817	267	-	-
Adjustment billing to participants for operating fund	-	-	(157)	(65)
Recycled water billings to Triunfo Sanitation District	-	-	-	(728,937)
Due to (from) Participants - June 30, 2016	$ 161,397	$ (63,101)	$ 2,319,689	$ 1,076,196

(Continued)

	Construction Funds		Operating Funds	
	Tapia Plant and Truck Sewers		Operations and Maintenance	
	Las Virgenes Municipal Water District	Triunfo Sanitation District	Las Virgenes Municipal Water District	Triunfo Sanitation District
Due to (from) Participants - July 1, 2014	$ 527,350	$ 19,083	$ 2,319,846	$ 1,061,709
Advance from participants	-	250,272	8,627,996	4,933,820
Interfund activities with participants	-	-	-	-
Constructions costs allocated	(190,136)	(79,179)	-	-
Change in fair market value of LAIF	1,317	328	-	-
Change in fair market value of LAIF - Prior year	(1,422)	(281)	-	-
Billings to participants for operating expenses	-	-	(8,627,996)	(4,307,278)
Billings to participants from replacement fund interest income	-	-	-	-
Interest income from (to) participants	899	224	-	-
Recycled water billings to Triunfo Sanitation District	-	-	-	(626,542)
Due to (from) Participants - June 30, 2015	338,008	190,447	2,319,846	1,061,709

(Continued)

Las Virgenes-Triunfo Joint Powers Authority
Schedule of Changes in Participants' Advance Accounts (Continued)
For the Years Ended June 30, 2016 and 2015

	Operating Funds			
	Replacement of Capital Assets			
	Las Virgenes Municipal Water District	Triunfo Sanitation District	Total	
			2016	2015
Due to (from) Participants - July 1, 2015	$ 992,546	$ 1,049,563	$ 5,952,119	$ 6,533,985
Advance from participants	1,535,145	796,572	14,480,333	16,629,994
Constructions costs allocated	(1,527,115)	(635,937)	(2,814,137)	(3,656,798)
Change in fair market value of LAIF	-	-	3,143	1,645
Change in fair market value of LAIF - Prior year	-	-	(1,645)	(1,703)
Grant income	27,489	11,447	38,936	-
Other miscellaneous income	42,763	17,808	421,402	-
Billings to participants for operating expenses	-	-	(11,547,614)	(12,935,275)
Billings to participants from replacement fund interest income	3,487	3,748	7,235	5,689
Interest income from (to) participants	-	-	1,084	1,123
Adjustment billing to participants for operating fund	-	-	(222)	-
Recycled water billings to Triunfo Sanitation District	-	-	(728,937)	(626,542)
Due to (from) Participants - June 30, 2016	$ 1,074,315	$ 1,243,201	$ 5,811,697	$ 5,952,119

(Concluded)

	Operating Funds			
	Replacement of Capital Assets			
	Las Virgenes Municipal Water District	Triunfo Sanitation District	Total	
			2015	2014
Due to (from) Participants - July 1, 2014	$ 1,800,778	$ 805,219	$ 6,533,985	$ 6,648,335
Advance from participants	1,579,874	1,238,032	16,629,994	18,095,923
Interfund activities with participants	-	-	-	839,098
Constructions costs allocated	(2,391,563)	(995,920)	(3,656,798)	(6,176,993)
Change in fair market value of LAIF	-	-	1,645	-
Change in fair market value of LAIF - Prior year	-	-	(1,703)	-
Billings to participants for operating expenses	-	-	(12,935,274)	(12,042,024)
Billings to participants from replacement fund interest income	3,457	2,232	5,689	4,732
Interest income from (to) participants	-	-	1,123	4,012
Recycled water billings to Triunfo Sanitation District	-	-	(626,542)	(839,098)
Due to (from) Participants - June 30, 2015	992,546	1,049,563	5,952,119	6,533,985

(Concluded)

December 5, 2016 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : Tapia Water Reclamation Facility Secondary Influent Slide Gates Replacement: Final Acceptance

The Las Virgenes-Triunfo Joint Powers Authority approved funding for this matter in the Joint Powers Authority Budget.

SUMMARY:

On May 11, 2016, the JPA Board awarded the Tapia Water Reclamation Facility Secondary Influent Slide Gates Replacement Project to ARB, Inc., in the amount of $393,893. The project consisted of replacing 27 existing, deteriorated influent gates to the secondary treatment process with new stainless steel models. The work has been completed, and there are no outstanding issues to prevent acceptance of the project. As a result, it is appropriate to file the Notice of Completion and release the retention as stipulated in the contract documents.

RECOMMENDATION(S):

Approve the execution of a Notice of Completion and have the same recorded, and in the absence of claims from subcontractors and others, release the retention, in the amount of $19,694.65, within 30 calendar days after filing the Notice of Completion for the Tapia Water Reclamation Facility Secondary Influent Slide Gates Replacement Project.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of construction was $393,893, which is allocated 70.6% to LVMWD and 29.4% to Triunfo Sanitation District. Sufficient funds for the project were included in the adopted Fiscal Year 2016-2017 JPA Budget under CIP No. 10513. No additional appropriation is required.

DISCUSSION:

This project was a continuation of the Tapia Sluice Gate and Drive Replacement Project. The work involved the replacement of the remaining 27 deteriorated influent gates to the secondary treatment process with new stainless steel gates. In order to complete the work, the contractor was required to bypass flows to maintain the continuous operation of the plant during construction. The project was completed on-schedule and on-budget.

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
City & State Zip 4232 Las Virgenes Road
Calabasas, CA 91302

T 420 LEGAL (9-94)

SPACE ABOVE THIS LINE FOR RECORDER'S USE

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).
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:

Names	Addresses
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"):

Names	Addresses
N/A	

7. A work of improvement on the property hereinafter described was completed on November 8, 2016 (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 _____ (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 N/A, County of Los Angeles, State of California, and is described as follows: Tapia Water Reclamation Facility Secondary Influent Slide Gates Replacement 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: December 5, 2016, _____.

Las Virgenes Municipal Water District

_____ (SIGNATURE)

Charles P. Caspary, 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 5th day of December, 2016.

_____ (SIGNATURE)
Charles P. Caspary, Secretary of the Board

December 5, 2016 JPA Board Meeting

TO: JPA Board of Directors

FROM: General Manager

Subject : Pure Water Project Las Virgenes-Triunfo: Reschedule Special Board Workshop

SUMMARY:

The JPA Board scheduled a special meeting on January 19, 2017 for a workshop to discuss institutional issues related to the Pure Water Project Las Virgenes-Triunfo; however, the date conflicts with the California Association of Sanitation Agencies (CASA) Winter Conference. Staff recommends that the JPA Board select an alternate date for the workshop.

RECOMMENDATION(S):

Reschedule the special JPA Board meeting for a workshop to discuss institutional issues related to the Pure Water Project Las Virgenes-Triunfo.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

DISCUSSION:

On November 5, 2016, the JPA Board scheduled a special meeting on January 19, 2017 for a workshop to discuss institutional issues related to the Pure Water Project Las Virgenes-Triunfo. It has since come to staff's attention that the date conflicts with the California Association of Sanitation Agencies (CASA) Winter Conference, which several JPA Board Members plan to attend. As a result, staff recommends that the JPA Board select an alternate date for the workshop.

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

December 5, 2016 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : Pure Water Project Las Virgenes-Triunfo: Award of Preliminary Design and Environmental Review for Demonstration Project

SUMMARY:

On September 6, 2016, the JPA Board authorized staff to issue a Request for Proposals for the preliminary design and environmental review of a demonstration project for the Pure Water Project Las Virgenes-Triunfo. The scope of work generally consisted of the following items:

- Scoping the demonstration project, including making recommendations for the capacity, size and layout of treatment modules considering: future regulatory compliance for surface water augmentation; current standards or regulations for demonstration projects; suitability for public outreach, public tours and education; operator exposure to the treatment processes; and potential pre-qualification of treatment processes.

- Preparing preliminary layouts and/or concepts for the conversion of portions of Building No. 1 to house the demonstration project and serve as a learning center/assembly room.

- Providing a discussion of the options for procurement and construction of the facilities considering leasing, design-build and design-bid-build.

- Conducting the required CEQA/NEPA analyses and preparing the appropriate environmental document(s) for the proposed project.

- Developing a project schedule indicating major milestones and providing an Engineer's Estimate for the demonstration project.

Four proposals were received and reviewed by LVMWD and Triunfo Sanitation District staff. Based on the proposed scope of work, project understanding, experience, and fee proposal, staff recommends accepting the proposal from CDM Smith, in the amount of $142,487, which includes an optional task of preparing an initial study/negative declaration to comply with CEQA/NEPA, if needed.

RECOMMENDATION(S):

Accept the proposal from CDM Smith, in the amount of $142,487, and authorize the Administering Agent/General Manager to execute a professional services agreement for the preliminary design and environmental review of a demonstration project for the Pure Water

Project Las Virgenes-Triunfo.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

Sufficient funds are available in the adopted Fiscal Year 2016-17 JPA Budget for this work. A budget of $1,750,000 is provided for the Pure Water Project under CIP No. 10587, which is allocated 70.6% to LVMWD and 29.4% to Triunfo Sanitation District. As shown in the table below, a total of $885,276 would be committed to date with the Board's acceptance of this proposal. No additional appropriation is required.

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
Financial Consultant (The PFM Group)	$ 30,000
LADWP Contribution	$ (62,370)
Demo Project Preliminary Design (CDM Smith)	$ 142,487
Total	$ **885,276**

DISCUSSION:

Background:

On August 1, 2016, the JPA Board directed staff to develop the next steps for the Pure Water Project. The next 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 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 following discussion provides an update for each of the categories.

Funding and Financing:

The Plan of Action included an activity to engage a financial consultant to help identify potential funding sources and financing strategies. Staff solicited a proposal from The PFM Group to prepare a report summarizing the various state, federal and private funding options available.

The report will also present best case and worst case funding scenarios and the potential impact of the scenarios on the retail rate structures of each JPA partner. The PFM Group's study will be presented to the Board at the January 3, 2017 meeting.

The U.S. Bureau of Reclamation recently announced a grant opportunity for Water Recycling and Water Reuse Research under the Title XVI Water Reclamation and Reuse Program for Fiscal Year 2017. The grant program could provide up to $300,000 for the demonstration project, and the application is due by February 6, 2017. Staff proposes to request that CDM Smith provide a fee proposal to assist the JPA with preparation of a grant application as a part of the preliminary design of the demonstration project.

Advocacy:

On August 1, 2016, the JPA Board engaged Best, Best and Krieger (BB&K) to provide advocacy services at both the state and federal level. BB&K is recommending that the JPA senior staff and Board Members, representing both LVMWD and Triunfo Sanitation District, make a visit to Washington D.C. to discuss the Pure Water Project with elected officials and agency staff members. The visit is tentatively scheduled for the week of March 6, 2017, which is immediately following the ACWA 2017 Washington D.C. Conference.

Technical Studies:

Draft surface water augmentation regulations are still being developed by the State Water Resources Control Board (SWRCB) and expected to be completed by the December 31, 2016 statuatory deadline. Preliminary draft regulations and input from an expert panel organized by the National Water Research Institute are available and not likely to be substantially different from those to be released by year end. It is critical that the Pure Water Project comply with these regulations, so the initial focus will be on studies needed to support regulatory compliance, in particular, diffusion of advanced purified water in Las Virgenes Reservoir. These studies will include a bathymetric survey and hydrodynamic model of the reservoir. As authorized by the Board, staff issued a Request for Proposals for a mixing and dilution study of Las Virgenes Reservoir. A recommendation to select a consultant will be made to the Board in February 2017.

Outreach:

Katz & Associates began preparing a communication plan and “leave behind” for elected officials at the federal, state and local level. In addition, key messages or talking points are being developed, so staff and Board members can utilize them when discussing the Pure Water Project with stakeholders and others. Following are the draft top three messages:

1. 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.

2. Safe using Proven Technology: 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.

3. Affordable and Cost-Effective: The new supply of water will be cost-effective with costs

competitive with those projected for imported water supplies over the long term.

The communication plan, draft "leave behind" and key messages will be shared with the Board at the January or February meeting.

Demonstration Project:

Most agencies that have undertaken indirect potable reuse projects have constructed and operated a pilot or demonstration project. These projects, which can vary in size, generally serve three goals: public outreach and acceptance, treatment technique validation and operator training. Staff recommends that the JPA move forward with a demonstration project sized to allow the use of full-scale treatment components. The current thinking is to construct the demonstration project inside the old LVMWD headquarters building where the adjacent space (former Board room) can be easily converted to a "learning" center for public outreach events. On September 6, 2016, the Board authorized staff to issue a Request for Proposals for the preliminary design and environmental review of a demonstration project for the Pure Water Project Las Virgenes-Triunfo. The scope of work generally consisted of the following items:

- Scoping the demonstration project, including making recommendations for the capacity, size and layout of treatment modules considering: future regulatory compliance for surface water augmentation; current standards or regulations for demonstration projects; suitability for public outreach, public tours and education; operator exposure to the treatment processes; and potential pre-qualification of treatment processes.

- Preparing preliminary layouts and/or concepts for the conversion of portions of Building No. 1 to house the demonstration project and serve as a learning center/assembly room.

- Providing a discussion of the options for procurement and construction of the facilities considering leasing, design-build and design-bid-build.

- Conducting the required CEQA/NEPA analyses and preparing the appropriate environmental document(s) for the proposed project.

- Developing a project schedule indicating major milestones and providing an Engineer's Estimate for the demonstration project.

As summarized in the table below, four proposals were received. Based on the proposed scope of work, project understanding, experience and fee proposal, staff recommends accepting the proposal CDM Smith, in the amount of $142,487, which includes an optional task of $42,661 for preparing an initial study/negative declaration to comply with CEQA/NEPA, if needed.

Firm		Cost	Completion Date
CDM	$	142,487	April 2017
AECOM	$	178,017	Not Included
MWH	$	179,996	May 2017
PACE	$	327,016	April 2017

Environmental Analysis:

One of the first considerations to begin the environmental analysis is to narrow down the potential sites where the advanced water treatment facility could be constructed. To accomplish this task, staff issued a Request for Proposals for a preliminary siting study. The intent of the siting study is not to recommend a preferred site, but rather to define the universe of possibilities and identify, list, compare and contrast the pros and cons of the various sites. When reviewing the various sites, consideration will be given to the proximity of the site to existing recycled water infrastructure, the Salinity Management and 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 consider short- and long-term impacts to residents and businesses, new infrastructure cost and pipeline alignments. A recommendation to select a consultant for this work will be presented to the Board in February 2017.

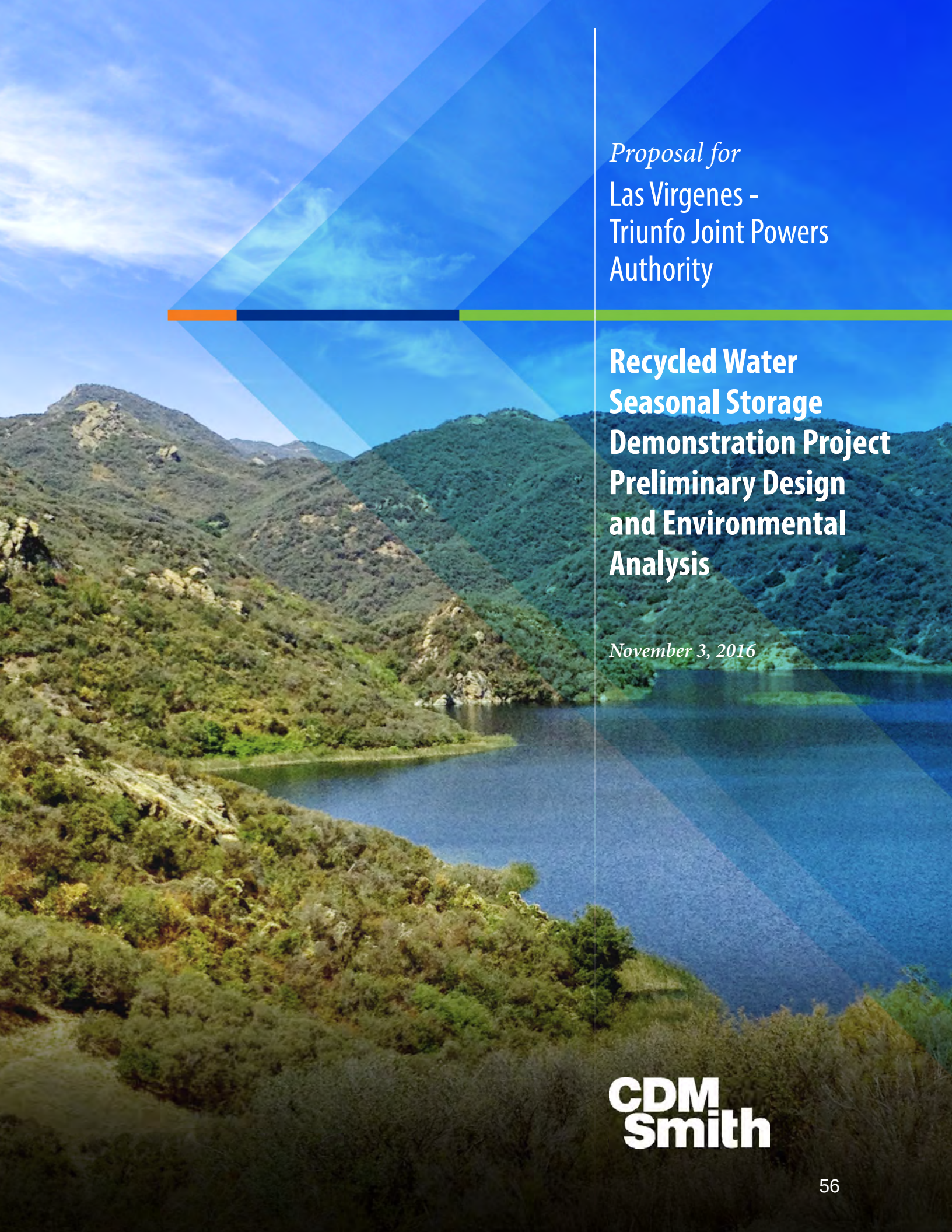
Potential Institutional Issues:

On October 5, 2016, staff presented the Board with a list of potential institutional issues for further consideration. At that meeting, the Board requested that the discussion of the issues take place at a special workshop in mid- to late-January. A special Board workshop was scheduled for January 19, 2017; however, it needs to be rescheduled due to a conflict with the CASA Winter Conference.

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

ATTACHMENTS:

CDM Smith Proposal (w/o Fee)
CDM Smith Fee Proposal



Proposal for

Las Virgenes - Triunfo Joint Powers Authority

Recycled Water Seasonal Storage Demonstration Project Preliminary Design and Environmental Analysis

November 3, 2016

CDM Smith

600 Wilshire Boulevard, Suite 750
Los Angeles, California 90017
tel: 213 457-2200
fax: 213 627-8295

November 3, 2016

Mr. David R. Lippman, PE
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302

Subject: Recycled Water Seasonal Storage Demonstration Project Preliminary Design and Environmental Analysis

Dear Mr. Lippman:

Faced with increasing regulatory and environmental requirements regarding its seasonal stream discharges to Malibu Creek, and concurrently dealing with imported water supplies that have become less reliable and more expensive, the Las Virgenes –Triunfo Joint Powers Authority (JPA) has made an insightful decision to proceed with an indirect potable reuse (IPR) option. This option would involve the seasonal advanced treatment of discharges from the Tapia WRF when current recycled water demands are low. This decision not only ends discharges to Malibu Creek, but also improves the water supply reliability for local customers.

The next step in moving this solution forward is to perform preliminary design and complete the environmental analyses for a demonstration project, whose primary purpose is to help develop public support for and acceptance of this safe and reliable component to the water supply portfolio. To accomplish this, CDM Smith's team is comprised of advanced treatment and reuse specialists and pilot plant designers who have worked together for over a decade, successfully shepherded the region's most important potable reuse projects from concept through full-scale implementation. This provides the JPA the opportunity to utilize the knowledge gained from our award-winning IPR programs to developing and advancing its own IPR projects.

Bruce Chalmers will lead the CDM Smith team as project manager. He has more than 36 years of experience managing the planning, design, and construction of water storage, distribution facilities, and IPR treatment systems. He led the early planning studies for the $485 million, 70-million gallons per day Groundwater Replenishment System – the largest recycled water project in the world. He has led the design of numerous other IPR pilot and full-scale projects, in addition to authoring more than 25 papers on IPR and treatment. With this experience, the JPA demonstration project will not only support its public education objectives, but also provide opportunities to evaluate nuances of the full-scale project that could save significant costs going forward. These opportunities are discussed in detail in our proposal.

We appreciate this opportunity to submit our proposal to the JPA for this important project and look forward to discussing our proposal with you in greater detail at your convenience. If you have any questions, please contact me at (213) 457-2139 or via email at ebersolddb@cdmsmith.com.

Sincerely,

David B. Ebersold
Vice President
CDM Smith Inc.

1. Legal Name of Firm

CDM Smith Inc.

600 Wilshire Boulevard, Suite 750
Los Angeles, CA 90017

Phone: (213) 457-2200

Principal: David B. Ebersold, Vice President
Project Manager: Bruce Chalmers, Vice President

2. Project Understanding and Approach

Project Understanding

The Tapia Water Reclamation Facility (WRF) currently and consistently (excepting during winter storm events) produces about 9.5 to 10 mgd of high quality recycled water. Recognizing the importance of this water to the area's water supply portfolio, the Las Virgenes –Triunfo Joint Powers Authority (JPA) maintains an extensive recycled water distribution system. However, as is typical for "purple pipe" systems that rely heavily on irrigation customers, the demands for this recycled water vary seasonally. In the summer, the JPA must supplement its recycled supplies from other sources to meet demands, and in the winter nearly all flows are discharged to Malibu Creek.

With increasing regulatory and environmental requirements, continued seasonal stream discharges to Malibu Creek are becoming increasingly problematic. Concurrently, imported water supplies, which meet about 80 percent of Las Virgenes Municipal Water District's annual demands, are becoming less reliable and ever more expensive. This same trend has led many of our clients to develop projects to increase the reuse of their local resources. The JPA is no exception and, in fact, has been considering the seasonal storage of recycled water as far back as its 1973 Recycled Water Master Plan.

More recently, in June 2014, the JPA Board of Directors (Board) adopted a set of guiding principles that provided a framework for considering opportunities to maximize beneficial reuse. Six different scenarios were evaluated, and after substantial analysis, stakeholder input and Board consideration, the JPA has decided to proceed with an indirect potable reuse (IPR) option. Simply described, this option would involve the seasonal advanced treatment of discharges from the Tapia WRF when current recycled water demands are low. This advanced treated water would be conveyed to Las Virgenes Reservoir where it would mix and be stored with imported supplies.

IPR, especially involving the use of groundwater basins, is a proven, safe, and publicly accepted component of many agency's water supply portfolios, especially in southern California. West Basin Municipal Water District, the Water Replenishment District of Southern California, Orange County Water District, and Cambria all have full scale IPR projects in operation that were designed by CDM Smith. Others, including the City of Los Angeles and City of San Diego, are deep into planning or design, with pilot/demonstration testing performed by CDM Smith. In considering the JPA's objective to maximize beneficial reuse via surface water IPR, we believe it is imperative to develop a sustainable approach for a seasonally operated IPR facility. Sustainable in this context means protective of public health, accepted by both the public and regulators, and cost effective for seasonal operation. Our technical approach, described below, is designed specifically to accomplish this objective.

Project Approach

Our approach for JPA's IPR Demonstration Project centers around the fact that this demonstration plant preliminary design work is the next task of a multi-phased project to implement a recycled water facility that eliminates winter discharges to Malibu Creek and adds another source to the District's potable water portfolio. The project is unique in that it will be one of the first seasonally operated IPR

facilities as well as one of the first reservoir augmentation projects in the state. CDM Smith will use our experience on similar projects to successfully define and solve the issues that must be addressed to plan for the design, construction, and operation of the Demonstration Project to help the JPA implement this next step. The Demonstration Project also provides the opportunity to obtain important information that can be leveraged in the planning and design of the full scale facility.

Major issues identified for successfully implementing this project include:

- Designing the demo plant to meet the anticipated regulatory requirements for surface water augmentation
- Providing demonstration plant systems that prove the process safety and reliability, while providing operational data and support for regulatory acceptance and assistance in public outreach efforts.
- Developing a plan to prepare documents to successfully construct the demonstration plant that incorporates the most cost effective method for procurement of both the temporary and the permanent process systems, addressing the challenges of seasonal operation at the full-scale facility.
- Providing CEQA/NEPA documentation support for obtaining environmental approval for the demonstration project.

Demonstration Plant Design

The design of the Demonstration Project must be planned to answer all of the major questions that need to be addressed prior to the design of a full size plant, including defining the complete process train, addressing disinfection byproduct formation, and establishing design criteria for the various unit processes. It is expected that the surface water augmentation regulations will require both reverse osmosis (RO) and an advanced oxidation process (AOP), similar to the Groundwater Recharge Reuse Regulations, finalized in 2014. Beyond these core treatment processes, microfiltration (MF) or ultrafiltration (UF) is generally provided as pretreatment for the RO and as an additional pathogen barrier.

The San Diego Pure Water Project, in addition to these processes, is also planning to employ ozone and biological filtration as pretreatment for their reservoir augmentation program. They have found that these additional pretreatment steps can allow for a more aggressive MF system design, however, the energy requirement for the ozone adds substantially to the operating cost of the facility, and the ozone has been shown to increase the formation of disinfection byproducts, such as bromate and n-nitrosodimethylamine (NDMA). Similarly, the Padre Dam reservoir augmentation project has been utilizing free chlorination as pretreatment to their MF, achieving additional pathogen barriers but also increasing the formation of trihalomethanes (THMs) and haloacetic acids (HAAs). A third alternative, utilized by CDM Smith for the Cambria Sustainable Water Supply, is the use of post-RO free chlorine disinfection, which has allowed for additional pathogen destruction without the formation of disinfection by-products. CDM Smith has also evaluated alternative AOP approaches downstream of RO, such as UV/chlorine, ozone, and ozone/peroxide, each carrying different advantages and challenges for consideration at the demonstration facility.

The high quality of the Tapia WRF effluent, and the expected large residence time in the Las Virgenes Reservoir, could allow a high degree of flexibility in the treatment processes that are employed. The Demonstration Project should therefore focus on optimizing the primary treatment steps, UF and RO, while evaluating alternative AOPs that are less costly than the standard UV/peroxide used for most groundwater replenishment projects.

Plant Capacity and Sizing

The size of a demonstration test is always an important element when designing a temporary system since it impacts the cost of testing, the quality of the data, and the ease of scale-up to a full size facility. While RO will likely be the core treatment process for this facility, it will also be the process most likely to determine the facility sizing. With a targeted RO recovery of 85 percent, utilizing standard 8-inch elements would require a minimum plant production capacity of 100,000 gallons per day. Testing alternative process trains, prequalifying membranes, or evaluating higher RO recoveries could require a larger capacity system, for example between 200,000 and 250,000 gallons per day. The recommended size of the facility will therefore depend on the ultimate goals to be accomplished with the demonstration testing. At the start of the project, CDM Smith will work with the JPA to evaluate these opportunities and determine the most appropriate demonstration plant size.

Process Treatment Train Flexibility and Optimization

With technologies in advanced water treatment continuing to evolve, it is important that the facility design be optimized to provide flexibility to take advantage of continuing developments in the industry. Alternatives to investigate as part of the Demonstration Plant include the incorporation of a semi-universal UF system, variability in RO flux, alternative AOPs, disinfection byproduct control, reduction of waste flows, and product water stabilization.

Semi-Universal Standardized UF System

A challenge associated with the design of membrane filtration facilities has been the need to pre-select systems before commencing final facility designs, due to the proprietary nature of the competing membrane filtration systems. It is common for membrane selection to be completed during the demonstration testing or preliminary design phase, with the final design completed to integrate plant facilities with the selected membrane filtration system. Three manufacturers currently supply most of the municipal membrane filtration systems in the United States, including Evoqua (formerly Siemens/Memcor), Pall Corporation, and GE/Zenon. Membrane modules and overall system configurations from these three manufacturers have not been compatible with each other due to differences in membrane module configurations, dimensions, piping, and flow configurations.

CDM Smith employed a semi-universal UF skid design for the San Diego Demonstration Plant to allow testing of alternative membranes on a single skid

This proprietary system approach, although implemented successfully by CDM Smith on many reuse projects such as the Groundwater Replenishment System (GWRS), Leo J. Vander Lans Water Treatment Facility (Vander Lans WTF), and Edward C. Little Water Recycling Facility (West Basin), can make membrane module replacement or expansion negotiations difficult and more costly than when directly competing alternative membrane options.

CDM Smith has been a pioneer in implementing a semi-universal membrane filtration skid approach, which allows membranes from multiple vendors to be utilized on the same UF skid. We have successfully employed such systems for projects in San Diego, Carlsbad, Ft. Irwin, and Cambria, and have helped push the industry toward greater standardization. Today all three of the major membrane suppliers, along with alternative suppliers such as Toray, Dow, and Hydranautics, are selling membranes that can be incorporated into a universal skid design, allowing facility designs to be completed before the final selection of the membrane supplier is made. This has allowed more competitive bidding and greater flexibility for facility operation.

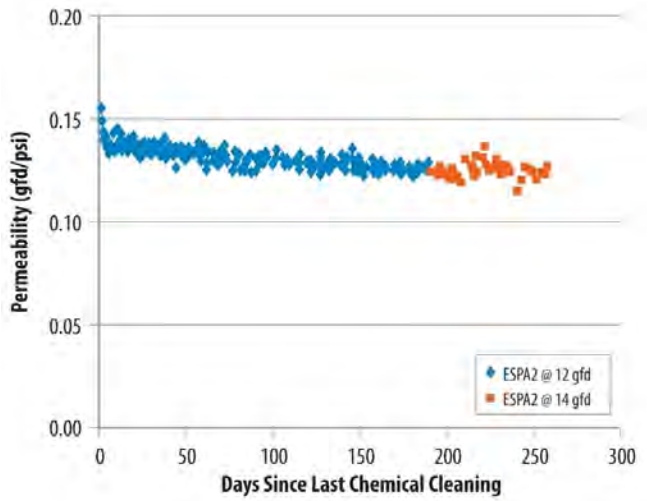
For the Demonstration Project, we believe the use of a semi-universal membrane skid would provide an opportunity to directly test alternative membranes side-by-side, facilitating pre-approval of acceptable membranes for use in the future full-scale facility.

Optimizing RO Flux

Since the original RO membranes came into existence and were implemented on wastewater reclamation facilities, the design flux rates or amount of flow per unit area of membrane (gallons per day per square feet (gfd) have been trending upward, which reduces the number of membranes required. In the early 1990s, studies showed that with MF/UF pretreatment the flux rates for wastewater RO membranes were most balanced around 10 gfd and that the maximum sustainable flux was around 12 to 12.5 gfd. MF/UF technology has improved and the knowledge of how to maintain membrane integrity has allowed for RO flux rates to be increased. Flux rates are now commonly around 12 gfd for most new wastewater RO facilities. The Vander Lans WTF—designed by CDM Smith—is operating successfully with a flux of 12.2 gfd and the Cambria Sustainable Water Supply is operating at 14 gfd.

Other pilot tests conducted by CDM Smith and by the Los Angeles County Sanitation Districts have demonstrated stable and sometimes improved RO performance when operating at fluxes of 12 gfd and higher. The figure above presents data from the 1 mgd San Diego Demonstration facility, showing stable RO performance at both 12 and 14 gfd operation. The information gained from this testing, and from existing facilities operating at elevated fluxes, has shown that a significant reduction in equipment and membrane area could be gained by increasing the flux rates to between 13 and 14 gfd, without negatively impacting membrane fouling rates.

RO Permeability with Varying Flux



CDM Smith demonstrated at the San Diego North City WRP that reliable operation of the RO units could be maintained at 14 gfd average flux without impacting the rate of fouling on the membranes.

Alternative AOPs

The effluent from the Tapia WRF is a high quality source water for an advanced treatment facility, allowing treatment opportunities that would not be available to plants treating a more challenging supply. The low ammonia levels from the nitrified and denitrified source provides an opportunity to use breakpoint chlorination for an additional level of virus inactivation and potentially for the application of UV/chlorine in place of UV/peroxide. CDM Smith conducted the first full-scale testing of UV/chlorine at the Vander Lans WTF, demonstrating its ability to achieve the required level of 1,4-dioxane destruction at less than half the combined dose of oxidant and UV, compared with UV/peroxide. Utilizing a UV/chlorine approach at the Demonstration Plant, could allow for a significant reduction in UV unit sizing at the future full-scale plant, reducing both the capital and operating cost of the facility. In addition, post-RO ozonation could also be employed to achieve 1,4-dioxane reduction at an even lower cost, if other means are employed for reduction of NDMA. This alternative is discussed briefly below in regards to disinfection by-product control.

Disinfection Byproduct Control

With the future AWT Plant potentially pulling water from the reclaimed water distribution system, downstream of existing storage tanks, there is a concern that elevated levels of NDMA will be present in the source water. NDMA has a notification level of 10 ng/L, and is often present at levels ranging from 30 to 1,000 ng/L in reclaimed water distribution systems. NDMA can be controlled by reducing the chloramine contact time, however, this alternative is generally not available to plants fed from an existing distribution network. When NDMA formation cannot be controlled, it must be removed using high doses of UV after the RO. For the Vander Lans WTF, which pulls nitrified-denitrified water from a reclaimed water distribution system, similar to the intended approach for the JPA's facility, a UV dose more than double the dose used at the Orange County GWRS is applied to address the elevated levels of NDMA in the source water.

A unique opportunity for NDMA control at the JPA's future AWT facility is to consider the residence time of the water in the Las Virgenes Reservoir, where extended exposure to sunlight should be expected to naturally degrade residual NDMA in the water. While no existing facilities have been given credit for natural degradation of NDMA, testing was conducted by CDM Smith at the GWRS facility after startup, storing treated water in open basins. The results demonstrated a relatively rapid breakdown of NDMA from sunlight. It could be extremely beneficial to conduct similar testing at the Demonstration Facility to provide baseline data for future regulatory approval of NDMA reduction credits within the Las Virgenes Reservoir. Such approval could allow for a reduced UV dose or the use of post-RO ozone, providing significant savings in both capital and operating costs for the future full-scale facility.

The brine recovery system for the Vander Lans WTF has been operating for two years achieving 92.5% RO recovery.

Reduction of Waste Flows

Waste stream management is critical for the successful implementation of an AWTF using membrane processes. The MF backwash can be returned back into the sewer, but adequate sewer capacity must be available in the area where the AWTF will be constructed. The JPA is fortunate in that a local brine line discharge opportunity is available for disposing of the RO brine, although a long pipeline is still required to connect. Because brine disposal costs are expected to be high, there could be an economic advantage in increasing the recovery of the RO beyond

the 85 percent currently planned. When faced with sewer flow limitations for its recent plant expansion, the Vander Lans WTF installed three secondary RO trains, which allow RO recoveries to achieve 92.5 percent. While initial pilot testing with 4-inch RO elements had suggested the secondary RO membrane would require cleaning every 2-3 weeks, full-scale operation has been far most stable, with the first chemical cleaning conducted two years after the plant expansion.

The JPA's Demonstration Project can provide an opportunity to evaluate a similar approach to brine recovery, demonstrating both stable plant operation and acceptable water quality at recoveries above 92 percent.

Product Water Stabilization

Product water stabilization is required to reduce the risk of corrosion in the transmission lines after treatment. Both hardness and alkalinity will need to be introduced to create a Langelier Saturation Index (LSI) above -0.5. The Vander Lans WTF, designed by CDM Smith, has successfully employed a liquid feed system with calcium chloride and sodium hydroxide, though these systems have a higher operating cost than a lime feed system as employed at GWRS. With a 6 mgd ultimate capacity, the liquid feed system is a realistic stabilization approach, in spite of the slightly higher operating cost. The Demonstration Plant should include bench testing and desktop modeling to confirm the calcium chloride and caustic doses required to achieve stabilization goals.

Power Requirements

Having adequate power available to operate the demonstration plant is important since the facility will likely require more power than the existing building alone. 480 Volt power will be required for any pumps over about ½ horsepower. Pumps will be required for the RO and UV systems as well as smaller chemical pumps. It is possible that the MF system can operate off residual pressure from the reclaimed water influent pipeline. A pump would also be required to pump the reblended effluent back into the reclaimed waterline unless the discharge is returned to the sewer. CDM Smith will identify the power requirements for the demonstration plant, evaluate the existing building's capacity to meet these requirements, and incorporate required upgrades into the preliminary design.

Demonstration Plant Purpose and Objectives

The primary propose of the Demonstration Project is to prove to regulators and the public that the processes that will be used to treat the water will be reliable and protective of public health. As part of this effort, the facility will need to develop data to support approval by the regulatory agencies, give direct operational experience to the plant operators, and provide a critical tool to public outreach efforts by the JPA. CDM Smith has experience in facilitating pilot and demonstration projects that have successfully met all of these critical purposes. Each purpose and objective will be discussed in detail below.

CDM Smith-designed demonstration project at San Diego includes education signs for public tours, to aid in building public support.

Safety and Long Term Reliability

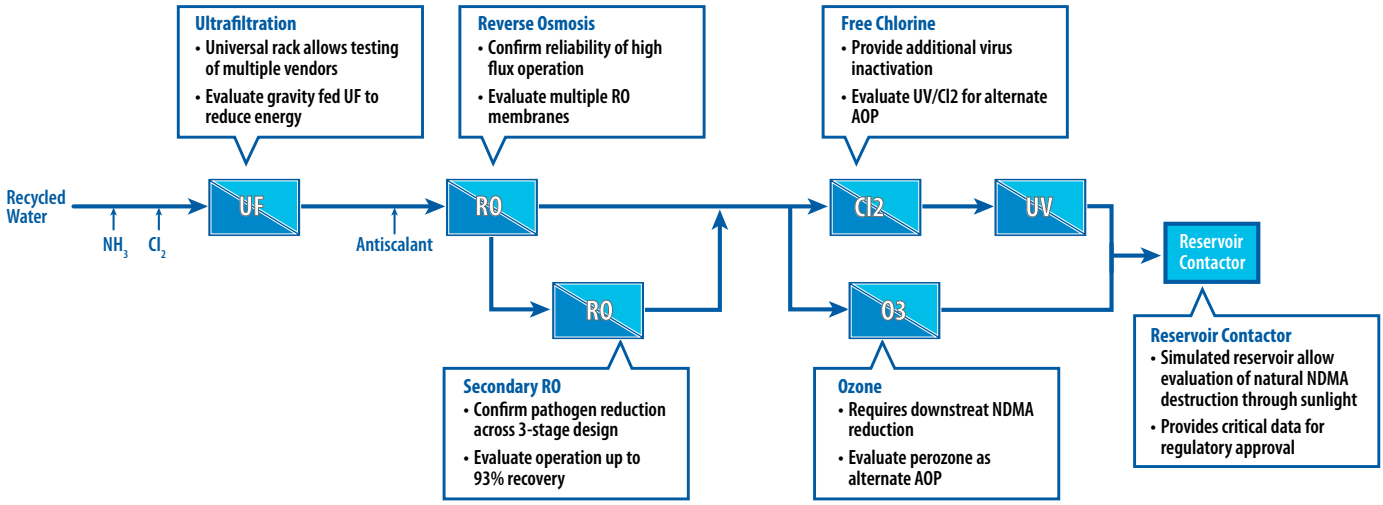
Public safety and long term reliability are an essential parts of the Recycled Water Seasonal Storage Demonstration Plant project. These attributes include both the physical aspects of the demonstration plant itself as well as the water quality impacts of using the treated water.

Safety

Plant safety should be designed into the Demonstration Project. Safety includes producing a product water that is safe for the public consumption as well as having the demonstration plant be a safe place for public tours and viewing.

The Demonstration Project must show the public that the product water that will be produced in the future AWTF and discharged into the Las Virgenes Reservoir is safe for both the public and the environment. The water quality testing protocols should be set up to monitor the right constituents that will prove to the regulators that the reuse project will provide the same level of safety to the public as alternative sources.

Safety features for the demonstration plant itself include keeping chemicals and pumps away from the public tour



Process selection for the demonstration plant should center around Full Advanced Treatment, incorporating opportunities to reduce cost for the seasonally operated facility.

route, providing adequate clearances for maintenance, and meeting code requirements. Walkways should be clearly marked, barriers provided where public access is not allowed, and tripping hazards should be eliminated everywhere. Proper containment/separation should be required for the process chemicals and safety labeling should be provided on all tanks and piping.

Reliability

Reliability includes both consistent treatment results as well as continued operation during periodic equipment breakdowns or failures. The reliability of producing consistent treatment results will need to be shown as part of the demonstration testing and proven by the water quality sampling. Varying effluent water quality results would not provide the project definitive proof for either the regulators or the public. The demonstration testing protocols should be set up to gather the proper information. The processes and equipment should be selected to have the quality and reliability to prove that the treatment works as planned and required.

Ease of Maintenance

To be adequately maintained and work reliably, the demonstration plant and future AWTF must be designed to be maintenance-friendly and include adequate space around equipment and piping for easy access during routine maintenance and repairs. Equipment should be standardized and interchangeable where possible, which will reduce the future storage space and cost required for spare parts inventory for the full size plant. Operators should be familiar with the type of equipment used or proposed so that repairs will be done correctly and make operator training less arduous. Familiarization also increases the likelihood that repairs will be performed correctly the first time.

Demonstration Plant Layout

Designed by CDM Smith, the San Diego Demonstration Facility has set the standard for AWT demonstration projects, especially for its role in building project support and transforming public opinion. The JPA Demonstration Plant will need to include flexibility to conduct all testing required for regulatory approval and evaluation of the treatment technologies. One potential process train is shown on the figure above, incorporating the primary train of MF-RO-UV, but also including an option of secondary RO to reduce brine flows, free chlorine for virus inactivation and testing of UV/Cl2, ozone as a lower cost alternative AOP, and a downstream reservoir contactor to evaluate sunlight degradation of NDMA. While the testing conducted at the facility will be critical, the layout must also address the need to build public support through tours and education.

Public education will need to be supported from the time a visitor enters the building to the time they leave. The path of the tour route should be painted to guide participants' through the experience. Use of paint colors such as purple to blue to white symbolize how the water quality is getting better as the result of the treatment. The tour will start in the assembly room and pass each major treatment process in order of how the water is treated, from UF to RO to UV. Chemicals should be located off of the tour route for safety. Interpretative banners that include process names, flow arrows, and brief descriptions have proven more effective than just labeling equipment. Samples of MF and RO membrane modules should be provided as a visual aid that the public can touch and feel. A clean water display is recommended near the UV area with different water types to demonstrate the clean water quality. As with similar facilities, the JPA may also consider incorporating a water

tasting station for the public, as the most commonly asked question after a tour has always been how the water tastes.

Permitting and membrane expert Greg Wetterau conducting public tour at LA's GWR pilot test facility.

Regulatory Acceptance

The Division of Drinking water (DDW) is currently in the process of developing draft regulations for reservoir augmentation using recycled water. These regulations are expected to be released by the end of this year, however, development of the regulations has been an open and transparent process and preliminary information on the regulatory requirements has been provided by DDW at public presentations and through direct discussions with DDW staff. The regulations are expected to build upon the existing Groundwater Replenishment Reuse Regulations, finalized in 2014, and from definitions of terms included in the September 2016 Expert Panel Report on the Feasibility of Direct Potable Reuse. One key component of the surface water augmentation regulations will be the residence time required in order to utilize a similar treatment train to the MF-RO-AOP employed in groundwater replenishment projects.

At this point, DDW staff has indicated that a 4-month average residence time will be required, accounting for all influent into the reservoir, including both recycled water and natural and imported water supplies. Reservoirs with average residence time between 2 and 4 months will require an additional level of treatment for pathogen reduction, as is expected to be required for San Diego's Pure Water program. Due to the size of the Las Virgenes Reservoir, and the historic inflows to the reservoir, it is unlikely that these additional pathogen reduction requirements will be applied, although this will need to be evaluated through the reservoir modeling that is being performed separately. It is therefore likely that the treatment requirements will be similar to those imposed on groundwater replenishment reuse projects, specifically 12-log virus, 10-log Giardia, and 10-log Cryptosporidium. In addition, it is expected that full RO treatment will be required, along with AOP sufficient to achieve 0.5-log reduction of 1,4-dioxane, or other approved surrogate compounds.

The table below presents a potential process train and level of pathogen credits to achieve the expected requirements of the Surface Water Augmentation Regulations. These credits are based on those granted in the permitting of IPR projects for the Water Replenishment District of Southern California and the Cambria Community Services District. It should be noted that this approach does not rely on any pathogen credits from travel time within the reservoir.

Pathogen	WWTP	MF	RO	Free Cl2	UV	Total	Requirement
Cryptosporidium	1	4	2	0	6	13	10
Giardia	2	4	2	0	6	14	10
Virus	2	0	2	6	6	16	12

Potential Pathogen Credits for AWT Process Train

As discussed previously, the reservoir provides an opportunity for natural reduction of NMDA, which may allow for a reduced UV dose or an alternative AOP at the AWTP, reducing both the capital and operating cost of the facility. Because such an approach has not yet been approved by DDW, it would be critical to include any novel means of NDMA reduction and any alternative AOP approach in the Demonstration Plant testing plan.

CDM Smith will work with the District to identify any critical testing needed during the Demonstration Plant operation, as well as any preliminary bench testing or water quality testing that will aid in the selection of a proposed process train for the Demonstration Plant. Some of these tests may include:

- NDMA and nitrosamine formation potential benchtop testing (during Preliminary Design)
- CEC spike testing to assess and optimize AOP performance (during Demonstration Testing)
- Simulated Reservoir degradation of NDMA and nitrosamines through natural sunlight (during Demonstration Testing)

Cost Effective Procurement

The JPA has asked to have the Consultant evaluate different procurement options for the demonstration plant to determine the best method to have the temporary plant designed and constructed. A similar evaluation could also be appropriate for the full size AWTF as well, as discussed below.

Demonstration Plant

The options for demo plant equipment procurement include:

- Leasing
- Design/Bid/Build (DBB)
- Design/Build (DB)

Leasing – For the leasing option, the process systems used would be rented or leased from specific vendors, whether proprietary or not. Leasing is advantageous for short pilot or demonstration programs. Based on previous experience, testing longer than 6 months typically favors purchasing the equipment rather than leasing.

Design/Bid/Build – Using a design/bid/build (DBB) procurement method for the demonstration plant would require that the JPA retain a design firm to take the results of the demonstration plant preliminary design, complete the design, then help the JPA received cost bids for the construction. Operation could be by the design consultant or the contractor depending on JPA preferences. Procurement of the engineering and contractor services separately can lengthen the schedule and can cause conflicts between the two parties. DBB does however, provide the District with more input into the design. The design could include multiple vendors for proprietary systems.

Design/Build – Design/build (DB) combines the design and construction into one contract. A 30 percent procurement "bridging" document, possibly based on the preliminary design prepared for this project, would be used to define the Contractor responsibilities. The Contractor would have the ability as allowed by the bridging documents to select which vendors to install in the demonstration construction. Schedules for DB project can often be shortened due to the elimination of separate engineer and contractor procurement contracts.

Permanent Facilities

Because of the size and complexity of the full-scale permanent AWTF, it is critical to make sure that only proven process systems are installed. The goal of pre-qualification program for the permanent facility's systems is to develop thorough design criteria along with qualifications and experience requirements to be included in a comprehensive procurement strategy. Much of this information would be developed as part of the demonstration testing, including the detailed process requirements and clean-in-place (CIP) procedures. CIP procedures should be optimized to maximize the interval between membrane cleaning.

Since the membrane flux is a major element in determining how much membrane equipment is required for both the MF/UF and the RO systems, optimizing the flux rate for the MF/UF would be demonstrated tested by varying the test flux rates. The RO flux rate requires longer term operation and can't be as easily varied during a demonstration test. CIPs, flux rates and cleaning cycles were all tested at the LADWP and Miami pilot plants, as well as at the San Diego Demonstration Facility. In Miami, only two of the five MF/UF systems tested passed the rigorous testing requirements.

While pre-qualification is recommended for DBB and DB projects, it is only part of system procurement process. Even after pre-qualifying vendors through the demonstration testing, there will still be differences between the qualified vendors that will impact the size, layout and ancillary facilities needed. Determining which proprietary MF/UF systems to include in the full-scale design for example, requires specialized procurement methods to maintain competition between the qualified vendors and provide the necessary information to complete the design as discussed above.

Potential procurement methods for proprietary systems (MF/UF and UV) are shown in the following table should a semi-universal skid design not be implemented for the MF/UF. CDM Smith has had successfully qualified vendors and implemented each type of procurement method for full size facilities, including design/build.

Our Team's successful qualification and proprietary system selection programs have allowed project owners to obtain a firm price for the proprietary equipment and eliminated the owner's risk of schedule delay.

Procurement Type	Advantages	Disadvantages	Implemented by Team
Negotiated	▪ Single system design ▪ Matches existing system	▪ No competition to determine price	▪ GWRS initial expansion ▪ LVLWTF expansion
Owner Prepurchase	▪ Single system design ▪ Life-cycle cost	▪ Owner has schedule/ operation risk	▪ Miami Dade SCVWD
Pre-selection and Assignment	▪ Maintains competition ▪ Single system design ▪ Life-cycle cost	▪ Upfront contract to provide shop drawings	▪ GWRS ▪ Miami Dade ▪ SDWRP

CEQA/NEPA Documentation and Support

CEQA/NEPA documentation is required to implement the Demonstration Project as well as the future Recycled Water Seasonal Storage Program facilities. We have provided environmental permitting support on a number of our IPR projects, most recently for the Water Replenishment District's GRIP project, where we assisted the District's EIR consultant with relevant material concerning the AWTF and associated pipelines. We also prepared environmental documentation (Mitigated Negative Declaration) for the Vander Lans WTF project. Each project achieved full environmental compliance.

Based on the RFP, the CEQA/NEPA documentation is for the Demonstration Project only and is not documentation for the entire Recycled Water Seasonal Storage Program. Since the Demonstration Project is not anticipated to affect federal lands or require federal funding, no NEPA compliance would be required. As the Demonstration Project is expected to modify an existing facility and be temporary in nature, a Categorical Exemption may be the most appropriate CEQA clearance document. In accordance with the State CEQA Guidelines, Section 15301, a Class 1 Categorical Exemption for the minor alternation of existing public or private structures/facilities, involving negligible or no expansion of use can be used for the Demonstration Project.

Management Philosophy

Our project management and delivery approach has three major elements:

1. CDM Smith has a highly experienced project management and technical team;
2. CDM Smith has a well-defined set of responsibilities and clear reporting lines plus the tools to deliver a quality project that meets all of the JPA's needs; and
3. CDM Smith has a delivery plan for on-budget and on schedule performance.

Project Management and Core Team Responsibilities:

CDM Smith's Project Manager, Bruce Chalmers, will be the single point of contact for the JPA for project decisions and contractual matters, placing his focus on critical issues, facilitating decisions and driving the overall schedule and budget. He will lend his extensive experience heading complex projects where meshing multiple priorities and timely completion are critical to the project success. Mr. Chalmers' experience on many large multi-discipline projects, specifically his focus on IPR projects over the past 18 years, has trained him to look forward and "peer around the corner" to identify and prevent potential delay-causing issues. He will oversee the project controls and technical staff that will support Mr. Chalmers in the execution of the work. Mr. Chalmers will seek input from the Project Advisors for technical direction and review as well as QA/QC.

Management Tools

The management tools, procedures, and a delivery plan for the project will be instituted at the beginning of the project that allows for detailed project management information to be contained in one place for the team to reference during project execution. The JPA's input into the plan will be essential to make certain it is effective, adequately used, and meets your needs. The management plan will include: a project schedule; organizational chart; scope, schedule, and budget; communications protocols; monthly reporting formats for progress reports and invoicing; and use of CDM Smith's Standard Quality Management Plan (QMP).

Project Kick-Of Meeting/Project Quality Management

Kick-off Meeting: Upon notice to proceed (NTP), a project kick-off meeting will be held to gather all parties together with a focus on project goals, expectations, working relationships, scope of work, project budgets, and schedule. We use the kick-of meeting format to set the tone for collaboration, respectful input, and information sharing, at the beginning of the project. All key JPA stakeholders and key CDM Smith Team staff will attend the session to discuss project goals and objectives as well as criteria that would make the project a success.

Quality Management: Quality has been, and remains, the cornerstone of CDM Smith's business for more than six decades for all our projects. CDM Smith has developed its own four-tier Quality Management System (QMS) that establishes procedures and controls to successfully deliver high-quality planning, design, and construction projects. This QMS will be used by CDM Smith for this project. Project-specific QA/QC procedures will be documented as required. We have assembled a project advisory committee of senior professionals to perform independent quality reviews of all deliverables prior to their submittal.

Budget: Our delivery approach is focused on meeting or beating the established budgets for the project, while keeping the project on schedule. As we have done on similar southern California IPR projects such as San Diego and LADWP, we will produce a monthly status report that will assess work completed and planned, as well as our budgeted versus billed amounts.

This approach to management and quality will result in a project for the JPA that is implementable, acceptable, and affordable.

3. Scope of Work

For the detailed Scope of Work for this Demonstration Plant Planning project, CDM Smith proposes to use the Scope of Work provided in the Request for Proposals with the additions and clarifications presented in this section.

Task 1 – Preliminary Layouts

The Consultant will prepare preliminary layouts and/or concepts for the conversion of portions of Building No. 1 to house the demonstration project and serve as a learning center/assembly room.

The Consultant will investigate alternative processes for the demonstration plant, including those listed in the Basis of Design Report to recommend which processes should be included in the Preliminary Design (PD). Processes will include but are not limited to microfiltration/ultrafiltration (MF/UF), reverse osmosis (RO), ultraviolet light (UV) disinfection and advanced oxidation (AOP), sodium hypochlorite/ammonia for chloramine addition ahead of the MF/UF product water stabilization, clean in place (CIP) chemicals, hydrogen peroxide and sodium hypochlorite (free chlorine) for AOP, and ozone for disinfection/AOP.

Conceptual layouts and a conceptual process flow diagram for the demonstration plant will be prepared for discussion with the JPA.

Deliverables

- The Consultant will prepare the 11 x 17 size figures for demonstration plant layouts and process flow diagrams. Figures will be revised and submitted as part of Task 2.

Task 2 – Demonstration Facility Preliminary Design

The Consultant will complete the preliminary design of the demonstration plant and building modifications in sufficient detail to conduct the required environmental analyses for compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

The preliminary plans and related design criteria will be combined into a Preliminary Design Memo. The following will be included in the Preliminary Design Memo:

1. Project Description
2. Preliminary Design Criteria
3. Preliminary Plans
4. Regulatory Summary (from Task 5)
5. Procurement Options (from Task 3)
6. Schedule (from Task 6)
7. Estimate of Probable Construction Cost (from Task 11)
8. Environmental Documentation Summary

The Preliminary Design for the Demonstration Project will include the following disciplines: demolition, civil, architectural, structural, process, HVAC, electrical and instrumentation. A title sheet, process flow diagram, process and instrumentation diagrams, a site layout (including equipment layout, piping configurations, and connection points), demolition plan, structural modifications for the building, architectural plan showing what would be required for the Learning Center/Assembly Room, and electrical single line diagram will be included. A maximum of nine (9) drawings are assumed.

The preliminary plans will include conceptual layouts for the following:

- Process system area and access requirements
- Piping and connections
- Power source (s)
- Vehicle access and parking
- Chemical delivery access
- Fire Department access
- Pedestrian access
- Location for the Learning Center

The drawings will be completed to the 30 percent Preliminary Design level and related design criteria will provide enough information for compliance with the CEQA/NEPA documentation. The Consultant will prepare the document in conformance with its established QAQC procedures.

Deliverables

- The Consultant will prepare the Draft and Final Preliminary Design TM.
- The Consultant will respond to comments from the JPA and prepare a comment and response table.
- PDFs and five hard copies of the Preliminary Design TM will be submitted to the JPA.

Task 3 – Procurement Options

The Consultant will evaluate alternative procurement options for procurement and construction of the demonstration plant facilities and summarize the evaluation. Alternatives will include leasing, design-build (DB) and design-bid-build (DBB).

The Consultant will coordinate and request system information from MF and UV Suppliers, including size of demonstration systems, equipment required, design criteria, power needs, tank sizes, chemicals used, lease and purchase costs, delivery time, vendor on-site services, and warranties. A list of successful projects where the vendor's systems have been used on recycled water projects will also be requested. The Consultant will meet with up to 5 MF/UF/UV vendors at the Consultant's offices.

Based on the information provided by the vendors, the Consultant will develop procurement options for leasing, DB and DBB and document the advantages/disadvantages, schedule, and costs

Deliverables

- The results of the procurement option evaluation will be submitted as part of the Task 2 Preliminary Design memo.

Task 4 – CEQA/NEPA Documentation

The Consultant will conduct a California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) analyses and prepare the appropriate environmental document(s) for the proposed demonstration project. The CEQA/NEPA is for the demonstration plant only and is not documentation for the entire Recycled Water Seasonal Storage Program.

The Demonstration Project is not anticipated to affect federal lands or require federal funding; therefore, no NEPA compliance would be required. As the Demonstration Project is expected to modify an existing facility and be temporary in nature, a Categorical Exemption is assumed to be the appropriate CEQA clearance document. In accordance with the State CEQA Guidelines, Section 15301, a Class 1 Categorical Exemption for the minor alternation of existing public or private structures/facilities, involving negligible or no expansion of use could be used for the demonstration plant. The administrative draft CEQA document will be based on existing readily available public information and/or information performed under the proposed effort.

Deliverables

- The Consultant will prepare the paperwork to support a Categorical Exemption.
- PDFs and five hard copies of the information supporting the Categorical Exemption will be provided.

Task 5 – Regulatory Assistance

The Consultant will identify regulatory requirements and/or permits needed to implement the demonstration project. Permitting of the future permanent recycled water project under the anticipated Reservoir Augmentation Reuse regulations will also be discussed. This task includes regulatory coordination with the Division of Drinking Water and the RWQCB. One conference call meeting with the regulators is assumed.

Deliverables

- Agenda, presentation materials, handouts, and notes for the meeting will be prepared by the Consultant.

Task 6 – Schedule

The Consultant will develop a project schedule indicating major milestones using a scheduling program such as Microsoft Project or Primavera. The detailed implementation schedule will consider the demonstration project as well as an outline for the implementation of the full-scale system.

Deliverables

- The schedule will be submitted as part of the Task 2 Preliminary Design memo.

Task 7 – Meetings and Workshops

In conjunction with the JPA staff, the Consultant will participate in a kick-off meeting, monthly progress meetings, and JPA staff workshops to receive input/direction.

Kick-Off Meeting: A Kick-off Meeting will be held with JPA staff. The purpose of this meeting will be to meet with key team members, review the scope of work and schedule, and identify any potential issues requiring special attention. As part of the meeting, the group will establish effective communication protocols and develop a clear understanding of the project goals and the critical success factors that will be required to meet the goals.

Progress Meetings: Monthly progress meetings will be held with JPA staff to discuss the progress of the work and to coordinate the preliminary design and CEQA documentation. Two progress meetings will be held.

JPA Workshops: Two JPA workshops will be held. One workshop is anticipated after the submission of the preliminary layouts prepared for Task 1 while the second workshop is anticipated to receive comments on the Draft Demonstration Facility Preliminary Design prepared for Task 2. Attending the Workshop will be the Consultant's Project Manager and others key staff as deemed necessary by the Consultant's Project Manager.

Meetings and workshops will be held at the District's offices and be approximately 2 hours in length.

Deliverables

- Agendas, presentation materials, handouts, and notes for the meeting will be prepared by the Consultant.

Task 8 – Existing Material Review

The Consultant will review available materials, including the Basis of Design Report, related to the project as provided by the LVMWD. All existing materials for review will be provided to the Consultant by the District prior to the project Kick-off meeting (Task 7).

Task 9 – Site Visits

The Consultant will conduct two site visits to the demonstration facility site to obtain information necessary to develop the preliminary design defined in Task 2. One site visit will be coordinated with the Kick-off meeting (Task 7). The second site visit will be conducted prior to submittal of the draft Preliminary Design TM to field check the proposed layouts and design. The JPA will provide access to the facilities and will have staff present to answer questions and provide direction as required..

Task 10 – Board Meetings

The Consultant will attend and/or present at two JPA Board meetings. The Consultant will assist in preparing PowerPoint presentations summarizing the status of the project. Attending the Board Meetings will be the Consultant's Project Manager and others as deemed necessary by the Consultant's Project Manager.

Deliverables

- Agendas, presentation materials, handouts, and notes for the meeting will be prepared by the Consultant.

Task 11 – Estimate of Probable Cost

The Consultant will prepare an Estimate of Probable Construction Cost for the Demonstration Projct based on the drawings and information prepared for Task 2. The opinion of probable cost will be based on a nationally recognized cost estimating system, R.S. Means or equal. The Opinion of Probable Costs will be per AACE Construction Cost Estimate Class 3. The Opinion of Probable costs will be prepared by the Consultant's engineering and construction staff.

Capital costs will consider the anticipated site improvements, on-site facilities, supply and discharge piping, vendor supplied process systems, demolition, building modifications, provisions for power supply, instrumentation for remote data collection pipeline, foundation preparation, and the connections. The estimates will be developed based on conceptual site plans, building layouts, and pipeline alignments, using quantity take-offs where available from Tasks 1 and 2. Appropriate allowances and contingencies will be included as costs for items that have yet to be clearly defined at this stage.

Deliverables

- The Consultant will prepare the Draft and Final Opinion of Probable Construction Costs to be included in the Task 2 Preliminary Design TM.

Schedule

We have developed a detailed schedule for the Phase I Study, of which a summary is included at the end of this section. The summary shows the duration of each of the main tasks and how technical meetings and workshops have been timed at critical decision points. The schedule is realistic and completes the core work associated with Demonstration Plant planning within four months. As part of the effort to make the schedule realistic, we have accounted for time to complete QA/QC reviews, finalize and produce the TMs/reports, and for LVMWD to review each submittal. These elements can often be overlooked, which would result in unanticipated schedule delays during project execution.

Our multi-faceted approach to keep the work on schedule and coordinated with JPA staff is described below. Many of the items highlighted below focus on communication. As highlighted in the Project Management approach, frequent and effective communication between the JPA and CDM Smith is essential for a successful project that meets schedule.

- Success with meeting the schedule starts with schedule preparation: defining the appropriate work sequence from the start sets the team up for success and for efficient work execution. The schedule supports our Project Approach, which starts with project kick-off, data gathering, narrowing down of treatment alternatives while defining the myriad of project elements, and then bringing the information together to complete the alternatives analysis and define the recommended alternative.

- Defining and understanding the critical path at project kick-off with frequent updates will keep the project on track. The CDM Smith team will be reviewing the schedule frequently to track progress and update the critical path.
- The schedule will be presented and reviewed at the project kick-off meeting. During this meeting, we will get commitments from all project team members to work together towards meeting the schedule.
- We have carefully timed technical meetings with the JPA project team and workshops with senior management and stakeholders to review work progress, discuss JPA comments, and facilitate decisions to keep the project moving and on schedule.
- We will stay in close contact with the JPA about the schedule during our monthly project management calls. As part of these calls we will discuss the project schedule and the critical path. Any variances with the project schedule will be discussed along with remedies to get the project back on schedule.

Looking Beyond the Demonstration Plant Phase

Along with keeping the Demonstration Project Preliminary Design and Environmental Analysis work on schedule, the JPA and CDM Smith need to be looking towards future phases to keep the overall Recycled Water Seasonal Storage Program on schedule. Potential weaknesses and threats need to be identified and mitigated early on to keep the overall IPR implementation on schedule. One example is stakeholder involvement and public acceptance. Continued involvement of stakeholders will help the JPA keep the overall implementation on schedule. This was demonstrated by Orange County Water District with the implementation of the Groundwater Replenishment System. Involving key stakeholders early in the process allowed OCWD early wins and support with public acceptance throughout the project implementation. Starting outreach to key stakeholders in the project area during the Demonstration Plant Preliminary Design will help the JPA earn public acceptance and move towards implementation without delays.

TASK
JANUARY
FEBRUARY
MARCH
APRIL
Week 1
Week2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
Week 13
Week 14
Week 15
Week 16
Week 17
Task 1: Preliminary Layouts
1.1 Investigate Alternative Processes
1.2 Investigate Learning Center/Assembly Room Requirements
1.3 Develop Demo Test Concepts
1.4 Prepare Preliminary Layouts
Task 2: Demonstration Facility Preliminary Design
2.1 Prepare Demo Plant Preliminary Design
2.2 Prepare Design Criteria
2.3 Preliminary Design Memo
Task 3: Procurement Options
3.1 Discussions with Vendors
3.2 Develop Procurement Options
Task 4: CEQA/NEPA Documentation
4.1 Perform CEQA/NEPA Analyses
Task 5: Regulatory Assistance Demonstration Facility Preliminary Design
5.1 Regulatory Assistance
5.2 Meeting with Regulators
Task 6: Schedule
6.1 Develop Project Schedule for Demo Project
Task 7: Meetings And Workshops
7.1 Kick-Off Meeting (1)
7.2 Progress Meetings (4)
7.3 JPA Staff Workshops (2)
Task 8: Existing Material Review
8.1 Review Miscellaneous Background Materials
8.2 Review Basis of Design Report
Task 9: Site Visits
9.1 Site Visit No. 1 (Initial)
9.2 Site Visit No. 2 (Confirmation)
Task 10: Board Meetings
10.1 JPA Board Meetings
Task 11: Estimate Of Probable Costs
11.1 Prepare Engineer's Estimate for Demo Plant
Potential Additional Tasks
4.2 Prepare Negative Declaration
5.3 Perform NDMA Testing
6.2 Develop Project Schedule for Permanent Project

4. Assumptions/Recommended Services

The following is a list of assumptions upon which this Scope of Work is based:

1. Demonstration Plant design information and details for the MF/UF and UV systems will be provided by the selected MF/UF and UV vendors.
2. The JPA will assign a representative to attend all meetings with regulatory agencies during the permitting task of this Scope of Work.
3. The JPA reviews will be accomplished within ten (10) working days from the delivery of the draft documents or sooner as required to meet established schedule unless otherwise noted.
4. Comments received after the draft submittal comments have been incorporated may be considered additional services.
5. The JPA will provide the Consultant with all available information relative to this project within two weeks following the kick-off meeting, including but not limited to digital copies of the building drawings in AutoCAD format.
6. It is assumed that a combined Initial Study (IS)/ Negative Declaration (ND) and Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) would be the appropriate CEQA/NEPA document for the demonstration facility.

CDM Smith has identified three items to consider for inclusion in the scope of work. They are briefly described below, and a line item cost for each is included in our cost estimate submitted separately as required. We welcome the opportunity to discuss these items with the JPA in greater detail at your convenience.

Optional Task 4.2 - Prepare Negative Declaration. Once the CEQA/NEPA analyses are performed in Task 4.1, if a Categorical Exemption is not desired or approved by the District, a Negative Declaration document would be required to meet the CEQA requirements. This optional task would be to perform that additional necessary to prepare the documentation for the demonstration plant.

Optional Task 5.3 – Perform NDMA Testing. Because NDMA can be formed in the reclaimed water distribution lines, it is important to understand the current NDMA concentrations at the point where the influent water will be drawn for the future AWTF. This optional task would test water samples from the distribution system for NDMA so that an appropriate concentration can be used in the testing, design, and discussions with the regulators. The testing will also evaluate formation under extended storage, to simulate conditions that could occur when pulling water out of the Las Virgenes Reservoir.

Optional Task 6.2 – Develop Project Schedule for Permanent Project. This optional task would add planning for the entire recycled water program to the schedule for the demonstration plant.

CDM Smith requests the following changes to the Consultant Agreement as provided in the RFP. These requested changes will have no material impact on the services provided.

Article 4 Term
CDM Smith requests deleting the last sentence. While appropriate for other situations such as a lump sum construction contracts, it does not appear relevant in a time-and-materials professional services agreement.

Article 8 Indemnification
It appears that, as currently drafted, this article may not be in compliance with California Civil Code Section 2782.8. CDM Smith requests the following revisions. "Consultant shall defend, indemnify, and hold harmless Agency, its officers, employees and agents, from and against loss, injury, liability, or damages to the extent caused by ~~arising~~ from any negligent act or omission to act, ~~including any negligent act or omission to act~~ by Consultant or Consultant's…"

Article 9 Insurance, Item (c) 2
The insurance industry will no longer agree to provide 30 days' notice of policy cancellation as required by the language here. We ask that this provision be changed to state that it is our responsibility, and not the insurers, to provide such notice. Accordingly, we request revising paragraph (c) 2 as follows. "For each policy required in this section, Consultant shall provide notice to Agency of any material change, including reductions in coverage or cancellation, within 10 days of such change. Notice shall be provided by certified mail, return receipt requested, to the Agency, Attention: Office Manager.

Arcticle 10 Miscellaneous, Item (f)
CDM Smith prefers to follow the American Rule, which provides that each party to the dispute will remain responsible for its own attorneys' fees and costs. We request deleting this section.

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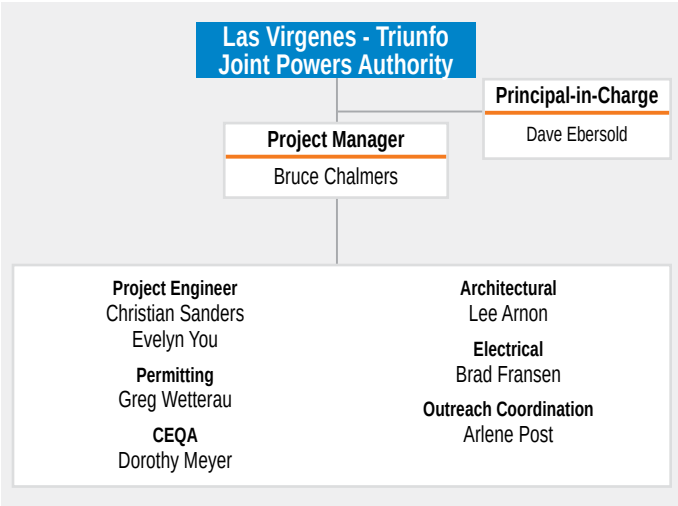
5. Proposed Personnel

Led by Bruce Chalmers, the members of the CDM Smith team have successfully shepherded potable reuse projects from concept through full-scale implementation. Our team provides the JPA with the benefits of experience gained and confidence of having the full breadth and depth of resources to become the new world leader in recycled water.

Our team has participated in the design of three of the four membrane-based, permitted, IPR projects to date in California. The CDM Smith team led and executed the design of Orange County Water District's GWRS, and we continue to utilize the knowledge gained from this award-winning, multi-year IPR program to assist other agencies in advancing their IPR projects. Most recently, we applied this knowledge to the design for the expansion of the Water Replenishment District's Vander Lans WTF, nearly tripling its capacity without increasing the brine production. This is the first plant to be permitted under the new draft Groundwater Replenishment Reuse Regulations.

This team knows how to deliver a project that the JPA can implement.



Bruce Chalmers, PE—Project Manager | Professional Engineer #36236

36 Years	Experienced managing water storage and distribution facilities
70-MGD Capacity	Managed at GWRS, Orange County Water District
25+ Papers Authored	Published on the subject of indirect potable reuse and treatment

As project manager, Bruce will lead the CDM Smith team and will report directly to the JPA as your single point-of-contact. Bruce has more than 36 years of experience managing the planning, design, and construction of water storage and distribution facilities and IPR treatment systems. He led early planning studies involving 31 conceptual reports for the Orange County Water District's $485 million, 70-million gallons per day Groundwater Replenishment System (GWRS)—the largest recycled water project in the world. Bruce was also the technical advisor for the design-build of the City of San Diego's IPR Demonstration Plant and served as Project Manager for the pilot testing and design for both the original and expanded Vander Lans WTF, one of the few permitted plants under the new regulations. As a recognized national expert in IPR, Bruce has authored more than 25 papers on indirect potable reuse and treatment.

Bruce will be supported by the following key personnel. Full resumes are included in Appendix A.

Team Member	
Dave Ebersold, PG, PMP **Principal-in-Charge** Professional Geologist #5071 | Engineering Geologist #1578	As the principal-in-charge, Dave will serve as the principal liaison between the JPA and the CDM Smith team. He will support the JPA in confirming that CDM Smith's resources are available throughout this project and that your needs are being met. Dave has more than 30 years of experience in the management of complex, water management projects, including as Principal-in-Charge for the Vander Lans WTP, Los Angeles GWR Pilot, and GRIP IPR projects.
Christian Sanders **Project Engineer**	Christian will serve as a project engineer for this project. He has 13 years of experience in commissioning, pilot plant testing, concept design development and review, bench-scale testing, and implementation of operational optimization programs. For the Melbourne Desalination Pilot Plant Project, Christian was the senior process engineer and provided commissioning support for desalination pilot plant trials to investigate conventional versus membrane pre-treatment prior to reverse. He served in a similar capacity for the Gold Coast Desalination Pilot Project and the Sydney Desalination Pilot Plant Project.
Evelyn You, PE **Project Engineer** Professional Engineer #70014	Evelyn has 13 years of water/wastewater treatment engineering experience, including membrane treatment pilot and design. She will serves as a project engineer for this project. Evelyn has served as a project engineer on various treatment projects, including the Gila River Indian Community brackish water desalination facility and the East Valley Water District membrane filtration study. She has lead major design elements for the Vander Lans WTP, LA GWR pilot, and GRIP IPR projects. Additionally, for the City of Camarillo Brackish Water Desalination Project Pilot Study, Evelyn assisted with the design and operation of the reverse osmosis pilot plant for iron and manganese removal from brackish groundwater.
Greg Wetterau, PE **Permitting** Professional Engineer #77978	As the treatment specialist, Greg will scope the demonstration project and make recommendations for the capacity, size, and layout of treatment modules. Greg has 21 years of expertise in the process and system design for membrane filtration, desalination, and advanced wastewater treatment facilities. He has been involved with piloting, design, or facility start-up for more than 50 membrane treatment facilities throughout the US and internationally. Greg provided senior technical oversight for the City of San Diego's Advanced Water Purification Facility Demonstration project design, construction, and operation. This project was a component of the city's planned IPR facility which employs reservoir augmentation.
Dorothy Meyer **CEQA**	Dorothy will be responsible for conducting the required CEQA/NEPA analyses and preparing the appropriate environmental document(s) for this project. She has more than 30 years of experience preparing and processing environmental documents per CEQA and NEPA for infrastructure projects. She lead the CEQA documentation for the Vander Lans WTF project. For the City of Los Angeles, Dorothy prepared and processed the environmental analysis, including an MND and EA for the Terminal Island Treatment Plant Advanced Wastewater Treatment Facility Phase I. Areas of controversy included cultural resources, least tern nesting, and water quality of the Dominguez Gap Barrier.
Lee Arnon, AIA, AICP **Architectural**	Lee will be the architect for this project. He has more than 35 years of experience in community planning, architecture, and design. For the City of Riverside's Regional Water Quality Control Plant Expansion, Lee was the project architect for several process and support buildings necessary to the expansion of the regional wastewater treatment plant. Lee designed these buildings to enhance the architectural unity of the existing campus.
Brad Fransen, PE **Electrical Engineer**	Brad has more than 25 years of electrical engineering experience and will serve as the electrical engineer for this project. For the Riverside Water Quality Control Plant Phase 1 Plant Expansion, Brad was the Lead Electrical Engineer and led a team of engineers and designers to produce 160 electrical drawings for the plant expansion. In order for the plant to stay in operation throughout construction, Brad and his team innovated construction work sequences as part of the project deliverables.
Arlene Post **Outreach Coordination**	Arlene will provide outreach support for this project. She has more than 30 years of experience leading and implementing all aspects of public communications and outreach strategies and is a leader in designing and implementing award-winning public involvement and education initiatives. For the City of San Diego's Advanced Water Purification Demonstration Facility, Arlene coordinated activities to develop education strategies and a facility tour to acquaint visitors with the process, purpose, and benefits of the City's facility. She was also instrumental in development and implementation of the public engagement program for the Los Angeles Department of Water and Power's recycled water master planning, including its groundwater replenishment program.

6. Sub-Consultant Qualifications

The CDM Smith team will not require the addition of any sub-consultants in order to provide the requested services and complete the scope of work.

7. References

The projects referenced in this section represent a sample of CDM Smith's experience working together and successfully enforcing quality, cost, schedule, and safety for projects of similar scope to JPA's Recycled Water Seasonal Storage Demonstration project. The CDM Smith team's demonstration plants offer a versatile and cost-effective way to monitor, analyze, and modify proposed treatment systems prior to full-scale design and implementation.

San Diego Advanced Water Purification Demonstration Facility

CDM Smith developed equipment layout and incorporated educational and outreach features into the design

Owner / Reference:
City of San Diego
Amy Dorman, PE
Phone: (619) 533-5248

CDM Smith designed, constructed, and operated this 1-mgd demonstration scale advanced water purification facility at the North City Water Reclamation Plant (NCWRP). Through extensive testing at the facility, CDM Smith demonstrated the feasibility of using advanced treatment technologies to treat tertiary wastewater to high quality product water that can be sent to the local San Vicente Reservoir for indirect potable reuse. Built in less than four months and operated for a year and a half, the demonstration project was used to build public support and achieve preliminary regulatory approval for a future full-scale reservoir augmentation project. As part of the project, CDM Smith provided parallel treatment trains comparing MF and UF as pretreatment for reverse osmosis. The MF system selected was manufactured by Pall Corporation, serving as a benchmark to compare against other successfully operated wastewater facilities. The UF system selected was a semi-universal membrane rack compatible with membranes from multiple vendors, the first of its kind installed in California. Membranes selected for the UF system were manufactured by Toray Membrane. After 18 months of operation, the two membrane filtration systems both proved reliable for removal of pathogens and providing a reliable supply for the downstream reverse osmosis. No membrane fiber breaks were observed for either system during the 18 months of operation.

Leo J. Vander Lans Water Treatment Facility Expansion

CDM Smith conducted pilot testing of high recovery RO and full-scale demonstration testing of increased RO flux and UV/chlorine for advanced oxidation.

Owner / Reference:
Los Angeles County Department of Public Works
Paul Fu
Phone: (562) 275-4251

The Leo J. Vander Lans Water Treatment Facility (LVLWTF), creates recycled water for an engineered freshwater pressure ridge and seawater trough designed to protect groundwater in the Central Basin of Los Angeles County from seawater intrusion. CDM Smith's 18-year history with this facility began with the original feasibility studies and the first CDPH Engineers Report in 1994. In 1998, CDM Smith began the design phase for the project. CDM Smith oversaw the design of the mechanical for the RO system, and directly designed the MF facilities, sitework, chemical systems, UV-AOP irradiation system, product water pump station, waste equalization structure, buildings, barrier pipeline connections and control systems. In 2011, CDM Smith designed a 5-mgd expansion of the treatment facility to replace the use of imported water entirely. The backwash from the MF system is treated and reused while a third stage has been added to the RO to increase the RO recovery rate to 92.5 percent. This increase in RO recovery reduces the daily brine flow in half. It is the first facility to achieve permitting under the 2014 Groundwater Replenishment Reuse Regulations. The facility has been operational for two years without a single chemical cleaning for the RO membranes.

Groundwater Replenishment System

CDM Smith led the preliminary design through completion of one of the largest, most successful IPR projects in the world.

Owner / Reference:
Orange County Water District (OCWD)
Mehul Patel
Phone: (714) 378-3200

OCWD and Orange County Sanitation District (OCSD) have implemented an innovative and cost-effective solution to their water supply needs by building a sustainable and state of the art water reclamation project. The Groundwater Replenishment System (GWRS) is the largest potable reuse project in the world, providing a reliable, high-quality source of water to recharge the Orange County Groundwater Basin. The GWRS project helps to solve many of the region's most critical water resources issues: providing a long-term, locally controlled potable and reclaimed water supply; protecting the Orange County Groundwater Basin from further degradation due to seawater intrusion; and providing a means for reducing the amount of treated wastewater that is discharged to the Pacific Ocean. CDM Smith led the project development phase, final design, bidding, construction, and operations and maintenance for this world class facility.

The GWRS reclaims and recycles up to 70-mgd of secondary effluent. The secondary effluent undergoes three additional levels of treatment, including microfiltration, 100-percent reverse osmosis treatment, and ultraviolet disinfection. The highly treated water is used to prevent seawater intrusion through a series of strategically placed injection wells and then distributed to basins to recharge the groundwater supply with near-distilled water quality - the highest quality water available for recharge.

Groundwater Desalination Pilot Study

CDM Smith completed operations training for city staff to use the pilot plant as a training facility for operators that will eventually operate the full scale desalination plant.

Owner / Reference:
City of Camarillo
Lúcia McGovern
Phone: (805) 388-5334

Due to deterioration of groundwater from two of the City of Camarillo's wells, CDM Smith piloted processes that would supply high quality water in a cost-effective manner while maximizing the use of local water resources. To achieve the water supply and water quality goals, CDM Smith managed the design, construction, and operation of a groundwater desalination pilot plant. This work was funded by the city through a Proposition 50 grant from the California Department of Water Resources (DWR).The purpose of the pilot plant is to demonstrate the effectiveness of the treatment process and to obtain full-scale design criteria for the city's 8-mgd groundwater desalination facility. The pilot plant tested alternative iron and manganese removal alternatives as pretreatment to reverse osmosis (RO) for wells experiencing considerable degradation in chlorides, sulfates, iron, and manganese. The pilot unit consists of two overall processes: the pretreatment process and the desalination process. Nine months of operation was dedicated to an evaluation of five pretreatment processes, including: oxygen quenching with sodium thiosulfate; oxidation and filtration with either air, chlorine dioxide, or free chlorine; and, filtration using either dual media filters, pyrolucite filters, or microfiltration. The final three months of operation included optimization of the RO process with the selected pretreatment process. CDM Smith has designed and constructed the pilot units in its pilot plant fabrication facility located in Rancho Cucamonga, CA. CDM Smith installed pilot units at the city's well site and operated the pilot plant.

Cambria Sustainable Water Supply Project

First seasonally operated IPR facility in California. Only facility approved by DDW for 2-month aquifer travel time.

Owner / Reference:
Cambria Community Services District
Bob Gresens
Phone: (805) 909-2210

CDM Smith designed, constructed, permitted, and started up this emergency water supply project. This project is the second IPR facility in California permitted under the new groundwater recharge regulations and first to receive approval for a two-month aquifer travel time. The project had a very aggressive schedule, allowing only six months to complete construction and start-up of the facility. In order to meet this schedule, CDM Smith put a major emphasis on early procurement of the major process equipment. The treatment plant is designed to treat approximately 1-mgd of secondary effluent and brackish groundwater extracted from a groundwater well located at the District's secondary effluent percolation ponds. CDM Smith incorporated lessons learned from previous pilots and demo plants, including high recovery RO, universal UF rack, lower energy ESPA4 RO elements, and use of UV/chlorine for advanced oxidation. The CDM Smith team also coordinated closely with regulatory agencies and community groups to build support for the project with vocal, long-standing opponents.

The facility is the first seasonally operated IPR project in the state, requiring additional consideration for capital costs, operator support, and mothballing of equipment. The plant is currently on it's third season of operation.

LA Recycled Water Master Plan, GWR Master Plan and Pilot Study

CDM Smith performed 16 months of pilot testing for process optimization, including NDMA control methods, two-stage vs. three-stage RO, and alternative advanced oxidation process.

Owner / Reference:
Los Angeles Department of Water and Power
Paul Liu
Phone: (213) 367-0761

The GWR Master Plan and pilot study laid the foundation for Los Angeles to achieve 15,000 to 30,000 acre-feet per year of recycled water for indirect potable reuse. CDM Smith worked side-by-side with leadership at LADWP and the Bureaus of Sanitation and Engineering to determine the near-term and future recycled water program requirements, as well as the regulatory and permitting strategy required to facilitate implementation. The plan includes a new Advanced Water Purification Facility (AWPF) for the City to be located at the existing Donald C. Tillman Water Reclamation Plant. The purified recycled water would be recharged at existing recharge basins and new injection wells through a series of existing and new pipelines. The groundwater replenishment treatment pilot was a 16 month study that utilized microfiltration, reverse osmosis, and two alternative forms of advanced oxidation, to produce potable quality water from both a tertiary and secondary effluent source. As part of this study, CDM Smith led several workshops and participated in public outreach meetings and tours of the treatment facility. CDM Smith also assisted LADWP in developing and implementing an extensive outreach plan for recycled water and set the stage for public acceptance of groundwater replenishment. This outreach for this project was selected as the 2012 Recycled Water Community Outreach/Public Education Program of the Year by the California Section of the WateReuse Association.

8. CDM Smith's Quality Control Process

"Quality" at CDM Smith means excellence delivered. The foundation of our vision is a commitment to delivering exceptional service while improving the environment and infrastructure. We achieve this by continuous review at every level of each project we undertake.

Quality Assurance/Quality Control

In order to deliver all of CDM Smith's projects with the utmost attention to quality, we have fully integrated Quality Assurance/Quality Control (QA/QC) as a core process in our project delivery. We emphasize quality throughout all of our projects with implementation of both detailed guidance documents and a firm-wide cultural commitment to exceeding our clients' expectations for quality.

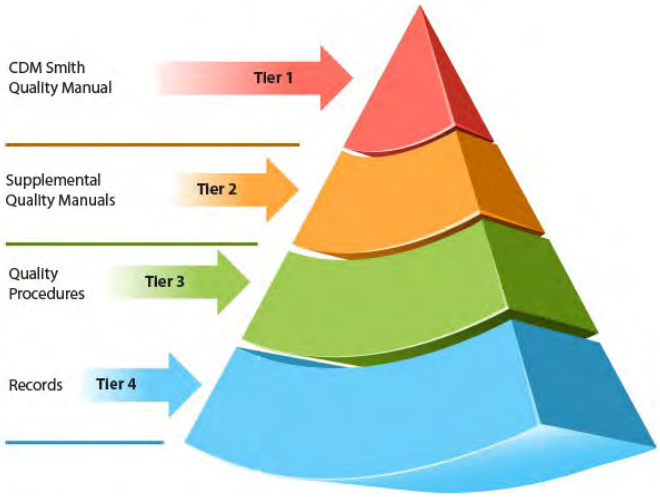
To formalize our commitment to quality, CDM Smith has developed a Quality Management System (QMS), which provides guidelines to address different facets of quality throughout the organization, including a specific quality program for construction. To aid in the implementation of best-practices during execution of all the services provided by CDM Smith, we have developed a series of comprehensive Quality Management Plans (QMPs). These documents provide value to our clients by setting out the objectives and philosophies that guide a quality-centric approach to projects before they begin. CDM Smith teams automatically implement these plans upon project startup.

Our QMS addresses such critical areas as design reviews, field inspections, submittal reviews, deficiency identification/correction/tracking, non-conformance, and subcontractor quality review. Specific QMPs have been created to guide construction projects from initial planning through design, construction and commissioning phases and on to project closeout. These plans form the basis for CDM Smith's commitment to delivering projects of exceptional quality.

In addition to our company-wide quality program, we work closely with each client to develop project-specific quality plans for the project scope and scheduled milestones, project deliverables, project reviews, and project completion and close-out lists. Our QMPs are available to our clients for review and customization upon request.

CDM Smith's Quality Management System (QMS) is built on a foundation of consistent, regular record keeping and quality procedures that our teams carry out daily on projects around the world.

Our commitment to quality extends beyond the page to the actual execution of projects. CDM Smith's project teams facilitate the ongoing process of maintaining QMS compliance at all stages of design and construction. Onsite construction QA/QC specialists, one each for the design side and construction side, provide unrestrained oversight and inspection on equipment and materials, construction methods, controls integration, functional startup, testing and training. Further, the QA/QC specialists document and communicate to all teams, including subcontracts, vendors, engineers, and owner personnel, regarding the progress, implementation, and upcoming action items for the QA/QC plan.



At CDM Smith, QA/QC is not an occasional action item; it is a continuous, self-reinforcing process that guides our actions through every phase of our projects.

9. Certificate of Liability Insurance

To confirm CDM Smith's ability to comply with the JPA's insurance requirements, we have provided a copy of the firm's current liability insurance certificate.

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 01/06/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Aon Risk Services Northeast, Inc. Boston MA Office One Federal Street Boston MA 02110 USA	CONTACT NAME: PHONE (A/C. No. Ext): (866) 283-7122 FAX (A/C. No.): 800-363-0105 E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	National Union Fire Ins Co of Pittsburgh	19445
INSURER B:	New Hampshire Ins Co	23841
INSURER C:	Lloyd's Syndicate No. 2623	AA1128623
INSURER D:	ACE Property & Casualty Insurance Co.	20699
INSURER E:		
INSURER F:		

INSURED
CDM Smith Inc.
75 State Street, Suite 701
Boston MA 02109 USA

Holder Identifier :

COVERAGES **CERTIFICATE NUMBER:** 570060890163 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			GL2039274	01/01/2016	01/01/2017	EACH OCCURRENCE	$2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$300,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						MED EXP (Any one person)	$10,000
	POLICY X PRO-JECT X LOC						PERSONAL & ADV INJURY	$2,000,000
	OTHER:						GENERAL AGGREGATE	$4,000,000
							PRODUCTS - COMP/OP AGG	$4,000,000
A	AUTOMOBILE LIABILITY			CA 9734322 AOS	01/01/2016	01/01/2017	COMBINED SINGLE LIMIT (Ea accident)	$2,000,000
B	X ANY AUTO			CA 9734321 MA	01/01/2016	01/01/2017	BODILY INJURY (Per person)	
	ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY (Per accident)	
	X HIRED AUTOS / X NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	
D	X UMBRELLA LIAB X OCCUR			XOOM00981485001	01/01/2016	01/01/2017	EACH OCCURRENCE	$5,000,000
	EXCESS LIAB / CLAIMS-MADE						AGGREGATE	$5,000,000
	DED X RETENTION $10,000							
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N			WC068022509 AOS	01/01/2016	01/01/2017	X PER STATUTE / OTH-ER	
B	ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? N	N/A		WC068022511 CA	01/01/2016	01/01/2017	E.L. EACH ACCIDENT	$1,000,000
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000
C	Archit&Eng Prof			QC1601367	01/01/2016	01/01/2017	each claim aggregate	$5,000,000 $5,000,000

Certificate No : 570060890163

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Re: Proposal Use Only.

CERTIFICATE HOLDER

CDM Smith Inc.
75 State Street, Suite 701
Boston, MA 02109 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Services Northeast, Inc.

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10. Cost to Perform Services

Per the instructions of the RFP, CDM Smith has included our cost to perform the requested services, a schedule of rates, and any anticipated rate changes separately from our proposal.

Appendix A—Key Staff Resumes

R. Bruce Chalmers, PE, BCEE

Project Manager

Mr. Chalmers has 34 years of design and managerial experience in the fields of water and wastewater engineering. He has been involved in projects encompassing the planning, design, and construction management of water storage and distribution facilities, sewage collection systems, sewage lift stations, water booster stations, and water and wastewater treatment plants.

Mr. Chalmers is a senior project manager with large project experience (construction cost greater than $300M) utilizing multiple firm project teams. Mr. Chalmers has been responsible for numerous water and sewer projects, including three microfiltration (MF)/reverse osmosis (RO)/ultraviolet (UV) advanced water recycling treatment plants for IPR, including the 70-million-gallons-per-day (mgd) Groundwater Replenishment System (GWRS), the largest recycled water project in the world; two RO desalination treatment plants; seven volatile organic compound (VOC) treatment plants using packed tower aeration (PTA), ion exchange (IX), and granular activated carbon (GAC); reclaimed water systems, 12 wellhead facilities, more than 13 conventional, prestressed, and steel reservoirs; 225,000 linear feet (lf) of transmission mains, sewage force mains and trunk sewers; and numerous water booster stations.

His professional experience includes facility planning and feasibility reports, alternative treatment studies, lead and copper studies, detailed design, preparation of plans and specifications, grading plans and hydraulic calculations, contract administration, shop drawings review, inspection, and environmental review. He has authored more than 25 papers on indirect potable reuse and treatment.

Project Manager, Leo J. Vander Lans Water Treatment Facility Expansion, Long Beach, California. Mr. Chalmers is the project manager for the Phase 2 expansion of the Leo J. Vander Lans Water Treatment Facility (LJVLWTF), which will increase the capacity from 3 mgd to 8 mgd. The project includes pilot testing, the preliminary design for a 6-mile pipeline from the Los Coyotes Water Reclamation Plant to the LVLWTF site, as well as the final design and construction services for the treatment plant expansion. Major issues such as increasing the capacity without increasing the waste flow are being solved by treating and reusing the MF backwash waste and adding an additional RO stage to raise the plant recovery rate to approximately 92 percent.

Treatment Plant Project Task Manager, Groundwater Replenishment System, Advanced Recycled Water Treatment Plant, Fountain Valley, California. Mr. Chalmers served as the treatment plant task manager for the planning and design, and project manager for the construction services of the $485 million GWRS for the Orange County Water District (OCWD) in Fountain Valley, California. The GWRS project is a 70-mgd advanced water treatment plant (WTP) treating secondary wastewater for groundwater injection and percolation. Technical memorandums, pilot testing, and the final design was prepared for the microfiltration (MF), reverse osmosis (RO), chemical, and disinfection processes; sitework; yard piping; and other ancillary facilities. Mr. Chalmers was also involved in the preparation of project cost estimates, provided information for public outreach, and performed as the project manager for the construction services (shop

Education

MS – Civil Engineering, California State University, Long Beach, 1994

BS – Civil Engineering, University of California, Los Angeles, 1980

Registration

Professional Engineer: California (1983), Florida, and Nevada

Honors/Awards

Board Certified Environmental Engineer (BCEE), American Academy of Environmental Engineers and Scientists

drawing review, request for information (RFI) response, change management, and operation and maintenance (O&M) manuals).

Water Treatment Process Expert, Indirect Potable Reuse Demonstration Project, San Diego Public Works Department, City of San Diego, California. Mr. Chalmers assisted the design-build team by reviewing the design drawings for the 1-mgd Demonstration Plant constructed at the North City Wastewater Plant. The Demonstration Plant was used to prove that the advanced water treatment (AWTF) process work, allow the public to view the process, and to gain support for implementation. Mr. Chalmers also reviewed the conceptual design prepared for the full size AWTF based on the design criteria developed from the Demonstration Plant, which was operated by CDM Smith for 12 months after construction.

Project Manager, Indirect Potable Reuse Study, Southern California. For the Eastern Municipal Water District (EMWD), Mr. Chalmers led a team of engineers and planners to investigate and recommend a project to provide EMWD with recycled water for indirect potable reuse. This is the first phase of a multiphase project to implement up to 15,000 acre-foot per year of indirect potable reuse. Phase 1 tasks included an investigation of blending, travel time, and recharge facilities; brine management; regulatory impacts; facilities evaluation; and cost estimates and funding sources.

Technical Resource, City of Los Angeles Recycled Water Master Plan (LARWMP), Los Angeles, California. Mr. Chalmers provided technical input into the advanced treatment portion of the LARWMP, analyzing, providing input, and reviewing site selection, process selection and evaluation, sitework and yard piping, and pilot testing technical memorandums for the city's 15-mgd proposed Tillman groundwater replenishment system. The LARWMP will be the basis for environmental documentation. Mr. Chalmers is also involved in investigating alternative treatment processes to full advanced treatment (MF/RO/UV-A). Pilot testing included MF, RO, and UV-AOP. Other treatment processes evaluated included ozone-BAC, nanofiltration, and EDR.

Project Manager, South District Advanced Recycled Water Reclamation Plant, Miami-Dade County, Florida. Mr. Chalmers was the project manager for the 21-mgd South District Water Reclamation Plant for the Miami-Dade Water and Sewer Department. The project included overall program planning, site selection, groundwater modeling, pilot testing, preliminary and final design, cost estimates, O&M manuals, and construction management. Nineteen technical memos were prepared to evaluate alternatives, define design criteria, and set the foundation for the final design. Associated engineering tasks included recharge facilities, groundwater modeling, pilot testing, cost estimating, and procurement documents for proprietary MF and UV systems. Pilot testing included 5 MF /UF systems, five RO membranes, two ion exchange systems, and two UV-AOP systems.

Project Manager, Groundwater Reliability Improvement Program (GRIP).
Mr. Chalmers is the project manager for the Water Replenishment District's GRIP preliminary design. The project includes a 12 mgd AWTF, 6 mile pipeline, and connections to existing spreading grounds. The project also includes the final design of a diversion structure to provide the District with additional flexibility to transfer water between the San Gabriel River and the Rio Hondo spreading grounds.

David B. Ebersold, PG, PMP
Principal-in-Charge

Mr. Ebersold provides project leadership, facilitation and strategic support for water issues, leveraging his 30 years of experience in water resources, natural resources management, and geology. Specializing in large, technically complex, multi-disciplinary projects, his current engagements emphasize strategy development, public outreach, and stakeholder group facilitation for water, recycled water and integrated resources planning. Recognized by WateReuse California as Public Outreach Program of the Year, he led the consulting team providing public outreach strategy, facilitation and technical support for the City of Los Angeles's recycled water program. He contributes direct experience in recycled water development with agencies including the Metropolitan Water District of Southern California, Water Replenishment District of Southern California, Upper San Gabriel Valley Municipal Water District, Los Angeles Department of Water and Power, and many of the region's non-governmental organizations that share interests in recycled water.

Public and Agency Outreach and Technical Reviewer, Strategic Planning Assessment for Regional Use of Purified Recycled Water, Metropolitan Water District of Southern California. CDM Smith lead this study to perform a screening level evaluation of potential options for regional indirect potable reuse (IPR) in Los Angeles County using highly purified advanced treated water from Los Angeles County Sanitation District's (LACSD) Joint Water Pollution Control Plant and to recommend which options should be the subject of more focused investigation. Two types of IPR concepts were evaluated, groundwater replenishment/extraction (GWR) and reservoir augmentation (RA). For both applications, the treatment process was, at a minimum, micro-filtration, reverse osmosis, and advanced oxidation. Three options were evaluated: 1) Conventional Groundwater Replenishment by Metropolitan's Member Agencies, 2) Groundwater Storage and Export by Metropolitan, and 3) Metropolitan Surface Water Reservoir Storage. Mr. Ebersold provided agency outreach support and technical review.

Program Manager and Facilitator, Technical Support for Reclaimed Water Use, Los Angeles Department of Water and Power, California. Mr. Ebersold served as the Program Manager of the public outreach effort for the City of Los Angeles' Recycled Water Master Plan (RWMP). In this role, he assisted in development of the overall public outreach strategy in addition to facilitating the Recycled Water Advisory Group (RWAG), with 65 members from environmental organizations, neighborhood councils, religious and cultural organizations, and the business community throughout Los Angeles. Through this process, LADWP has developed strong support for its recycled water programs, including groundwater replenishment, and the important role it plays in the City's integrated water supply.

Principal-in-Charge, Leo J. Vanderlans Water Treatment Facility Expansion, Water Replenishment District of Southern California. Mr. Ebersold served as the Principal-in-Charge for CDM Smith's expansion of the Leo J. Vanderlans Water Treatment Facility. The expansion involved the design and engineering during construction for the 5 mgd expansion of the advanced water treatment facility. Water from the facility is injected in the Alamitos Gap Seawater Intrusion Barrier. Mr. Ebersold was responsible for assembling

Education

MBA – Business Administration, University of California, Los Angeles, 2002

BS – Engineering/ Geology, University of California, Los Angeles, 1985

Registration

Project Management Professional, 2007

Certified Engineering Geologist, California, 1991

Professional Geologist, California, 1991

the project team, ensuring their availability for and commitment to the project, monitoring project progress, and for CDM Smith's overall project performance. Earlier in his career, Mr. Ebersold lead the hydrogeologic investigation that evaluated the feasibility injection of recycled water into the barrier, estimated travel times to the closest wells, and served as the basis for environmental impact evaluations and the Engineering Report.

Principal-in-Charge, Groundwater Reliability Improvement Program (GRIP) Conceptual Design, Water Replenishment District of Southern California. CDM Smith was retained to prepare the conceptual design for the 20 mgd GRIP project. The project involved treatment process selection; site planning and layout; equipment sizing; pipeline alignment identification, evaluation, and selection; and permitting support. The goal of the project is to eliminate the use of imported water for groundwater replenishment in the Montebello Forebay, thereby improving the region's water supply reliability. Mr. Ebersold was responsible for assembling the project team, ensuring their availability for and commitment to the project, monitoring project progress, and for CDM Smith's overall project performance.

Principal-in-Charge, Condition Assessment and Water Master Plan, City and County of Honolulu Board of Water Supply. CDM Smith is performing a comprehensive condition assessment of the island of O'ahu's pipeline and non-pipeline facilities and developing a comprehensive Water Master Plan. An important focus of this work is to provide BWS with an analysis of the entire water distribution and transmission system to enable them to better understand the causes of water main failures within the system. The condition assessment includes evaluating and applying various evaluation tools and technologies to assess over 2,100 miles of pipeline, conducting a pipeline corrosion evaluation, and providing pipe material recommendations, based on diameter range, soil characteristics, expected pressures, and/or consequence of failure calculations for inclusion in water system standards. Mr. Ebersold developed and is leading the extensive public engagement strategy associated with this project and has overall responsibility for CDM Smith's performance of the work and the quality of deliverables.

Principal-in-Charge, Palos Verdes Reservoir Cover and Liner Replacement, Metropolitan Water District of Southern California. CDM Smith designed modifications to this 1,000 acre-foot potable water storage reservoir. As Principal-in-Charge, Mr. Ebersold worked closely with CDM Smith and Metropolitan staff to perform the design on an expedited schedule mandated by the need to place the reservoir back into service in order to provide operational flexibility required by other planned major system improvements. To facilitate this process, the team implemented biweekly project meetings that were attended by all key staff. The meetings were used to perform "over-the-shoulder" reviews of major design concepts, and to discuss and then make, and commit to numerous design decisions. Assisted by this collaborative this process, the team met the aggressive design schedule necessary to move the project forward.

Principal-in-Charge, Water Integrated Resources Plan, Pasadena, California. Mr. Ebersold serves as the Principal-in-Charge for the development of Pasadena Water and Power's (PWP) Water Integrated Resources Plan. Mr. Ebersold provides technical support in the areas of groundwater and other supply sources, including recycled water. He also serves as the facilitator for public meetings, Environmental Advisory Commission Meetings, and the mayoral-appointed Water IRP Advisory Group.

Christian Sanders
Project Engineer

Mr. Sanders in an environmental engineer with experience in project management, water treatment investigations (desalination, recycled water, conventional treatment), commissioning, pilot plant testing (desalination and fresh water), concept design development and review, bench-scale testing, and implementation of operational optimization programs.

Senior Process Engineer, Melbourne Desalination Pilot Plant Project, Melbourne (Australia). Mr. Sanders provided commissioning support for desalination pilot plant trials to investigate conventional versus membrane pre-treatment prior to reverse osmosis. This work was conducted as part of the bid process for the Melbourne desalination project. Mr. Sanders also provided operational supervision and process report writing throughout the testing phase.

Senior Process Engineer, Gold Coast Desalination Pilot Plant Project, Gold Coast (Australia). Mr. Sanders commissioned a two-pass reverse osmosis desalination pilot plant, including pre-commissioning documentation preparation and an operations and maintenance manual.

Senior Process Engineer, Sydney Desalination Pilot Plant Project, Sydney (Australia). Mr. Sanders supervised the pilot plant operator, and provided commissioning, troubleshooting, and data management support for granular media and ultrafiltration pre-treatment processes in conjunction with reverse osmosis technology.

Senior Process Engineer, Douglas and Northern Water Treatment Plants Optimization Program, Townsville (Australia). Mr. Sanders provided onsite technical advice (optimization strategy, performance evaluation, and design sign-off) at both sites to address membrane performance issues at Northern WTP and coagulation/filtration issues at Douglas WTP.

Senior Process Engineer, South East Recycled Water Alliance, Mornington (Australia). Mr. Sanders provided technical advice and supervision/mentoring to a small team of process engineers in the commissioning, process proving, and optimization of three recycled water treatment plants incorporating several technologies, including ultrafiltration, UV treatment, and reverse osmosis.

Senior Process Engineer, Douglas Water Treatment Plant, Townsville (Australia). Mr. Sanders provided onsite process optimization and design support aimed at improving the operation of the 90 ML/d contact filtration Module 4 and wastewater/sludge handling system at the Douglas WTP.

Senior Process Engineer, Nebo Road Water Treatment Plant, Mackay (Australia). Mr. Sanders provided several weeks of onsite operations support and treatment optimization. Project work included significant involvement in process troubleshooting and performance improvement of the plant's recently commissioned sludge handling/dewatering system, including new sludge thickener and centrifuges.

Education

M.P.S. – Agriculture and Life Sciences, Cornell University, 2005

B.S. – Environmental Engineering, University of Florida, 2000

Certifications

MIEAust CPEng (Environmental)

Senior Process Engineer, Douglas Water Treatment Plant, Townsville (Australia). Mr. Sanders provided several weeks of onsite commissioning support and supervised the optimization of the plant's 59 ML/d contact filtration Module 3, including the 10-day performance trial. He was also responsible for producing the Acceptance Test Report.

Senior Process Engineer, Emergency Relief Desalination Plant, Christchurch (New Zealand). Mr. Sanders was responsible for operator training and operations setup for the 0.4 ML plant, which was temporarily installed as part of the city's disaster relief response.

Senior Process Engineer, Bundamba Advanced Water Treatment Plant, Brisbane (Australia). Mr. Sanders provided three months of onsite process support including troubleshooting, optimization of lime dosing system, plant instrumentation, chemical dosing pumps, and biological nutrient removal.

Senior Process Engineer, Bendigo Water Treatment Plant Upgrade Technical Specification, Bendigo (Australia). Mr. Sanders assisted in the development of a technical specification for inlet works and sludge handling system upgrades and augmentation to accommodate increased wastewater handling requirements and changes in raw water quality.

Senior Process Engineer, Gold Coast Desalination Plant Technical Support, Gold Coast (Australia). Mr. Sanders provided onsite technical support looking into process issues related with the "hot-standby" operation of the 125 ML/d Gold Coast desalination plant.

Senior Process Engineer, Owner's Engineer – Design and Construct of Huonville Water Treatment Plant, Tasmania (Australia). Mr. Sanders prepared a concept design and technical specification for a proposed 9 ML/d DAFF WTP. He assisted in the tender review phase as the owner's process consultant and served as the owner's representative for the commissioning and performance testing phase of the project.

Senior Process Engineer, Townsville Water – Design, Build, Operate, Maintain Bid, Townsville (Australia) Mr. Sanders prepared concept design reports for two new 40 ML/d WTPs and upgrade of 232 ML/d Douglas WTP.

Eun Chu (Evelyn) You, PE

Project Engineer

Ms. You is an environmental engineer with experience on a variety of environment-related projects, including water/wastewater treatment engineering.

Project Engineer, Cambria Community Services District Emergency Water Supply Project Design-Build, Cambria, California. Cambria Emergency Water Supply Project included advanced water treatment of effluent water from Cambria Wastewater Treatment Plant (WWTP), and brine evaporation for zero-discharge. Cambria Advanced Water Treatment Plant treated groundwater with microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV) and hydrogen peroxidefor advanced water treatment and reinjected the advance treated water to groundwater aquifer. Ms. You led the design task for this design build project, and provided support during construction. She also provided engineering support for the Title 22 permit for the Advanced Water Treatment Plant, the Title 27 permit for RO brine discharge to Class II surface impoundment, and Low Threat Discharge NPDES Permit for MF filtrate discharge to fresh water lagoon for lagoon water quality mitigation. Ms. You led the preparation of construction drawings, engineering reports, operations manuals, and various technical memoranda for permitting. She also developed project descriptions for environmental documentation. The project was completed in 2014 using design/build delivery method.

Project Engineer, Leo Vander Lans Water Treatment Facility Expansion Final Design, Long Beach, California. Leo Vander Lans Water Treatment Facility includes microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV) for advanced water treatment of Title 22 effluent water from Long Beach Water Reclamation Plant (LBWRP). The design involved expanding the plant production capacity from 3-mgd to 8-mgd. Ms. You led the design of microfiltration (MF) system expansion and dissolved air floatation (DAF) system for MF backwash waste treatment. She also assisted with development of MF system procurement documents. The final design was completed in August 2012, and construction was completed in 2014.

Project Engineer, Monterey Peninsula Water Supply Project Desalination Infrastructure Design-Build, Monterey, California. Monterey Peninsula Water Supply Project Desalination Infrastructure Design-Build Project included granular media filtration and reverse osmosis (RO) for treatment of brackish groundwater for potable water use. Ms. You led the design of chemical storage and feed facilities.

Project Engineer, City of Santa Barbara El Estero Wastewater Treatment Plant Tertiary Filtration Plant Replacement Project, Santa Barbara, California. El Estero Wastewater Treatment Plant Tertiary Filtration Plant Replacement Project included demolition of existing media filter complex and replacing it with membrane filtration system. The project involved upgrades to chemical systems, recycled water chlorination system, and reclaimed water pumping. Ms. You served as the design task lead for the alternatives evaluation, preliminary design and final design phases of the project. She assisted the City with the evaluation of required tertiary treatment capacity to meet the City's long-term reclaimed water demands, taking into consideration the diurnal flow variations at the WWTP and available storage capacity for treated reclaimed water. The final design was completed in December 2013. Ms. You assisted with engineering services during construction.

Education

ME – Environmental and Water Quality Engineering, M.I.T., Massachusetts, 2003

BS – Civil and Environmental Engineering, University of California, Berkeley, 2002

Registration

Professional Engineer: California (2006)

Project Engineer, Groundwater Replenishment Master Plan, Los Angeles, California. Ms. You assisted with the Groundwater Replenishment (GWR) Master Plan component of the City of Los Angeles Recycled Water Master Plan (RWMP). She assisted with the advanced water treatment technology assessment, AWTP siting assessment, dry weather flow equalization evaluation, the integrated alternatives analysis of the near-term and long-term recycled water project alternatives, and the GWR facilities planning. For the determination of required dry weather flow equalization, Ms. You evaluated the existing and planned flow equalization storage volumes at the Donald C. Tillman Water Reclamation Plant, treatment process restrictions, plant influent diurnal flow patterns for weekdays and weekends, and effluent flow demands. The flow equalization was computed to minimize nighttime flow shortages using primary flow equalization storage.

Task Leader/Project Engineer, Water Treatment Plant Upgrades and Expansion Preliminary Design, Highland, California. Ms. You assisted with the preliminary design of the upgrades and expansion to East Valley Water District's Plant 134. The upgrades and expansion involved expanding the plant's capacity from 4-mgd to 8-mgd by adding a new 8-mgd capacity membrane filtration system, while keeping the existing plant in operation. The design also involved upgrades to the chemical feed systems and washwater recycle system. Ms. You assisted with the preparation of the preliminary design report and membrane pre-selection bid documents. The preliminary design was completed in February 2009.

Task Leader/Project Engineer, City of Camarillo Brackish Water Desalination Project Pilot Study, Camarillo, California. Ms. You assisted with the design and operation of the reverse osmosis (RO) pilot plant for iron and manganese removal from brackish groundwater for the City of Camarillo, California. The RO pilot study tested the following pre-treatment processes to be followed by RO: 1) sequestering; 2) aeration followed by granular media filtration (GMF); 3) aeration followed by membrane filtration; 4) chlorine dioxide feed followed by GMF; 5) chlorine feed followed by greensand. The pilot study was completed in February 2009.

Project Engineer, West Basin Water Recycling Facility, Preliminary Process Optimization Study, El Segundo, California. Ms. You conducted five sets of bench-scale jar tests in February 2007 to evaluate the effectiveness of several methods that were proposed to improve the performance of Title 22 treatment facilities. She also assisted with data compilation and analysis.

Project Engineer, Reverse Osmosis Facility Design Project, Gila River Indian Community, Arizona. Ms. You assisted with the design of a Reverse Osmosis Facility for Gila River Indian Community's drinking water system. She designed the chemical storage and feed systems for membrane pre-treatment, post-treatment and cleaning. The chemical systems included antiscalant, caustic soda and sodium hypochlorite. Ms. You also designed raw water pump station, blend water pump station, and finished water pump station.

Project Engineer, Membrane Systems Pilot Study, Highland, California. Ms. You assisted with the membrane systems pilot study that was conducted at East Valley Water District's Plant 134. The pilot study tested direct filtration systems using submerged microfiltration (MF) and low-pressure ultrafiltration (UF). Ms. You assisted with the membrane systems operation, data collection and analyses, and preparation of the final pilot study report. The pilot study was completed in June 2007.

Gregory D. Wetterau, PE, BCEE

Permitting

Mr. Wetterau is an environmental engineer with 21 years of experience in engineering and project management for planning, design, and construction phases of water and wastewater projects. His primary expertise includes process and system design for membrane filtration, desalination, and advanced wastewater treatment facilities, having been involved with piloting, design, or facility start-up for more than fifty membrane treatment facilities throughout the United States and internationally. Mr. Wetterau currently serves as the CDM Smith West Region Drinking Water Market Leader, as first Vice President for the American Membrane Technology Association (AMTA), and as Chair of the 2013 AWWA/AMTA Membrane Technology Conference Program Committee. He has also served on multiple Project Advisory Committees for the Watereuse Research Foundation and is active in the International Desalination Association (IDA).

Process Lead, Leo J. Vander Lans Water Treatment Facility Expansion, Long Beach, California. For the Water Replenishment District of Southern California, Mr. Wetterau served as lead process engineer during design and construction of the Leo J. Vander Lans Water Treatment Facility expansion. The design included expansion of the 3 mgd indirect potable reuse facility to 8 mgd without increasing waste flows to the sewer. A dissolved air flotation (DAF), secondary MF system, and third stage RO will produce an overall plant recovery of 91 percent. The design also includes the addition of advanced oxidation to comply with pending indirect potable reuse regulations in California. Mr. Wetterau has been heavily involved with permitting of the facility, the first to be approved under the current draft Groundwater Recharge Reuse Regulations.

Technical Lead, Water Purification Demonstration Project, San Diego, California. Mr. Wetterau provided senior technical oversight for the City of San Diego's Advanced Water Purification Facility Demonstration project design, construction, and operation. The demonstration project is a component in the city's planned indirect potable reuse facility which will employ reservoir augmentation to supplement the raw water supply from the San Vicente reservoir. The demonstration project included two independent process trains, each rated for 0.5 mgd finished water production, which include microfiltration, ultrafiltration, reverse osmosis, and advanced oxidation with ultraviolet light and hydrogen peroxide. Mr. Wetterau worked closely throughout the project with the Department of Public Health to support the development of future reservoir augmentation regulations and has led technical presentations to multiple regulatory agencies, public interest groups, and the City Council. The facility produces water of exceptional quality that meets all federal and state drinking water standards and as such, the Demonstration Project has proven that purified water can be produced and safely added to the San Vicente Reservoir as part of a full-scale potable reuse project.

Task Leader, Reclaimed Water Master Plan, Los Angeles, California. Mr. Wetterau served as task leader on the groundwater replenishment treatment pilot study for the Los Angeles Department of Water and Power. The 16 month pilot study utilized microfiltration, reverse osmosis, and two alternative forms of advanced oxidation, to produce potable quality water from both a tertiary and secondary effluent source. As part of this study, Mr. Wetterau led several workshops and participated in public outreach

Education

MS – Environmental Engineering, University of Illinois, Urbana, Illinois, 1994

BS – Civil Engineering, University of Illinois, Urbana, Illinois, 1992

BA – Liberal Arts, Wheaton College, Wheaton, Illinois, 1992

Registration

Professional Engineer: Washington (1998), Oregon, and California

Honors/Awards

Board Certified Environmental Engineer (BCEE), American Academy of Environmental Engineers and Scientists

meetings and tours of the treatment facility. He also served as lead technical advisor for potable reuse aspects of the Reclaimed Water Master Plan, identifying recommended levels of treatment, site considerations, and brine disposal impacts for the city's future advanced treatment facilities.

Technical Reviewer, Groundwater Replenishment System (GWRS), Orange County, California. Mr. Wetterau provided technical review of membrane design for the world-class groundwater replenishment system project, which will provide up to 200,000 Orange County families with a new source of drinking water. The GWR System will reclaim and recycle up to 95 mgd of secondary effluent from the Orange County Sanitation District's Plant No. 1. The secondary effluent will undergo three additional levels of treatment, including microfiltration, 100-percent reverse osmosis treatment, and ultraviolet disinfection.

Lead Practitioner, Membrane Filtration Pilot, Design, and Construction. For the East Valley Water District in California, Mr. Wetterau provided senior technical oversight for the development of pilot protocol, plant operation, and data evaluation during the piloting of two alternative membrane filtration systems utilizing inline coagulation and direct filtration for reduction of disinfection byproduct precursors. Results of this pilot were then used in the preliminary and final design of an 8-mgd ultrafiltration facility utilizing inline coagulation for organics reduction. The facility is currently under construction, and Mr. Wetterau is providing senior oversight and review of submittals and request for information (RFI) responses.

Lead Practitioner, Membrane Filtration Upgrades Design, California. For the Olivenhain Municipal Water District in California, Mr. Wetterau provided senior technical oversight for the evaluation, recommendation, and design of facility upgrades for a 34-mgd ultrafiltration facility to improve plant performance and bring the plant in compliance with the USEPA Long Term 2 Enhanced Surface Water Treatment Rule. Mr. Wetterau led the coordination with the California Department of Public Health to identify the level of treatment and testing required for the upgraded facility, which include full tank deconcentration, modified integrity testing, tank aeration, and residuals handling, as well as changes to various ancillary systems.

Project Manager, Groundwater Desalination Pilot Study, Camarillo, California. Mr. Wetterau served as project manager for the design, construction, and operation of a groundwater desalination pilot plant for the City of Camarillo. This work was funded by the city through a Proposition 50 grant from the California Department of Water Resources (DWR). The purpose of the pilot plant was to demonstrate the effectiveness of the treatment processes and to obtain full-scale design criteria for the city's future 8-mgd groundwater desalination facility. The pilot plant tested alternative iron and manganese removal alternatives as pretreatment to reverse osmosis for wells experiencing considerable degradation in chlorides, sulfates, iron, and manganese. Nine months of operation were dedicated to an evaluation of five pretreatment processes, including oxygen quenching with sodium thiosulfate, oxidation and filtration with either air, chlorine dioxide, or free chlorine, and filtration using either dual media filters, pyrolucite filters, or microfiltration. The final six months of operation included optimization of the RO process with the selected pretreatment process.

Dorothy L. Meyer

CEQA

Ms. Meyer has over 27 years' experience with preparing and processing environmental documents per the California Environmental Quality Act (CEQA) the National Environmental Policy Act (NEPA), and other federal, state, and local laws and regulations. She has managed and actively participated in the environmental analysis for controversial, multi-million dollar private development and public works/infrastructure projects in compliance with CEQA and/or NEPA. Ms. Meyer's experience is highlighted below:

Project Manager, West Basin Water Recycling Plant Phase IV Expansion Project. Ms. Meyer served as project manager for preparing a MND for the West Basin Water District's capacity expansion at the West Basin Water Recycling Plant. This project involved expanding the treatment capacity for increased supply of recycled water for various applications, including industrial boiler feed water, irrigation water, and high-quality water for injection into groundwater to maintain the seawater intrusion barrier. The MND included particularly detailed analysis of air quality, biological, cultural resources, and hazardous materials issues and impacts.

Project Manager, Advanced Wastewater Treatment Facility. During her employment with the City of Los Angeles Bureau of Engineering, Ms. Meyer prepared and processed the environmental analysis, including an MND and EA for a reclaimed water project for the City of Los Angeles' Bureaus of Engineering and Sanitation, Department of Water and Power, and U.S. Bureau of Reclamation associated with the Terminal Island Treatment Plant Advanced Wastewater Treatment Facility Phase I (a.k.a. the Harbor Water Recycling Project). Areas of controversy included cultural resources, least tern nesting and water quality of the Dominguez Gap Barrier.

Technical Reviewer for Various City of Los Angeles Bureau of Engineering MND's and U.S. Army Corps of Engineers EA's. In 2011 to 2012, Ms. Meyer was the technical support and reviewer of the North Atwater Crossing Project (MND and EA), Donald C. Tillman In-Plant Storage Basin (EA) and Donald C. Tillman Multi-Use Facility (EA). The North Atwater Crossing Project is the development of a new multi-modal bridge over the Los Angeles River to facilitate pedestrian, bicycle and equestrian crossing of the River. Both the In-Plant Storage Basin and Multi-Use Facility Projects are located at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin.

Project Manager, Wastewater Collection System Improvement Program, Program EIR. Ms. Meyer stepped in as the City of Los Angeles, Bureau of Engineering project manager when the Program EIR was about two-thirds complete. Ms. Meyer completed preparing and processing this expedited environmental document that analyzed the environmental impacts common to most wastewater conveyance system projects for the entire City of Los Angeles. She also developed, executed, and trained others in the Consistency Assessment Process that was developed to analyze the impacts of individual conveyance projects with those analyzed in the Program EIR.

Education

BA – Geography, California State University, Long Beach, 1986

Minor (Certificate) in Environmental Studies, California State University, Long Beach, 1986

Certifications

Federal Highway Administration

NEPA Certificate, 1988

CEQA Task Leader, City of Los Angeles Integrated Resources Plan (IRP), California. Ms. Meyer was the task leader and technical expert for CEQA compliance for the multi - year strategic planning effort for the City of Los Angeles' IRP. The IRP is a facilities plan that addresses the wastewater facilities needed in the year 2020, while integrating future recycled water and urban runoff needs. The EIR was prepared to address the potential impacts of 12 site-specific and 8 program-level project components, all addressed individually as well as in varying degrees collectively under four Project Alternatives. The review and comment period for Draft EIR generated approximately 3,000 comments. The Final EIR was certified in November 2006.

Project Manager, Los Angeles Department of Water and Power On-Call Environmental Services, California. Ms. Meyer managed the analysis for, and preparation of, environmental documents for CEQA/NEPA compliance for the Los Angeles Department of Water and Power (LADWP) under a 3-year contract. Under this contract, Ms. Meyer managed, prepared, and distributed several successful Mitigated Negative Declarations (MNDs) for various potable (Magnolia Trunk Line, Parthenia and City Trunk Line South) and reclaimed (West Valley Water Recycling Project, Sepulveda Basin Water Recycling Project, and Hansen Area Water Recycling Project) water pipelines, with special emphasis on air quality, noise and traffic impacts to nearby residents and businesses, as well as biological and cultural impacts. Another successful MND for LADWP was the Santa Ynez Reservoir Cover Project, which included special biological, cultural and noise studies. Ms. Meyer also managed special biological and cultural resources studies for the Replacement/Repair of Transmission Facilities in the Angeles National Forest.

Project Manager and Technical Specialist, City of Los Angeles Bureau of Engineering, Local and State Coastal Development Permits, City of Los Angeles, California. Ms. Meyer, on behalf of the City of Los Angeles Bureau of Engineering, prepared and processed several local Coastal Development Permits (CDPs) and State CDPs associated with overnight and preferential parking districts with six primarily residential areas in the Venice and Del Rey Lagoon areas of the City. The applicant for the CDPs is the City of Los Angeles' Department of Transportation (LADOT) who created the parking districts as a tool to address the parking problems and the public safety and public welfare issues associated with vehicles that have no legitimate reason to be parked overnight in a given area and because the residences have been bearing the brunt of increased parking demands by non-residents in the late evenings and early mornings, which is adversely affecting the residence's ability to access their property or park in their neighborhoods.

Task Manager, Headworks Ecosystem Restoration Study, Environmental Assessment/Mitigated Negative Declaration, USACE, Los Angeles District, California. Ms. Meyer is a task manager of a recent contract for the preparation of an EA/Mitigated Negative Declaration to analyze various alternatives to restore a more natural, riparian habitat along the river within the boundaries of the Headworks site, which is a future underground water storage site that is owned and operated by the City of Los Angeles Department of Water and Power (the local sponsor). This work is being performed under contract to the USACE.

Lee C. Arnon, AIA, AICP, NCARB

Architect

Mr. Arnon has over 35 years of experience in community planning, architecture and design. Mr. Arnon has worked closely with municipal and county governments throughout the Western United States on complex industrial and government facilities including water and wastewater treatment improvement projects as well as transit, airport, fire and police facilities.

Project Manager, Los Angeles Department of Water and Power, Mid-Valley Water Facility Masterplan and Feasibility Study, City of Los Angeles, California. The 17 acre Tyrone Avenue Yard was master-planned to accommodate the water division's field maintenance operations including over 100,000sf of warehousing for Trunk Line, Main Line, Tool and Welding Shop, Meter Shop, Yard and Building Maintenance and Supply Chain Warehouse. In addition, the master-planned site included Water Quality Laboratory, Fleet Maintenance, CNG Fueling, Employee and Equipment Parking Garage, laydown yards and roadways for heavy equipment. Shared Support Facilities including offices, lockers and showers, breakroom, training and conferencing, security, and emergency operations. This effort consolidated the city's outdated facilities that were scattered across multiple locations in the San Fernando Valley and created a sustainability focused campus for the city's mission critical maintenance programs and disaster response.

Project Architect, Joint Base Fort Lewis McChord, Washington. Mr. Arnon served as the project architect for the new Wastewater Treatment Facility at the Joint Base Ft. Lewis McChord near Tacoma, Washington. The design-build project included an Administration Building with Control Room and Laboratory, Headworks Building, Main Process Building, Blower Building, Shop and Storage Buildings. The building design included a masonry rain-screen exterior envelope with standing seam metal roofs to produce a cohesive and integrated facility appearance. The project utilized the whole-building approach to design for energy conservation and sustainability and was produced in coordination with CDM Smith's in-house construction services.

Project Architect, U.S. Army National Training Center at Ft. Irwin, Californa. Mr. Arnon served as the project architect for the Water Treatment and Distribution System design-build project for the U.S. Army Corps of Engineers at Ft. Irwin, California. This large campus style water treatment facility included an Administration and Control Building, Main Process Building, Chemical Storage Building, and Treated Water Pump Station Building. The project was produced using 3D/4D design documentation technology in coordination with CDM Smith's in-house construction services.

Project Architect, U.S. Marine Corps Base at Camp Pendleton, California. Mr. Arnon served as the project architect for several design-build projects for the U.S. Marine Corps Base at Camp Pendleton, California including an advanced water treatment facility and two wastewater treatment facilities. The projects were produced using 3D/4D design documentation technology in coordination with CDM Smith's in-house construction services, and successfully matched design development and cost estimates throughout the project submittals. In addition to the above, all Camp Pendleton projects included specific requirements for integrating sustainable strategies and features into the design, provide for energy conservation, and Anti-Terrorism Force Protection requirements.

Education

Bachelor of Architecture, Arizona State University, 1979

Registration

Architecture:
Arizona
California
New Mexico
Idaho
Utah
Washington
Texas

Urban Planning:
AICP Certification

CDM Smith

Project Architect, Regional Water Quality Control Plant Expansion, Riverside, California. Mr. Arnon served as the project architect for several process and support buildings necessary to the expansion of the regional wastewater treatment plant including the Fine Screens Building, 6,400 square feet, the Scour Air Blower Building, 2,400 square feet, and the Primary Clarifier Electrical Building, 720 square feet. The new buildings are designed to enhance the architectural unity of the existing campus with the use of integral-colored split-face concrete block and precision-face concrete block in alternating horizontal bands.

Project Architect, David McCollom Water Treatment Plant Expansion for the Olivenhain Metropolitan Water District, San Diego, California. Mr. Arnon is the lead architect for the facility buildings necessary to expand the existing water treatment plant including upgrades to existing membrane facilities. New facilities include Solids Handling Building (5,400 sf), Storage and Parks Office Building (3,600 sf), Energy Recovery Turbine Building (1,500 sf), Backwash Equalization canopy (3,600 sf). Client concern for screening and noise abatement for surrounding upscale residential neighborhood resulted in an effort to downplay the industrial use and create a ranch-style appearance for the project.

Project Architect, Shafdan Anaerobic Digester Facility for the Dan Region Wastewater Treatment Plant, Tel Aviv, Israel. The purpose of the Shafdan Facility was to develop a land-based biosolids management program and eliminate the discharge of sludge into the Mediterranean Sea. In addition, the project captures digester gas for on-site power generation creating enough electricity to power the entire digester facility and provide a surplus to the plant. Mr. Arnon was the project architect for the five buildings that house and support the process facilities totaling approximately 16,000 square meters or 172,000 square feet.

Design Architect, Reverse Osmosis Process Facility, Amazon Data Center, Umatilla County, Oregon. This RO process facility is designed to treat municipal water for the data center cooling systems and includes RO Skids, chemical systems, booster pumps and separate electrical and control rooms. The fast-track project was produced for permitting in five weeks to meet data center construction schedules.

Design Architect, Fresh Water Delivery System, Rosemont Copper Company; Tucson, Arizona. Engineering and Procurement service for fresh water delivery system. The Fresh Water Delivery System was designed to supply a minimum delivery of approximately 2000 gpm and a maximum delivery of 5000 gpm of fresh water over an approximate 14-mile route and approximately 2400 feet rise in elevation with 5 booster pump stations. The water will be delivered to fresh/fire water storage tank located on the Rosemont property on the west side of the Santa Rita Mountains south of Tucson, Arizona. The design of the pump screening, security walls and equipment canopies were coordinated with the University of Arizona Santa Rita Experimental Range.

San Dieguito Pump Station, Rancho Santa Fe Irrigation District; San Diego, California. Located adjacent to the multi-arch buttress dam, the San Dieguito Pump Station conveys raw water from the San Dieguito Reservoir to the Badger Water Filtration Plant through an existing 30-inch pipeline. The 2,500 square foot building houses the main pump room, electrical room and chemical storage room. The building was designed with integral color concrete block walls, steel beams and metal roof deck. Materials were chosen for their visual appeal, durability, ease of maintenance, long–term economy and sustainability.

Bradley J. Fransen, P.E.

Senior Electrical Engineer

Mr. Fransen's 25-year background in electrical engineering with multiple engineering firms has given him valuable experience and insight into the various ways and methods electrical designs can be performed. This allows him to be able to determine the best way to do an electrical design based on the client's needs and project requirements leading to successful electrical designs. Mr. Fransen's experience includes sterling engine solar power, paralleling of multiple power sources, power distribution, control and instrumentation design, developing budgets, providing engineering and construction cost estimates, construction phase services, resident engineering, start-up, troubleshooting, flood damage inspections, engineering management, and construction supervision. Mr. Fransen has performed these services on a wide array of systems including medium and low voltage, industrial controls, and instrumentation in the United States and Israel. This experience has been gained as a consulting engineer and as a manufacturing engineer. He also has expertise in low-voltage and medium-voltage variable frequency drive (VFD) applications.

Lead Electrical Engineer, Riverside WQCP Phase 1 Plant Expansion, City of Riverside, California. Mr. Fransen led a team of engineers and designers to produce 160 electrical drawings for this plant expansion. Processes included primary treatment, digestion, FOG(fats, oil, and grease), TWAS disintegration, digester gas storage, and gas wasting. Equipment included grinders, pumps, clarifiers, mixers, boilers, gas flares, motor operated valves, and chemical feed. Electrical equipment included transformers, switchgear, MCCs, VFDs, UPSs, and Active Harmonic Filters. This was a complex project since the plant had to stay in operation throughout construction and demolition was required before new construction could commence. This led to deep creative thinking by the design team to develop many construction work sequences as part of the project deliverables.

Lead Electrical Engineer, Shafdan Anaerobic Digesters Facility, Tel-Aviv, Israel. Mr. Fransen led the electrical engineering for the addition of a large digester facility to the Shafdan Wastewater Treatment Plant located in Tel-Aviv, Israel. The design consisted of a 22 KV distribution system which featured two 22 KV feeders from the utility, six diesel standby generators, and eight bio-gas cogenerators. Mr. Fransen designed a control system with closed transition switching capable of paralleling multiple power sources. Normal operation is with the cogenerators running in the load sharing mode with the utility. If utility power fails, the diesel standby generators come on immediately to pick up emergency loads and the cogenerators are paralleled with the diesel standby generators to allow the plant to remain in operation. It is important to run the cogenerators at all times to eliminate wasting the bio-gas and to provide heat to the digestion process. When utility power returns, closed transition switching will provide bumpless transfer back to utility power, the diesel standby generators will be shut down, and the cogenerators will be back in the load sharing mode with the utility.

Lead Electrical Engineer, Power Monitoring and Control Systems(J-33-3), Orange County Sanitation District, Orange County, California. Mr. Fransen provided electrical engineering, design, and construction phase services for this large and technically demanding client. The project consisted of installing a new Power SCADA system to monitor power components at Plant 1. He modified the following equipment and

Education

B.S. – Electrical/Electronic Engineering, California State University, Chico, 1986

Registration

Professional Engineer: Arizona, California, Idaho, Kansas, Montana, Nebraska, and Utah

NCEES Registered

connected into the new Power SCADA system: LV and MV breakers, transformers, generator controls, battery chargers, UPS's, and power monitors. Equipment included many of the following: core switch, distribution switch, fiber cabinet, fiber optic cable, fiber termination unit, network panel, PLC panel, tube cable, and tube distribution unit.

Lead Electrical Engineer, Frito Lay Water Recovery and Reuse Project, City of Casa Grande, Arizona. Mr. Fransen provided electrical engineering, design, and construction phase services for this new 2 MGD wastewater treatment plant. Processes included membrane bio-reactors, low pressure reverse osmosis, and dewatering. Equipment included screens, pumps, clarifiers, bio-reactors, mixers, blowers, uv, centrifuges, and chemical feed. He also coordinated new power service with APS. Electrical equipment included switchboards, MCCs, VFDs, and Active Harmonic Filter. All MCCs, VFDs, and PLCs were networked together using Devicenet or Ethernet I/P.

Electrical Engineer, Clean Water Revival Project, Dublin San Ramon Services District, Pleasanton, California. Mr. Fransen completed the electrical engineering design for a fully automated MF/RO facility, including UV disinfection and a chemical feed system. He worked with the Pacific Gas and Electric Company to provide electrical service at 480 volts. He wrote specifications for motors, general electrical, low-voltage MCCs, low-voltage switchgear, fire protection system, and adjustable frequency drives. Mr. Fransen completed design of power distribution, conduit ductbank sections and routing, equipment layout, one-lines, motor control schematics, panel schedules, and calculations. He also coordinated scheduling, budgeting, drafting, lighting design, and electrical service and completed construction cost estimates.

Lead Electrical Engineer, Salinity Management Project, Carmel Area Wastewater District, Carmel, California. Mr. Fransen provided electrical engineering and design to add a microfiltration/reverse osmosis (MF/RO) facility to this existing plant. He also coordinated new power service with PG&E. Equipment included switchboard, MCCs, and VFDs, pumps, mixers, blowers, and air compressors.

Electrical Engineering Manager, Secondary Activated Sludge Facility 2 at Plant 1(P-102), Orange County Sanitation District, Orange County, California. Mr. Fransen managed a team of electrical engineers and technicians on project P1-102 to produce electrical design documents up to the 60 percent completion level for an 80-mgd secondary treatment facility. Duties included attending regular meetings with the client to discuss and solve design issues and problems; learning, following, and potentially improving OCSD design guidelines; and becoming familiar with the Plant 1 power distribution system and how it functions. Power distribution was at 12.47 kV, 4.16 kV, and 480 volts. Equipment included load interrupter switches, station-type power transformers, medium- and low-voltage switchgear, medium- and low-voltage solid state starters, 480-volt MCCs, variable frequency drives, Turblex Blowers, aeration basins, secondary clarifiers, and RAS/WAS pumping.

Lead Electrical Engineer, Agua Viva Water Treatment Facility, City of Yuma, Arizona. Mr. Fransen was responsible for the electrical engineering and design of a new 20-mgd (expandable to 40-mgd) water treatment facility. Systems included 12-kV and 480 volt power distribution, and generator paralleling switchgear to parallel two generators. Mr. Fransen was required to reuse an existing 480 volt, 1,250 KW diesel standby generator, and parallel in with a future 2,000 KW diesel standby generator.

Arlene E. Post
Outreach Coordination

Ms. Post has more than three decades experience leading and implementing all aspects of public communications and outreach strategies. A leader in designing and implementing award-winning public involvement and education initiatives, Ms. Post has worked on projects involving transportation, transit, environmental issues, water and wastewater planning, indirect potable reuse, historic preservation, parks and recreation. She possesses a strong background and capabilities in communication strategies, group process design and facilitation, and media relations, as well as intergovernmental and political relations. Her exceptional writing skills have been applied to create speeches, white papers, successful grant applications, compelling presentations, and innovative educational material, with a specialized ability to translate complex technical concepts for public understanding.

Technical Lead, Recycled Water Outreach for Los Angeles Department of Water and Power (LADWP), Los Angeles, California. Ms. Post is technical lead for CDM Smith's support of a multi-year outreach initiative as LADWP develops plans and programs to communicate with its public and engage stakeholders in the city's initiative to provide groundwater replenishment with recycled water. This includes coordination with the Department's recycled water staff, establishment of a citywide Recycled Water Advisory Group, development of participatory stakeholder workshops, engagement of key opinion leaders, preparation of collateral material, and establishment of communication strategies to engage and inform diverse constituencies across the City.

Public Communications Lead for Honolulu Board of Water Supply (BWS) Water Master Plan and Condition Assessment Program Collaborating with BWS staff, Ms. Post has developed messaging and communications initiatives to inform ratepayers of the significance and expected benefits of the Board's master planning process, including coaching and guidance for executive staff. As part of this project, she has helped develop strategies to address negative press and ratepayer outrage stemming from inaccurate bills created by a new billing system that surfaced concurrent with ongoing mainline breaks.

Technical Liaison, Advanced Water Purification Demonstration Facility, San Diego, California. Ms. Post coordinated activities to develop education strategies and a facility tour to acquaint visitors with the process, purpose and benefits of the City's Advanced Water Purification Demonstration Facility. The experience incorporates pre-and post-tour experiences, signage, and other elements that explain the purification process and its effectiveness in transforming wastewater into a product that can be safely used to augment supplies in one of the city's drinking-water reservoirs.

Director of Resource Conservation and Public Outreach for Las Virgenes Municipal Water District, Calabasas, California. Ms. Post provided executive leadership for all aspects of communications, including public outreach, media and legislative relationships, stakeholder relations, publications, and education. She was responsible for leading the District's efforts in watershed stewardship, conservation, cross-connection protection, customer service, planning, and regulatory compliance. She applied long- and short-term

Education

B.A – Modern American Literature (Minor in Mass Media), State University of New York at Albany, Albany New York (Magna cum Laude), 1971

Honors/Awards

Public Communications Program of the Year, American Water Works Association

Small Agency Outreach, California Association of Sanitation Agencies

Best Educational Program, US EPA Region 9

Huttleston Award for Superior Service, New York State Parks Commission

Best Government Publication Honorable Mention Public Relations Society of America –New York

Outstanding Publication, New York State Recreation and Parks Society

Best Educational Exhibit, New York State Fair Board of Directors

communications strategies to build understanding and support for the utility's environmentally progressive water and wastewater services in the Malibu Creek Watershed. For example, she:

- Designed and led the successful, multi-year strategy for the multi-county JPA of Las Virgenes MWD (LA County) and Triunfo Sanitation District (Ventura County) that built public awareness and understanding of the stewardship and regulatory challenges of wastewater services in an environmentally sensitive region. This effort culminated in an overwhelming grassroots response to proposed regulations, resulting in a workable permit for the wastewater treatment facility and savings in excess of $100M.

- Established the District's first Community Outreach Strategic Plan, based on a survey of customer attitudes and communication preferences. Recurring customer surveys formed the basis for a coordinated communications program, including publications, website, in-school education programs, tours and events, speakers bureau presentations, and a Water Leadership Forum to update local officials and public leaders as well as gather their ideas and input.

- Calmed community concern and media fervor about perceived health risks of biosolids composting. Planned and coordinated a public workshop within four days, then facilitated public discussion and testimony by national experts and the U.S. Environmental Protection Agency (EPA).

- Led communications during a cross-connection incident, including informing impacted residents, schools, and businesses; ensuring coordination and consistent messages; ongoing media relations' and serving as press spokesperson.

Director of Community Relations for the New York State Office of Mental Retardation and Developmental Disabilities, Albany, New York. Ms. Post developed and managed statewide communications strategies to support the agency's transition to customer-driven services, setting the tone for a new focus on clients and their families.

Director of Communications for the Oregon Department of Transportation, Salem, Oregon. Ms. Post was responsible for all public communications, outreach, and government relations across the state, managing an annual $2 million budget and a staff of 31. She led comprehensive public outreach, publications, public events, community, press and media relations, intergovernmental and legislative relations, and internal communications for a statewide staff of more than 4,000.

Director of Communications for New York State's Office of Parks, Recreation and Historic Preservation, Albany, New York. Ms. Post was the executive manager responsible for developing and implementing statewide public outreach initiatives, media and press relations, marketing, and publications involving 185 facilities with more than 60 million annual visitors.


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November 3, 2016

Mr. David R. Lippman, PE
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302

Subject: Cost to Perform Services for the Recycled Water Seasonal Storage Demonstration Project Preliminary Design and Environmental Analysis

Dear Mr. Lippman:

Per the instructions of the RFP, CDM Smith has provided our cost to perform the services for this project and a schedule of rates separately from our proposal.

If you have any questions, please contact me at (213) 457-2200 or via email at ebersolddb@cdmsmith.com.

Sincerely,

David B. Ebersold
Vice President
CDM Smith Inc.

EXHIBIT 1

Las Virgenes Municipal Water District
Recycled Water Seasonal Storage Demonstration Project Preliminary Design and Environmental Analysis
Preliminary Design Services Manhour Estimate (10/31/16)

		CDM Smith													Estimated	Project Fee Estimate		
			TRC/			Design Services					CEQA	Cost				CDM Smith		
Task	Task Description	CSL	QAQC	PM	PE	CIVIL	STRU/ ARCH	PROC	ELEC	HVAC	NEPA	Estimator	Draft	Admin	Hours	Labor	ODC's	Total
		285	275	285	175	170	170	170	200	170	175	165	130	115		1	1	
TASK 1: PRELIMINARY LAYOUTS																		
1.1	Investigate Alternative Processes			1	2			8							11	$1,995	$50	$2,045
1.2	Investigate Learning Center/Assembly Room Requirements			1	2		8								11	$1,995	$50	$2,045
1.3	Develop Demo Test Concepts			2	8			8							18	$3,330	$83	$3,413
1.4	Prepare Preliminary Layouts			1	2	2	2	8					8	1	24	$3,830	$96	$3,926
	Subtotal	0	0	5	14	2	10	24	0	0	0	0	8	1	64	$11,150	$279	$11,429
Task 2: DEMONSTRATION FACILITY PRELIMINARY DESIGN																		
2.1	Prepare Demo Plant Preliminary Design																	
	2.1.1 Title Sheet/Notes/Misc.				1	2							4		7	$1,035	$26	$1,061
	2.1.2 Test Facility Building & Process Layout (1)			1	2	14							12		29	$4,575	$114	$4,689
	2.1.3 Process (1)			1	4			14					12		31	$4,925	$123	$5,048
	2.1.4 Electrical and Instrumentation (1)			1	2				14				12		29	$4,995	$125	$5,120
2.2	Prepare Design Criteria			2	4	6	6	12	8	4				2	44	$7,860	$197	$8,057
2.3	Preliminary Design Memo	2	12	2	8	6	8	14	6	2	4		8	8	80	$14,800	$370	$15,170
	Subtotal	2	12	7	21	28	14	40	28	6	4	0	48	10	220	$38,190	$955	$39,145
Task 3: PROCUREMENT OPTIONS																		
3.1	Discussions with Vendors			2	4			8							14	$2,630	$66	$2,696
3.2	Develop Procurement Options			2	4			6							12	$2,290	$57	$2,347
	Subtotal	0	0	4	8	0	0	14	0	0	0	0	0	0	26	$4,920	$123	$5,043
TASK 4 - CEQA/NEPA DOCUMENTATION																		
4.1	Perform CEQA/NEPA Analyses (Exemption)		1	1							30			2	34	$6,040	$151	$6,191
	Subtotal	0	1	1	0	0	0	0	0	0	30	0	0	2	34	$6,040	$151	$6,191
Task 5: REGULATORY ASSISTANCEDEMONSTRATION FACILITY PRELIMINARY DESIGN																		
5.1	Regulatory Assistance			3	8			8							19	$3,615	$90	$3,705
5.2	Meeting with Regulators			3	8			8					2		21	$3,875	$97	$3,972
	Subtotal	0	0	6	16	0	0	16	0	0	0	0	2	0	40	$7,490	$187	$7,677
Task 6: SCHEDULE																		
6.1	Develop Project Schedule for Demo Project			1	6	2		4						2	15	$2,585	$65	$2,650
	Subtotal	0	0	1	6	2	0	4	0	0	0	0	0	2	15	$2,585	$65	$2,650
TASK 7 - MEETINGS AND WORKSHOPS																		
7.1	Kick-Off Meeting (1)			3	3			3						1	10	$2,005	$50	$2,055
7.2	Progress Meetings (2)			2	4			4	2						12	$2,350	$59	$2,409
7.3	JPA Staff Workshops (2)	2		6	6			5						1	21	$4,465	$112	$4,577
	Subtotal	2	0	11	13	0	0	13	2	0	0	0	0	2	43	$8,820	$221	$9,041
Task 8: EXISTING MATERIAL REVIEW																		
8.1	Review Miscellaneous Background Materials				2	1	2	2	2	1				1	11	$1,885	$47	$1,932
8.2	Review Basis of Design Report			1	2			4							7	$1,315	$33	$1,348
	Subtotal	0	0	1	4	1	2	6	2	1	0	0	0	1	18	$3,200	$80	$3,280
TASK 9 - SITE VISITS																		
9.1	Site Visit No. 1 (Initial with Kick-off meeting)			3	3			3	4						13	$2,690	$67	$2,757
9.2	Site Visit No. 2 (confirmation with Workshop)			3	3			3							9	$1,890	$47	$1,937
	Subtotal	0	0	6	6	0	0	6	4	0	0	0	0	0	22	$4,580	$115	$4,694
TASK 10 - BOARD MEETINGS																		
10.1	JPA Board Meetings	2		4	6			4						1	17	$3,555	$89	$3,644
	Subtotal	2	0	4	6	0	0	4	0	0	0	0	0	1	17	$3,555	$89	$3,644
TASK 11 - ESTIMATE OF PROBABLE COSTS																		
11.1	Prepare Engineer's Estimate for Demo Plant			2	8	4		4				20		2	40	$6,860	$172	$7,032
	Subtotal	0	0	2	8	4	0	4	0	0	0	20	0	2	40	$6,860	$172	$7,032
	TOTAL(ALL TASKS)	6	13	48	102	37	26	131	36	7	34	20	58	21	539	$97,390	$2,435	$99,826
OPTIONAL TASKS																		
4.2	Prepare Negative Declaration		10	2	12	8	8	8	8	4	160			16	236	$41,820	$1,041	$42,661
5.3	Perform NDMA Testing			2	24			24						2	52	$9,080	$3,227	$12,307
6.2	Develop Project Schedule for Permanent Project			2	4	3		3						2	14	$2,520	$63	$2,583

File: Las Virgenes Cost Proposal Final_.xlsx
Spreadsheet: BUDGET

CDM Smith
Date:11/3/2016
Time:11:31 AM

CDM Smith
Schedule of Hourly Rates

CATEGORIES

PROFESSIONAL SERVICES:

OFFICER	$285
PRINCIPAL/ASSOCIATE	$235
SUPERVISING PROFESSIONAL	$185
SENIOR PROFESSIONAL	$170
PROFESSIONAL II	$155
PROFESSIONAL I	$135

PROFESSIONAL SUPPORT SERVICES:

SENIOR SUPPORT SERVICES	$165
STAFF SUPPORT SERVICES	$130

FIELD SERVICES

SENIOR PROFESSIONAL	$165
PROFESSIONAL	$130

PROJECT SUPPORT SERVICES

PROJECT ADMINISTRATION	$115

Mileage will be billed at the current IRS rate. Other direct expenses will be billed at actual cost.

ITEM 10A

INFORMATION ONLY

December 5, 2016 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

Subject : Supply and Delivery of Aluminum Sulfate: Award of Bid

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On October 25, 2016, the LVMWD Board, acting as Administering Agent of the JPA, accepted a bid from Thatcher Company of California, Inc., in the amount of $17,052, and authorized the General Manager to issue a one-year blanket purchase order, in the amount of $18,757, with four one-year renewal options, for the supply and delivery of aluminum sulfate.

SUMMARY:

Aluminum sulfate is used to enhance the coagulation of solids during the tertiary filtration process at the Tapia Water Reclamation Facility. Shipments are needed approximately every three months. The annual contract with the JPA's vendor, Chemtrade, expired October 31, 2016. As a result, a request for bids was issued on September 14, 2016, and four responses were received and publicly opened.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The annual cost of aluminum sulfate is not expected to exceed $18,757, which is the bid amount of $17,052 plus a 10% contingency. The competitive bid process resulted in a 1.6% cost-savings as compared to current vendor's proposed renewal pricing. Sufficient funds for aluminum sulfate are available in the adopted Fiscal Year 2016-17 JPA Budget and will be proposed in future year budgets.

DISCUSSION:

Background:

The annual contract for aluminum sulfate with Chemtrade expired on October 31, 2016. There

were three remaining renewal options for the contract; however, Chemtrade's best and final renewal offer was $0.856 per gallon, which reflected a 17% increase as compared to the original contract pricing. To ensure the JPA maintained competitive pricing, a new request for bids was issued on September 14, 2016. The request for bids resulted in unit pricing that was 1.6% lower than proposed renewal pricing.

Bid Process:

A request for bids was posted on the LVMWD website, advertised in the *The Acorn,* and sent to five different vendors who previously expressed an interest in chemical bids. Four bid responses were received and publicly opened. Thatcher submitted the lowest bid with a unit price of $0.84 per gallon or $310 per dry ton.

Bid Summary:

Following is a summary of the bids:

Bidder	Unit Price (gallon/dry ton)	Bid Total
Thatcher	$ 0.84 gal $ 310 ton	**$17,052.00**
Chemtrade	$ 0.8696 gal $ 320 ton	$17,652.88
Eco Services	$ 0.8860 gal $ 336 ton	$17,984.85
Univar USA, Inc.		no bid

GOALS:

Ensure Effective Utilization of the Public's Assets and Money

Prepared by: Gretchen Bullock, Purchasing Supervisor

ATTACHMENTS:

Thatcher Aluminum Sulfate Bid

Las Virgenes Municipal Water District
Bid Form-Schedule
Aluminum Sulfate

The undersigned states and declares as follows: that the bidder has carefully read and examined the Bid Documents; Bid Notice; Instruction to Bidders; Bid Specifications including exhibits; Bid Form-Schedule; and that the bidder will comply with the bid terms and conditions. The undersigned agrees to supply and deliver materials in strict conformity with the specifications and instructions enclosed with the Invitation for Bids for the prices set forth below in this bid schedule.

It is understood that this bid shall remain open and shall not be withdrawn for a period of ninety (90) days from the date prescribed for the opening of the bid.

It is further agreed that the materials/services to be furnished under this bid shall be delivered at such time and in such quantities as called for by the Las Virgenes Municipal Water District. The District may extend the term of this contract by written notice to the supplier at the end of the contract period.

CONTRACT TERM as follows: initial contract term shall be good for one (1) year from date of contract execution. Four (4) additional one (1) year renewals may be negotiated at the District's option.

Materials to be furnished under this bid shall be delivered FOB Destination Freight Pre-Paid and Allowed to Las Virgenes Municipal Water District's Tapia Water Reclamation Facility, 731 Malibu Canyon Road, Calabasas, CA 91302 in the manner set forth in the Bid Scope and Specifications.

All bidders are required to submit the following information with their bid

- Completed Bid Form-Schedule *(2 pages)*
- Current contact information for three customers bidder is currently supplying with Aluminum Sulfate
- Product information/technical data sheet
- Global Harmonized System-Safety Data Sheet (GHS-SDS)

The bidder's authorized officer identified below hereby declares that the representations in this bid are true and correct and of my own personal knowledge, and that these representations are made under penalty of perjury under the laws of the State of California, and that I am duly authorized to bind this bidder to this bid.

>>>continued on next page<<<

Bid Item No.	Quantity	Unit of Measure UOM	Description	Unit Price	Extended Price
1.	20,300	gallon	Aluminum Sulfate	$ 0.84	$ 17,052.00
			Refer to Bid Scope & Specifications for detailed description		
List unit price for Dry Ton Conversion-->				$ 310.00	
			Total Bid	**$** 17,052.00	

Written Total Bid Amount:

Seventeen thousand fifty-two dollars and zero cents.

Notes or Exceptions:

None.

Addendum Acknowledgement (if applicable):

Addendum #1 ☐ Signed: Not applicable.

Bidder:

THATCHER COMPANY OF CALIFORNIA, INC.
Corporate Name of Bidder

October 3, 2016
Date

By: Craig N. Thatcher
Authorized Signature

President
Title

Craig N. Thatcher
Print Name

kyle.hallsten@tchem.com; wendy.richmond@tchem.com
E-mail

P. O. Box 27407

(562) 803-0563
Phone

Salt Lake City, UT 84127-0407
Address

(562) 803-8697
Fax

ITEM 10B

INFORMATION ONLY

December 5, 2016 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject : Reservoir No. 2 Improvements: Shade Ball Effectiveness

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SUMMARY:

In May 2015, the JPA installed shade balls in Reservoir No. 2 to improve the quality of recycled water supplied from the reservoir. Water quality data shows that the shade balls, together with lining of reservoir's earthen sides, have been very effective. Average annual turbidity levels in the reservoir have decreased by more than 80%.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

DISCUSSION:

As part of the Reservoir No. 2 Improvements Project, the JPA lined the earthen sides of the recycled water reservoir and purchased shade balls to cover the water surface. The shade balls prevent exposure of the water column to sunlight, which promotes algal growth. The first delivery of shade balls was on May 23, 2015, and subsequent deliveries occurred over the following weeks until the reservoir was completely covered.

Tapia Water Reclamation Facility's NPDES permit sampling point for discharges to the Los Angeles River outfall (005) is immediately downstream of Reservoir No. 2. Historically, high turbidity in the reservoir caused by algal growth made permit compliance difficult and lead to occasional regulatory violations. The turbidity limit is 2 NTU, measured as a daily average. Prior to installation of shade balls, the annual average turbidity in the recycled water drawn form the reservoir was 2.65 NTU in 2013 and 2.89 NTU in 2014. After completion of the project and installation of the shade balls, the annual average turbidity dropped to 0.42 NTU in 2015 and, so far in 2016, it is 0.52 NTU, corresponding to a decrease of more than 80%.

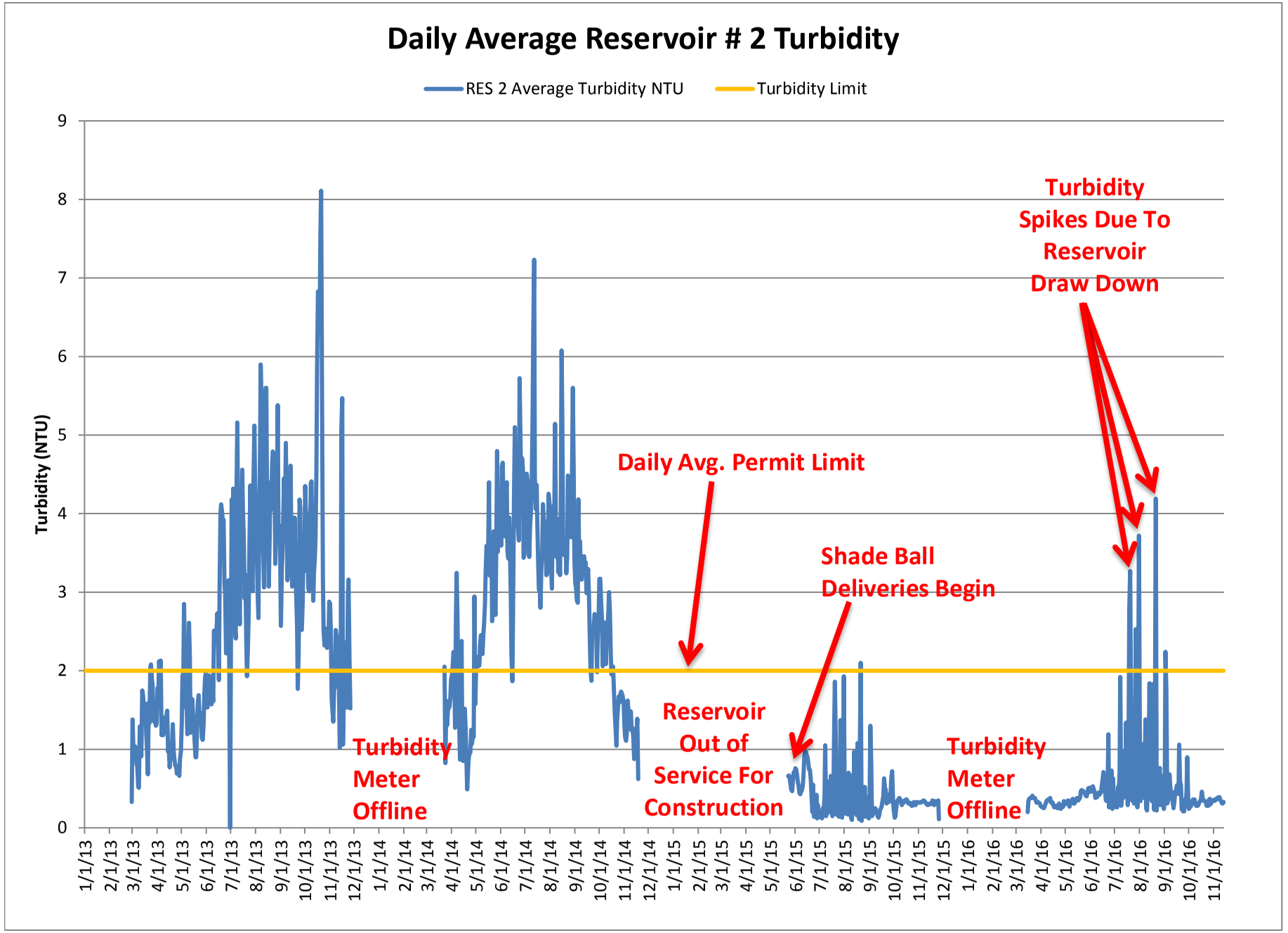
The attached graph shows the effectiveness of the shade balls based upon daily average turbidity. As shown, turbidity in the reservoir consistently exceeded the 2 NTU limit between mid-Spring and early Fall prior to installation of the shade balls. The high turbidity was due to extended exposure of the reservoir to sunlight and the resulting algal growth during that time of year. However, once the shade balls were installed, the turbidity remained below the 2 NTU limit, except for occasional instances when high recycled water demand caused the reservoir to be drawn down to extremely low levels, stirring up sediment from the bottom. These occasional events do not result in regulatory compliance problems because discharge to the 005 outfall does not occur during periods of high recycled water demand.

Overall, the installation of shade balls and lining of Reservoir No. 2 have proven to be effective in improving water quality and resolving turbidity issues for discharges to the 005 outfall.

Prepared by: Brett Dingman, Water Reclamation Manager

ATTACHMENTS:

Reservoir No. 2 Turbidity Graph


Daily Average Reservoir # 2 Turbidity
RES 2 Average Turbidity NTU
Turbidity Limit
Turbidity (NTU)
0
1
2
3
4
5
6
7
8
9
Turbidity Spikes Due To Reservoir Draw Down
Daily Avg. Permit Limit
Shade Ball Deliveries Begin
Turbidity Meter Offline
Reservoir Out of Service For Construction
Turbidity Meter Offline
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