LAS VIRGENES - TRIUNFO
JOINT POWERS AUTHORITY
SPECIAL BOARD MEETING
AGENDA
899 Kanan Road, Oak Park, California 91377

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 September 1, 2015

PLEDGE OF ALLEGIANCE

1. CALL TO ORDER AND ROLL CALL

A The meeting was called to order at _____ p.m. by _____ in the Las Virgenes Municipal Water District headquarters, and the Clerk of the Board called the roll.

Las Virgenes Municipal Water District	Present	Left	Absent
Glen Peterson, Vice Chair	_____	_____	_____
Charles Caspary	_____	_____	_____
Jay Lewitt	_____	_____	_____
Leonard Polan	_____	_____	_____
Lee Renger	_____	_____	_____
Triunfo Sanitation District			
Steven Iceland	_____	_____	_____
Michael McReynolds	_____	_____	_____
Janna Orkney	_____	_____	_____
Michael Paule	_____	_____	_____
James Wall, Chair	_____	_____	_____

2. APPROVAL OF AGENDA

A Moved by ___, seconded by ___, and ___, that the agenda for the Special Meeting of September 1, 2015, be approved as presented/amended.

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 JPA Meeting of August 3, 2015 Approve **(Pg. 5)**

5. ILLUSTRATIVE AND/OR VERBAL PRESENTATION AGENDA ITEMS

6. ACTION ITEMS

A Recycled Water Seasonal Storage: Basis of Design Report (Pg. 10)

Accept the proposal from MWH Global to prepare a Recycled Water Seasonal Storage Basis of Design Report and authorize the Administering Agent/General Manager to execute a professional services agreement with MWH Global, in the amount of $462,825, for the work; authorize the Administering Agent/General Manager to execute Amendment No. 1 with RMC Water and Environment for the Woodland Hills Country Club Preliminary Design Report, in the amount of $52,820, to add a conceptual evaluation of seasonal storage at Encino Reservoir; and approve an additional budget and appropriation of $406,480 for CIP No. 10587 to fund the proposed studies.

B Purchase of Dewatering Container and Ramp for Disposal of Grit and Rags (Pg. 35)

Approve the purchase of a dewatering container and ramp from Wastequip, LLC in the amount of $27,956.26.

C Financial Review: Fourth Quarter of Fiscal Year 2014-15 (Pg. 42)

Receive and file the financial review for the fourth quarter of Fiscal Year 2014-15.

7. BOARD COMMENTS

8. ADMINISTERING AGENT/GENERAL MANAGER REPORT

9. FUTURE AGENDA ITEMS

10. INFORMATION ITEMS

A Tapia Channel Mixing Improvements Project: Change Order Nos. 1 and 2 (Pg.54)

B Flow Augmentation to Malibu Creek: Cost and Economic Impact (Pg. 59)

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)):

Las Virgenes - Triunfo Joint Powers Authority v. United States Environmental Protection Agency and Heal the Bay, Inc. v. Lisa P. Jackson

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
4232 Las Virgenes Road, Calabasas, CA 91302
818.251.2100

August 26, 2015

Call and Notice of Special Meeting of the Governing Board of the
Las Virgenes – Triunfo Joint Powers Authority

A Special Meeting of the Governing Board of the Joint Powers Authority is hereby called, and notice of said Special Meeting is hereby given for 5:00 p.m. on Tuesday, September 1, 2015 at Oak Park Library, 899 N. Kanan Road, Oak Park, California 91377 to consider the following:

1. Call to Order and Roll Call
2. Special Meeting of September 1, 2015 (Agenda attached)
3. Adjournment

By Order of the Board of Directors
JAMES WALL, Chair

David W. Pedersen, P.E.
Administering Agent General Manager
Joint Powers Authority

c: Each Director

LAS VIRGENES – TRIUNFO JOINT POWERS AUTHORITY
4232 Las Virgenes Road, Calabasas CA 91302

MINUTES
REGULAR MEETING

5:00 PM August 3, 2015

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance to the Flag was led by Chair James Wall.

1. CALL TO ORDER AND ROLL CALL

A Call to order and roll call

The meeting was called to order at **5:01 p.m.** by Chair James Wall in the Las Virgenes Municipal Water District headquarters at 4232 Las Virgenes Road in Calabasas. Josie Guzman, Clerk of the Board, conducted the roll call.

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

Absent: Director(s): Orkney

2. APPROVAL OF AGENDA

Director Peterson moved to approve the agenda. Motion seconded by Director Lewitt, and carried by the following vote:

AYES: Director(s): Caspary, Iceland, Lewitt, McReynolds, Paule, Peterson, Polan, Renger, and Wall
NOES: Director(s): None
ABSENT: Director(s): Orkney

3. PUBLIC COMMENTS

None.

4. CONSENT CALENDAR

A Minutes: Regular JPA Meetings of May 4, 2015, and July 6, 2015

Director Polan requested clarification on which community was meant to be referenced in the Minutes of July 6, 2015, Item 5A, last sentence of the fifth paragraph. Administering Agent/General Manager David Pedersen suggested replacing the word "community" with "JPA's service area."

Director McReynolds moved to approve the Minutes of the Regular JPA Meeting of May 4, 2015, and July 6, 2015 as corrected. Motion seconded by Director Iceland, and carried by the following vote:

AYES: Director(s): Caspary, Iceland, Lewitt, McReynolds, Paule, Peterson, Polan, Renger, and Wall
NOES: Director(s): None
ABSENT: Director(s): Orkney

5. ACTION ITEMS

A September 2015 Joint Power Authority Board Meeting

Cancel the regular meeting of the Las Virgenes – Triunfo Joint Powers Authority Board on September 7, 2015, and reschedule the meeting for an alternate date.

Administering Agent/General Manager David Pedersen presented the report.

Director Renger moved to cancel the regular meeting of Las Virgenes – Triunfo Joint Powers Authority on September 7, 2015, and schedule a special meeting on September 1, 2015, at 5:00 p.m., at the Oak Park Library subject to the library's availability, or at Las Virgenes headquarters if the library is unavailable. Motion seconded by Director McReynolds, and carried by the following vote:

AYES: Director(s): Caspary, Iceland, Lewitt, McReynolds, Paule, Peterson, Polan, Renger, and Wall
NOES: Director(s): None
ABSENT: Director(s): Orkney

B Characterization, Evaluation and Control of Invasive Species in the Malibu Creek Watershed: Authorization of Research Project

Authorize the General Manager/Administering Agent to execute a research project agreement in a form approved by Legal Counsel, with Pepperdine University in the amount of $50,841.

Administering Agent/General Manager David Pedersen provided introductory remarks.

Director of Resource Conservation and Public Outreach Carlos Reyes provided

an overview of the proposed research project to study the impact of invasive species in the Malibu Creek Watershed.

Debbie Sharpton, Executive Director of the Mountains Restoration Trust, responded to questions regarding the removal of crayfish from the Malibu Creek Watershed and from private properties.

Gary Bucciarelli, representing the University of California Los Angeles La Kretz Center for California Conservation Science, responded to questions regarding potential impacts to the research study during the rainy season and the probability of comparing the brackish stream to other sites.

Administering Agent/General Manager David Pedersen responded to a question regarding whether the Regional Water Quality Control Board (Regional Board) had been informed of this research study by indicating that staff would inform the Regional Board and Heal the Bay, Inc. of this study, and seek their input on the scope of work.

Dr. Lee Kats, Pepperdine University Vice Provost for Research and Strategic Initiatives and Chair of the Natural Science Department, responded to questions regarding the lifespan of crayfish, which is dependent on food availability and water temperature.

Director Peterson moved to approve Item 5B. Motion seconded by Director Iceland, and carried by the following vote:

AYES: Director(s): Caspary, Iceland, Lewitt, McReynolds, Paule, Peterson, Polan, Renger, and Wall
NOES: Director(s): None
ABSENT: Director(s): Orkney

6. BOARD COMMENTS

None.

7. ADMINISTERING AGENT/GENERAL MANAGER REPORT

Administering Agent/General Manager David Pedersen reported on the Quarterly Tour of the wastewater treatment, water recycling, and composting facilities held on August 1, 2015; he also explained that Senator Dianne Feinstein introduced the *California Emergency Drought Relief Act*, which could expand recycling projects and propose projects to Congress that would best fit the Title XVI program. Mr. Pedersen also reported the District had received approval from the State Water Resources Control Board Division of Drinking Water, Regional Water Quality Control Board, and the County Health Department for improvements at Rancho Las Virgenes Composting Facility for

the Residential Recycled Water Fill Station Program, which is anticipated to be available in late August; staff will bring an item on the next agenda for preliminary design proposals for the Recycled Water Seasonal Storage Reservoir.

8. FUTURE AGENDA ITEMS

None.

9. INFORMATION ITEMS

A Tapia Water Reclamation Facility: Flood Protection Update

Administering Agent/General Manager David Pedersen responded to questions related to accumulation of debris within the creek, debris and vegetation removal, and Rivertech's floodplain evaluation. He noted that staff would communicate with California State Parks regarding a long-term maintenance program for debris/vegetation removal within the creek area.

B Recycled Water Reservoir No. 2 Improvements: Final Acceptance

10. PUBLIC COMMENTS

None.

11. CLOSED SESSION

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

Las Virgenes - Triunfo Joint Powers Authority v. United States Environmental Protection Agency and Heal the Bay, Inc. v. Lisa P. Jackson

The Board recessed to Closed Session at **5:58 p.m.** and reconvened to Open Session at **6:20 p.m.**

District Counsel Wayne Lemieux reported the Board approved a budget for District Counsel to file briefings in the appeal of Heal the Bay, Inc. v. Lisa P. Jackson, and authorized District Counsel to file an appeal to the Environmental Protection Agency's National Freedom of Information Officer.

12. ADJOURNMENT

Seeing no further business to come before the Board, the meeting was duly adjourned at **6:21 p.m**.

James Wall, Chair

ATTEST:

Glen Peterson, Vice Chair

September 1, 2015 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject: Recycled Water Seasonal Storage: Basis of Design Report (Pg.)

SUMMARY:

On November 3, 2014, the Board approved a proposal from MWH Global (MWH) to prepare a recycled water seasonal storage plan of action. The approach to develop the plan of action centered on conducting individual interviews with the JPA Board members and engaging a broad cross section of stakeholders in three public workshops. The workshops resulted in six conceptual scenarios ranging from TMDL compliance with advanced nutrient removal at Tapia to a regional indirect potable reuse (IPR) project to balance the constant supply of recycled water with fluctuating demands.

On April 6, 2015, the JPA Board considered stakeholder comments on the six conceptual scenarios and directed staff to develop a plan of action focused on Scenario No. 4, use of Las Virgenes Reservoir for indirect potable reuse, and Scenario No. 5, re-purposing of Encino Reservoir for seasonal storage. The Plan of Action, approved by the JPA Board on July 6, 2015, outlined the objectives, strategies and initial actions to move forward on a parallel path for both scenarios until a decision can be made to focus on one preferred scenario. Materials from the workshops and the Plan of Action are available on the LVMWD website at http://www.lvmwd.com/your-water/recycled-water/recycled-water-seasonal-storage.

One of the initial actions called for in the Plan of Action is to complete a Basis of Design Study (BODS). The BODS will involves preliminary engineering analyses for Scenarios Nos. 4 and 5 to address items such as reservoir management, hydraulics, detailed schedule information, costs of each option, potential implementation issues and potential fatal flaws. As authorized by the Board on July 6, 2015, staff and MWH developed the attached scope of work for the BODS with a cost of $462,825. The BODS report will take approximately seven months to complete.

Additionally, staff has met with Los Angeles Department of Water and Power (LADWP) executives to discuss Scenario No. 5 and identify key elements of a proposed joint JPA-LADWP investigation of the scenario. Understanding the items selected for investigation was critical to moving forward with Scenario No. 5. Investigating the impact of water quality changes to Encino Reservoir, developing water quality mitigation measures and addressing any impacts or changes to the current/future uses of the reservoir are included in the MWH proposal (Task 3) at a cost of $71,920. Investigating infrastructure improvements and opportunities to discharge recycled water to the sanitary sewer system to supplement the Tillman Water Reclamation Plant influent will be conducted by RMC as an amendment to Woodland Hills Country Club Preliminary Design Report at a cost of $52,820. The total cost of $124,740 for these investigations is proposed to be shared equally by the JPA and LADWP.

RECOMMENDATION(S):

Accept the proposal from MWH Global to prepare a Recycled Water Seasonal Storage Basis of Design Report and authorize the Administering Agent/General Manager to execute a professional services agreement with MWH Global, in the amount of $462,825, for the work; authorize the Administering Agent/General Manager to execute Amendment No. 1 with RMC Water and Environment for the Woodland Hills Country Club Preliminary Design Report, in the amount of $52,820, to add a conceptual evaluation of seasonal storage at Encino Reservoir; and approve an additional budget and appropriation of $406,480 for CIP No. 10587 to fund the proposed studies.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of the proposed work is $515,645 with $62,370 to be reimbursed by LADWP. The adopted Fiscal Year 2015-16 JPA Budget includes funding for studies related to seasonal storage of recycled water under CIP No. 10587. Costs associated with CIP No. 10587 are allocated 70.6% to LVMWD and 29.4% to Triunfo Sanitation District. The recently completed Plan of Action was also performed with funding from CIP No. 10587. An additional budget and appropriation of $406,480 is required for the work. Following is a summary of the costs associated with CIP No. 10587 and basis for the additional appropriation.

MWH Plan of Action (completed)	$ 174,716
MWH BODR	$ 462,825
RMC Encino Res Investigation	$ 52,820
LADWP Contribution	$ (62,370)
Total	**$ 627,991**
Existing Budget/Appropriation	$ 315,164
Additional Appropriation Req'd	$ 312,827
10% contingency	$ 31,283
Prior to LAWP Reimbursement	$ 62,370
Total Additional Appropriation Req'd	**$ 406,480**

DISCUSSION:

Background:

The JPA first started developing the recycled water system in the 1970s. Since the initial installation of the Las Virgenes Valley system, the recycled water system has grown to provide service in both Los Angeles and Ventura counties. Of the 10,000 acre-feet (AF) of recycled water produced at the Tapia Water Reclamation Facility each year, approximately 60% or 6,000 AF is beneficially reused. Approximately 4,500 AF is used in the Las Virgenes service area, accounting for 17% of total demand. Approximately 1,500 AF is delivered to Triunfo Sanitation District with 828 AF being used in the Oak Park Water Service's area, accounting for 26% of its total annual demands. The remaining 4,000 AF is disposed of either by discharging it to Malibu Creek and/or the Los Angeles River or via spray fields at Rancho. By 2035, wastewater flows are estimated to increase to 12 million gallons per day at Tapia. If there is little or only modest growth in recycled water demands, the volume of recycled water disposal will increase to 7,500 AF.

Recycled Water Seasonal Storage:

Seasonal storage of recycled water has been considered in many planning documents, beginning with the 1973 Recycled Water Master Plan. In the simplest terms, the concept is to store excess recycled water produced in the winter for use in the summer when demands are the highest and exceed production. This approach requires not only seasonal storage but also increased demands. Seasonal storage has little or no value unless it is matched with demands to empty the reservoir in the summer to make room for winter excess. The approach would significantly reduce the need to discharge but cannot eliminate discharges altogether because of high flows into Tapia during rain events and a shrinking market for traditional "purple pipe" recycled water use. However, non-traditional uses such as residential use or the emerging concept of indirect or direct potable reuse may expand the potential demand for recycled water, leveraging the value of seasonal storage.

Guiding Principles and Plan of Action:

On June 2, 2014, the Board approved the attached guiding principles, creating a framework for the next steps in developing seasonal storage for recycled water to maximize beneficial reuse. Because of the complexity of the project, having a clear road map or plan of action was deemed necessary by the Board and staff. To this end, MWH, through a series of stakeholder driven workshops, developed a plan of action

focused on two conceptual scenarios: IPR at Las Virgenes Reservoir, and re-purposing Encino Reservoir

for seasonal storage. The Plan outlines the objectives, strategies and initial actions to move forward on a parallel path for both scenarios until a decision can be made to focus on one. The plan includes a table showing the planned activities for each scenario over the next four quarters. Each action is then referenced in the one-year schedule showing the sequence of events. An overall project schedule for both scenarios is also included. The Plan of action should be considered a "living" document, so as actions are accomplished and Board decisions are made, the Plan will be updated.

Basis of Design Report:

One of the initial actions called for in the Plan of Action was to complete a Basis of Design Study (BODS). The BODS will develop Scenarios Nos. 4 and 5 through various engineering and economic analyses. These include reservoir management for both Encino and Las Virgenes Reservoirs, hydraulic analysis for conveyance and pumping facilities, siting studies for new facilities, regulatory investigations, and detailed schedule and cost development. The study will also identify potential issues with project implementation and possible fatal flaws. Four distinct workshops and updates at regular JPA Board meetings are included in the scope to keep the Board fully informed of the progress, issues and potential fatal flaws. As authorized by the Board on July 6, 2015, staff and MWH developed the attached scope of work for the BODS with a cost of $462,825. The BODS report will take approximately seven months to complete.

Encino Reservoir Investigations:

On June 3, 2015, staff met with LADWP executives to discuss Scenario No. 5, re-purposing Encino Reservoir for seasonal storage. It was a very productive meeting and staff gained an understanding of the critical items LADWP needs to consider at this preliminary stage of the project. These items include: (1) identifying infrastructure needs and cost to convey recycled water to Encino Reservoir; (2) investigating the impact on water quality from the storage of recycled water and identifying mitigation measures for any impacts; (3) investigating changes to the current/future operations of Encino Reservoir; (4) investigating the opportunity to convey recycled water via sanitary sewers to Tillman Water Reclamation Plant to supplement recycled water production; and, (5) preparing a preliminary outreach plan. Task 3 in the BODR addresses Items Nos. 2 and 3 at a cost of $71,920. RMC Water and Environment, as an amendment to the Woodland Hills Country Club Preliminary Design Report, will address Items Nos. 1 and 4 at a cost of $52,820. The total cost of $124,740 for these investigations is proposed to be shared equally by the JPA and LADWP. Staff is seeking a proposal from a communication and outreach firm to address Item No. 5.

NPDES Permit Implications:

Staff has met with RWQCB staff, including the Executive Officer, several times over the past months to discuss the permit renewal and implementation of the *2013 Malibu Creek and Lagoon TMDL for Sedimentation and Nutrients to Address Benthic Community Impacts*. At these meetings, staff shared information on the approved Plan of Action and initial steps to move forward with the Basis of Design Report. The intent is to demonstrate to the RWQCB that either Scenario No. 4 or 5 is an alternative to address the JPA's compliance with the TMDL by significantly reducing its discharges to Malibu Creek[1]. The RWQCB has indicated that a compliance schedule with distinct milestones would be required if this approach was taken, and they are uncertain if a compliance schedule that considered two different scenarios would be acceptable. The BODR is critical in developing a compliance schedule with meaningful and achievable milestones. For example, could a project of this magnitude be accomplished in 7, 10 or 15 years? These meetings will continue with the RWQCB in parallel with the development of the BODR.

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[1] Discharge will still be necessary for flow augmentation and during significant storm events. Compliance with the TMDL under these conditions is still uncertain but a dialog with the RWQCB is continuing.

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

ATTACHMENTS:

Recycled Water Seasonal Storage Project Guiding Principles

MWH Proposal

Scope of Work for Joint JPA-LADWP Investigation of Scenario No. 5

RMC Proposal

Recycled Water Seasonal Storage Project Guiding Principles

The Las Virgenes-Triunfo Joint Powers Authority (JPA) considers recycled water a valuable resource to be beneficially reused. The JPA produces recycled water at its Tapia Water Reclamation Facility (Tapia) by treating wastewater flows from its service area to meet strict state and federal water quality standards. The amount of recycled water produced at Tapia is relatively constant throughout the year. However, customers' needs or "demands" for recycled water fluctuate significantly during the year. Demands are very high during the hot summer months, exceeding the supply from Tapia, and can drop to near zero during periods of rainfall during the winter.

As a result, the JPA is challenged to balance the constant supply of recycled with fluctuating demands throughout the year. During the summer months, potable water must be added to the recycled water system to meet the high demands. Conversely, during the winter months, excess recycled water must be released to Malibu Creek and the Los Angeles River or applied to the JPA's sprayfields. Releases to Malibu Creek are subject to ever increasing regulatory requirements, which will likely be cost-prohibitive to meet in the near future.

A seasonal storage reservoir for recycled water would allow the JPA to balance supply and demands. Excess recycled water could be placed in the reservoir during the winter months for use during the high demand summer period. Additional demands for recycled water would need to be developed to ensure that the reservoir could be drawn down each year, making room for needed storage in the wintertime. A seasonal storage reservoir has been envisioned since the first Recycled Water Master Plan was completed in the 1970s. In 2012, the JPA completed a Recycled Water Seasonal Storage Feasibility Study. This study evaluated the technical and economic feasibility of three alternatives for the reservoir.

The JPA desires to fully and beneficially reuse its recycled water by moving forward with investigation of seasonal storage. This investigation will be guided by the following principles.

1. ***Maximize Beneficial Reuse by:***
   - 1.1. Being an environmental steward
   - 1.2. Reducing existing potable water use
   - 1.3. Reducing discharge to Malibu Creek and Los Angeles River
   - 1.4. Encouraging infill use in both service areas
   - 1.5. Providing regional benefits
   - 1.6. Creating water supply reliability

2. ***Seek Cost Effective Solutions by:***
   - 2.1. Seeking funding from grants, matching funds and partnerships
   - 2.2. Engaging permitting and regulatory agencies early and often
   - 2.3. Each partner sharing in outside funding
   - 2.4. Each partner funding their share
   - 2.5. Being on time, on schedule and within budget
   - 2.6. Analyzing impacts and benefits of the project from each partners perspective

3. ***Seek Partnerships beyond the JPA by:***
   - 3.1. Considering multiple uses such as;
     - 3.1.1. Recreation
     - 3.1.2. Education
     - 3.1.3. Creation of open space
   - 3.2. Engaging stakeholders early and often
   - 3.3. Considering additional partners that will purchase recycled water

4. ***Gain Community Support by:***
   - 4.1. Engaging and educating the public and stakeholders
   - 4.2. Being transparent
   - 4.3. Establishing public safety as a top priority

5. ***Govern with a Partnership by:***
   - 5.1. Using the JPA Agreement as a guiding document
   - 5.2. Communicating openly and frequently
   - 5.3. Being committed to the project
   - 5.4. Equitably allocating costs and sharing benefits from both partners perspective

6. ***Be Forward Thinking by considering the possibilities of:***
   - 6.1. Expanding the recycled water system beyond the JPA service area
   - 6.2. Exterior residential reuse
   - 6.3. Exterior and interior use for new and remodeled commercial projects
   - 6.4. Indirect potable reuse
   - 6.5. Direct potable reuse

MWH

BUILDING A BETTER WORLD

August 14, 2015

David R. Lippman, P.E.
Las Virgenes – Triunfo Joint Powers Authority
4232 Las Virgenes Road
Calabasas, CA 91302
818-251-2100

Subject: Proposal for Recycled Water Seasonal Storage – Basis of Design Report

Dear Mr. Lippman:

MWH Americas, Inc. (MWH) is pleased to submit this proposal to assist with developing a Basis of Design Report for the seasonal storage project. This work is a continuation of the Recycled Water Seasonal Storage – Plan of Action, conducted earlier this year.

The MWH Team will be led by Dr. Steve Weber. Dr. Weber will complete the work with the previous team of James Borchardt, Sarah Munger, and Oliver Slosser, supplemented with a team of local technical experts.

MWH proposes to conduct this work over a seven month period following notice to proceed. During this seven month period, the MWH Team and technical experts will endeavor to identify fatal flaws with either option so work is not expended on an option that is no longer viable. The MWH Team will inform the JPA staff and Board of potential fatal flaws to determine the best path forward.

MWH looks forward to successfully developing a Basis of Design Report that will result in a successful seasonal storage project. We welcome the opportunity to discuss our approach with you. Please feel free to contact Jim (626-568-6283) or me at 702-569-8653 if you have any questions related to the MWH proposal.

Sincerely,

MWH Americas, Inc.

Steven P. Weber, PhD
Vice President
Project Manager

James Borchardt, PE
Vice President
Technical Coordinator

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Las Virgenes Municipal Water District

BASIS OF DESIGN REPORT

SCOPE OF WORK

Purpose

The purpose of this project is to conduct parallel evaluations of two seasonal recycled water storage options to help maximize the beneficial reuse of recycled water for the Las Virgenes-Triunfo Joint Powers Authority (JPA). The scope of this project is to complete a Basis of Design Report (BODR) that summarizes the evaluations and compares the viability of the two options.

Background

The JPA considers recycled water a valuable resource to be beneficially used. The JPA produces recycled water at its Tapia Water Reclamation Facility (Tapia WRF) by treating wastewater flows from its service area to meet strict state and federal water quality standards. The amount of recycled water produced at the Tapia WRF is relatively constant throughout the year. However, recycled water demands fluctuate significantly on a seasonal basis.

To balance the constant supply of recycled water with fluctuating demands throughout the year, the JPA has adopted a Plan of Action to evaluate two options for recycled water seasonal storage. These two options consist of:

1. The use of Las Virgenes Reservoir for seasonal storage of recycled water for indirect potable reuse
2. The re-purposing of the Los Angeles Department of Water and Power's Encino Reservoir for storage of seasonal recycled water.

The objective of the BODR is to develop these two options, identify potential issues in their implementation, and prepare more detailed information on the schedule and cost of each option, so the JPA can make a more informed decision on how to proceed.

Scope of Work

1. Collection and Review of Available Information

With the assistance of the JPA and other agencies, MWH will collect and review available information on the facilities and operational parameters effecting the selected options. The desired information consists of the following items:

A. GIS files and record drawings of JPA potable water, recycled water, and wastewater collection systems in the project area.
B. Potable, recycled, and collection system hydraulic models for relevant JPA facilities.
C. Los Angeles Department of Water and Power (LADWP) piping system drawings in the vicinity of and connecting to Encino Reservoir.
D. LASAN sewer maps in the vicinity of Encino Reservoir and Tillman WRF.
E. Calleguas Municipal Water District (Calleguas) record drawings and hydraulic modeling files for existing and planned brine line configurations.
F. Supply and demand records for the drinking water and recycled water systems operated by the JPA, including up to three years of daily historical data.
G. Recycled water quality records for the JPA, including up to three years of daily historical data.
H. Geotechnical reports and records in the project area.
I. Physical, operational, and water quality data for Encino Reservoir and Las Virgenes Reservoir, including up to three years of inflows, outflows, estimated seepage, evaporation losses, vertical profile data, area-storage-elevation data, and available information on dam facilities and reservoir bathymetry. Key water quality parameters include temperature, total dissolved solids (TDS) and/or electrical conductivity.
J. Source control program for the sewer collection system
K. MWH will conduct a literature search for existing recycled water storage facilities in the southwest to collect information on the operation and performance of similar facilities. Results of this search will be summarized and reported.
L. MWH will identify and summarize water quality requirements consistent with California State Water Resources Control Board Division of Drinking Water (DDW) Title 22 regulations for landscape irrigation and potential requirements for indirect potable reuse (IPR) with surface water augmentation.

2. Assistance with Interagency Coordination

MWH will attend meetings and/or assist in the development of meeting materials and presentations, as requested, between LVMWD and key agencies. MWH will support up to two meetings for each agency, with additional meetings requiring further authorization. MWH will provide up to two MWH employees for each meeting for each of the following agencies:

- Metropolitan Water District of Southern California (MWDSC)
- Los Angeles Department of Water and Power (LADWP)

- Division of Drinking Water (DDW)
- Regional Water Quality Control Board (RWQCB)
- Calleguas MWD (CMWD)

3. Reuse Studies for Encino Reservoir Option

MWH will conduct the following studies to determine the viability of the Encino Reservoir Option:

A. Reservoir Operation Modeling

MWH will develop an operations model of Encino Reservoir to evaluate changes in storage conditions under the proposed seasonal storage conditions.

1. MWH will develop an Operations Model using the GoldSim simulation platform. GoldSim is a general purpose operations simulation platform with extensions specifically designed to simulate water resource systems. Based on initial evaluation of existing data, the Model will run on a daily time step, and produce time-series outputs of inflow, outflow, storage, and relevant operational parameters.
2. MWH will use the information collected to develop, test, and verify the Operations Model. The model is anticipated to run over a three year analysis period using available historical data on reservoir operations, local inflow, and recycled water supply and demand.
3. MWH will also develop a water quality model of Encino Reservoir to support evaluation of changes in concentrations of water quality constituents. This modeling effort will evaluate two primary water quality constituents: TDS and temperature. A completely mixed one-dimensional model will be developed and used to investigate stratification impacts on water quality in each reservoir.

B. Water quality and sampling plan update

Recycled water quality data will be sorted and summarized to determine if there are any data gaps in information needed to comply with regulatory or operational requirements. If gaps are identified, an updated sampling plan will be prepared, including an estimate of additional sampling and analytical costs.

C. Verify Flowrates

MWH will analyze the supply and demand data to determine minimum, average and maximum flow rates through the pipes, tanks, pump stations, or other facilities. The results of this work will be used in conjunction with

the Reservoir Operations Model and confirm that facilities are sized properly to operate over the full range of anticipated conditions. MWH will coordinate with RMC engineers on recycled water conveyance.

D. Encino Reservoir Management

The management of Encino Reservoir will be investigated regarding the issues below.

1. The impacts of water quality changes and potential mitigation measures to maintain and/or improve water quality (i.e. appearance and odor) and mitigate potential problems with reservoir turnover, excessive algal growth, and anaerobic conditions that can result in odors and/or fish mortality. Also, vector control methods will be examined.
2. Requirements for any additional treatment required to maintain water quality during storage (i.e. supplemental mixing or aeration) or to re-treat the water prior to introduction back into the recycled water system, including schematic diagrams and design criteria, if needed.
3. Evaluate Reservoir catchment area, expected storm flow volumes, and management of storm flows.
4. Changes to the emergency supply potential for LADWP, due to the storage of recycled water.

4. Reuse Studies for the Las Virgenes Reservoir Option

MWH will conduct the following studies to determine the viability of the Las Virgenes Reservoir Option:

A. Reservoir Operation Modeling

MWH will develop an operations model of Las Virgenes Reservoir to evaluate changes in storage conditions under the proposed seasonal storage conditions.

1. MWH will develop an Operations Model using the GoldSim simulation platform. GoldSim is a general purpose operations simulation platform with extensions specifically designed to simulate water resource systems. Based on initial evaluation of existing data, the Model will run on a daily time step, and produce time-series outputs of inflow, outflow, storage, and relevant operational parameters.
2. MWH will use the information collected to develop, test, and verify the Operations Model. The model is anticipated to run over a three year analysis period using available historical data on reservoir

operations, local inflow, recycled water supply, and potable water demands.

3. MWH will also develop a water quality model of Las Virgenes Reservoir to support evaluation of changes in concentrations of water quality constituents. This modeling effort will evaluate two primary water quality constituents: TDS and temperature. A completely mixed one-dimensional model will be developed and used to investigate stratification impacts on water quality in each reservoir.

B. Water quality and sampling plan update

Recycled water quality data will be sorted and summarized to determine if there are any data gaps in information needed to comply with operational or regulatory requirements. If gaps are identified, an updated sampling plan will be prepared, including an estimate of additional sampling and analytical costs. The sewer collection system source control plan will also be evaluated under this task, in preparation for meetings with regulatory agencies.

C. Facility sizing

MWH will analyze the supply and demand data to determine minimum, average and maximum flow rates through the pipes, tanks, pump stations, and treatment facilities. The results of this work will be used in conjunction with the Reservoir Operations Model and confirm that facilities are sized properly to operate over the full range of anticipated conditions.

D. Pipeline hydraulics and alignment

MWH will perform the following hydraulic and alignment studies.

1. MWH will investigate three alternative alignments for connection of the Tapia Water Treatment Plant to a new IPR treatment plant and the Las Virgenes reservoir, and piping needed for brine disposal.
2. The final alternative alignments to be evaluated will be selected with input from the JPA prior to completion of the report. It is assumed that the alternative pipeline alignments will be discussed at one of the workshops identified in Task 6A. Alignments will be evaluated based on utility conflicts and congestion, available right-of-way, easement availability, geotechnical and seismic risks (see task 2D for further information), hydraulic considerations, permitting requirements, traffic, constructability issues, cost, and environmental considerations. It is anticipated that two MWH staff will each spend

one day in the field driving and/or walking the alternatives alignment to gather supporting information.

E. Facility siting

With the assistance of JPA staff, MWH will identify and select two (2) locations for the siting of facilities associated with this Option. Feasible sites for necessary pump station(s), tanks, and the advanced water treatment plant will be part of this assessment. These siting alternatives will take into account piping alignments and available utility information collected during the data collection task, and property acquisition necessary for each recommended site. Property records of each site will be investigated to ensure sites are suitable for intended use. A conceptual layout of each facility for each site alternative will be provided as part of this task.

F. Right-of-Way and utility research

MWH will consider right-of-way and utility research and information for proposed alignments on each Option, based on information from Task 1.

G. Initial geotechnical assessment

MWH will review available reports and geologic maps made available by LADWP and JPA and conduct site visits to observe and photograph surficial geologic and topographic characteristics along the alternative pipeline alignments and facility site locations. Features of interest will be documented such as bedrock outcrops, potentially unstable slopes, and factors that may provide information about the underlying conditions.

H. IPR Treatment Analysis

Based on anticipated water quality, regulatory requirements, and operational considerations, an analysis of required treatment for the Las Virgenes Option will be completed.

1. MWH will identify treatment required for an Advanced Water Treatment (AWT) plant prior to water being conveyed to the Las Virgenes Reservoir for IPR. These requirements are not certain, as IPR regulations for surface water augmentation are not yet finalized. Discussions with DDW will be necessary to anticipate appropriate treated water quality goals and level of treatment needed. A key factor in this evaluation will be the mixing requirements in Las Virgenes Reservoir, and the incorporation of results from Task 3.A. Alternative treatment trains will be developed and reported.

2. Evaluate potential impacts on the Las Virgenes Water Treatment Plant, due to blending with IPR water.
3. Evaluate seasonal operating patterns on the treatment facilities, based on the lack of surplus recycled water during summer months.
4. Treatment analyses will include the development of schematic diagrams, hydraulic profiles, basic design criteria, land requirements, and operational data sufficient to determine viability and develop cost estimates. Siting alternatives will also be identified, in conjunction with piping alignments.
5. Based on discussions with DDW, it may be necessary to conduct a subsequent pilot study of the proposed IPR treatment processes to demonstrate effective treatment and compliance with treated water quality goals. MWH will identify the facilities, testing, and labor requirements to complete a pilot study, so this portion of the work can be incorporated into the scheduling and cost evaluations.

5. Assistance with Related Studies

It is anticipated the JPA will retain the services of additional consultants to assist with studies related to the two seasonal recycled water storage options. MWH and coordinate with these consultants and assist the JPA in fulfillment of their work. It is anticipated that this will include the sharing of data, project descriptions, schedule, cost and similar items developed in the normal completion of MWH's work, and attendance at coordination meetings, with additional support requiring further authorization. This effort is anticipated to include the following services:

- Funding and Finance
- Permitting
- Environmental
- Public Outreach

6. Workshops and Presentations

MWH will organize and conduct JPA Workshops and prepare presentations to inform the JPA and receive input on the conduct of the work. Should the viability of either Option come into question, it will be brought to the attention of the JPA.

A. MWH will conduct four workshops with JPA Board of Directors and Stakeholders identified during the Plan of Action Study, as well as other participants identified by the JPA.
B. MWH will prepare presentations of project status for regularly scheduled JPA Board meetings, as requested during the conduct of the work..

7. Report Preparation

MWH will prepare draft and final Basis of Design Reports summarizing the findings and conclusions of the work.

A. Formulate Facility Alternatives
MWH will summarize the individual analyses and prepare final facility alternatives for each Option.

B. Water Savings Models
MWH will prepare initial and final water savings models for each Option. Water savings models will estimate the amount of water captured by each Option and estimate the cost savings of avoided expenditures.

C. Control Strategies
MWH will prepare conceptual level control strategies for operation of the facilities for each Option. Control strategies will define how operators will run outflows from the Tapia Treatment plant as well as operate flows into and out of Encino and Las Virgenes Reservoirs. These strategies will address seasonal patterns in flow only and not be at the level of daily operations for the reservoirs.

D. Schedule and cost analysis
MWH will develop a recommended schedule for each project alternative using Microsoft Suite Project (MS Project) Software. In addition, a Class 4, or concept/feasibility level cost estimate for each Option will be developed and documented in the final BODR.

E. Draft and final BODR
The findings and conclusions for each final project alternative will be summarized in the draft and final BODR, along with documentation for their development. Comments received on the draft report will be discussed and incorporated into the final document.

8. Project Management

MWH will provide project management for the conduct of the work, as follows:

A. Kick-Off Meeting
MWH will attend and prepare meeting minutes for a kickoff meeting after Notice to Proceed.

B. Project Administration

MWH will provide project management consisting of project setup, control, monitoring, scheduling, invoice preparation, and management of the work. The Plan of Action will be updated monthly and sent to JPA staff.

C. Fatal Flaw Identification

MWH will identify fatal flaws in either Option, so work effort is not expended on an Option that is no longer viable. The JPA staff and Board will be informed of any potential fatal flaws, so a final decision can be made on how to proceed. The project scope and fee will be adjusted accordingly.

D. Project Schedule

MWH will prepare a baseline schedule for the project based on an overall project duration of 7 months, showing key milestones and deliverables in MS Project. The schedule will also be updated monthly and sent to JPA staff.

E. Payment

Monthly invoices will be prepared, based on the percentage of hours worked to the total hours budgeted, for lump sum payments over the duration of the 7 month project.

F. Progress Meetings

MWH will conduct monthly progress meetings on a monthly basis over the duration of the project with JPA staff in addition to the JPA Board updates, either by conference call in person.

END

Las Virgenes Municipal Water District - Basis of Design Report

Task	ACTIVITY DESCRIPTION	Project Engineering and Management Personnel									LABOR FEE	20% Other Direct Costs (ODCs) with Markups	Total Fee
		$290/hr	$290/hr	$280/hr	$250/hr	$195/hr	$130/hr	$100/hr	$90/hr				
		Project Manager	Technical Coordinator	Principal Professional II	Principal Professional I	Supervising Professional	Professional	Supervising Admin Assistant	Administrative Assistant	TOTAL LABOR HOURS			
1.0	Collection and Review of Available Information	12	16	16	12	16	24	0	0	96	$21,840	$600	$22,440
1.A	Collection and Review	12	16	16	12	16	24			96	$21,840	$600	$22,440
2.0	Assitance with Interagency Coordination	35	35	15	10	10	10	0	8	123	$30,970	$3,600	$34,570
2.A	Meeting Material Preparation	15	15	15	10	10	10		8	83	$19,370	$1,800	$21,170
2.B	Meeting Attendance	20	20							40	$11,600	$1,800	$13,400
3.0	Reuse Studies for Encino Reservoir Option	56	56	40	36	48	76	0	0	312	$71,920	$0	$71,920
3.A	Reservoir Operations Modeling	16	8	8	8	16	20			76	$16,920		$16,920
3.B	Water Quality and Sampling Plan Update	4	8	8	8	8	8			44	$10,320		$10,320
3.C	Verify Flowrates	4	8	8	8	8	8			44	$10,320		$10,320
3.D	Encino Reservoir Management	32	32	16	12	16	40			148	$34,360		$34,360
4.0	Reuse Studies for Las Virgenes Reservoir	48	60	56	76	134	184	0	0	558	$116,050	$2,200	$118,250
4.A	Reservoir Operations Modeling	12	8	8	8	16	24			76	$16,280		$16,280
4.B	Water Quality and Sampling Plan Update	4	8	8	16	16	24			76	$15,960		$15,960
4.C	Facility Sizing	8	8	16	8	16	24			80	$17,360		$17,360
4.D	Pipeline Hydraulics and Alignment	4	8	8	8	16	24			68	$13,960	$600	$14,560
4.E	Facility Siting	4	8	8	8	10	24			62	$12,790	$600	$13,390
4.F	Right of Way and Utility Research	4	8	8	8	16	16			60	$12,920		$12,920
4.G	Initial geotechnical Assessment	4	4		4	12	16			40	$7,740	$1,000	$8,740
4.H	IPR Treatment Analysis	8	8		16	32	32			96	$19,040		$19,040
5.0	Assitance with Related Studies	40	40	24	24	40	40	0	16	224	$50,360	$1,800	$52,160
5.A	Material Preparation and Coordination	40	40	24	24	40	40		16	224	$50,360	$1,800	$52,160
6.0	Workshops and Presentation	44	44	20	44	20	64	0	0	406	$54,340	$6,000	$60,340
6.A	Workshop Material Preparation	20	20	20	20	20	40			140	$31,300	$3,000	$34,300
6.B	Workshop Attendance	24	24		24		24			266	$23,040	$3,000	$26,040
7.0	Report Preparation	24	32	22	44	52	60	0	32	266	$54,220	$1,800	$56,020
7.A	Draft and Final BODR	24	32	22	44	52	60		32	266	$54,220	$1,800	$56,020
8.0	Project Management and QA/QC	20	40	20	58	25	10	15	15	$203	$46,525	$600	$47,125
8.A	Project Management	20	40	20	58	25	10	15	15	203	$46,525	$600	$47,125
	TOTALS	**319**	**363**	**237**	**328**	**385**	**508**	**15**	**87**	**2,209**	**$446,225**	**$16,600**	**$462,825**

Woodland Hills Water Recycling Project

Proposal

Cooperatively investigate the feasibility of extending the Las Virgenes – Triunfo Joint Powers Authority (JPA) recycled water system to the Encino Reservoir, repurposing Encino Reservoir for seasonal storage of recycled water, pumping recycled water back to the JPA's service area when needed, and serving additional LADWP customers with recycled water. Also, the investigation would include evaluation of opportunities to provide excess recycled water to the Tillman Water Reclamation Plant, either from Encino Reservoir or through LADWP's existing sanitary sewer system.

The initial investigation will focus on:

1. Identifying the infrastructure improvements and estimated cost of the project
    - Considerations
        - Pipeline size, length and alignment alternatives
        - Preliminary hydraulics
        - Reservoir inlet/outlet modification requirements
        - Pump station requirements
        - Additional LADWP recycled water customers, associated demands and infrastructure required for service
2. Investigating impact of water quality changes in Encino Reservoir and mitigation measures
    - Considerations
        - Model the change in water quality from recycled water storage
        - Determine the best means and methods to maintain and/or improve water quality (i.e. appearance and odor) and mitigate potential problems with reservoir turnover, excessive algal growth and anaerobic conditions that can result in odors and/or fish mortality.
        - Describe vector control methods
        - Consider the need for additional reservoir facilities (i.e. mixing, aeration, oxygenation, etc.) and/or treatment prior to use of recycled water
3. Investigating changes to current/future operation of Encino Reservoir
    - Considerations
        - Evaluation of reservoir catchment area, expected storm flow volumes, and means to manage storm flows
        - Changes to emergency supply potential for LADWP
        - Impacts on existing assets and evaluation of strategy to minimize "stranding" existing LADWP assets
4. Investigating opportunities for sanitary sewer discharge of excess recycled water to supplement Tillman's influent or to convey recycled water from Encino Reservoir to Tillman.
    - Considerations
        - Treatment level of recycled water
        - Location and hydraulic capacity of sanitary sewers

- Seasonal limits of discharge

5. Preparing a preliminary outreach plan to identify the affected community areas and stakeholders, probable concerns, potential mitigation measures, and most appropriate means to share information and solicit comment

RMC water and environment

August 6, 2015

Mr. Eric Schlageter
Las Virgenes Municipal Water District
4232 Las Virgenes Road
Calabasas, CA 91302

Subject: Amendment No. 1 to Woodland Hills Country Club Recycled Water System Extension – Conceptual Evaluation of Seasonal Storage at Encino Reservoir

Dear Mr. Schlageter:

At the request of the Las Virgenes Municipal Water District (District), RMC Water and Environment (RMC) is pleased submit the attached scope of work and fee estimate for additional work requested on the Woodland Hills Country Club Recycled Water System Extension (Project) to evaluate seasonal storage opportunities at Encino Reservoir. The attached proposal for the additional work includes a brief project understanding, scope of work, schedule impacts, and fee estimate.

If you have any questions about our proposal or would like additional information, please contact me at 213-236-3668 (rbichette@rmcwater.com) or Brian Dietrick at 310-566-6460.

Very truly yours,

Rich Bichette, P.E.
Project Manager

Brian Dietrick, P.E
Principal-in-Charge

Complex Challenges | Innovative Solutions

2400 Broadway, Suite 300
Santa Monica, CA 90404 • 310.566.6460 • rmcwater.com

Project Understanding

RMC was selected by the District to provide preliminary design and CEQA services for the Woodland Hills Recycled Water System Extension, which includes preliminary design and environmental review for a recycled water pipeline extension to Woodland Hills Country Club while serving other potential recycled water users along the pipeline route. As part of the Project Scope of Work (Task 3 – Hydraulic Evaluation), RMC is to develop and evaluate hydraulic delivery scenarios which include both non-potable demand served by the project as well as seasonal storage at Encino Reservoir. The original Scope of Work assumed that the District would provide boundary conditions at the connection point to the existing recycled water system and seasonal storage delivery parameters (primarily flow rate and timing of deliveries).

At the project kickoff meeting, the District requested that RMC prepare an amendment request to further evaluate the hydraulic requirements, alignment, costs and challenges to accommodate seasonal storage at Encino Reservoir. As part of this evaluation and in accordance with the detailed Scope of Work below, RMC will (1) identify a preliminary pipeline alignment from Woodland Hills Country Club to Encino Reservoir, (2) identify branch lines to LADWP customers that could be served recycled water from the seasonal storage pipeline, (3) evaluate hydraulic requirements for the project including delivery of water to/from the seasonal storage facility and two large LADWP customers, (4) identify infrastructure and prepare budgetary cost estimates for pipelines, and pump stations, and (5) identify conceptual alignments and cost estimates for two pipelines, one that connects the Encino Reservoir to the Donald C. Tillman Water Reclamation Plant (DCTWRP), and one that connects the Encino Reservoir to DCTWRP via the existing sanitary sewer system. This last item will not include hydraulic modeling.

Scope of Work

Task 8 – Conceptual Evaluation of Seasonal Storage at Encino Reservoir

8.1 Concept Development

RMC will review the Customer Conversion Evaluation Technical Memoranda (TM) El Caballero Country Club and Braemar Country Club prepared under the 2012 Los Angeles Department of Water and Power (LADWP) Non-Potable Reuse Master Planning Report (RWMP). RMC will identify previously developed recycled water demand estimates, demand patterns, and other requirements for delivery of recycled water to these customers. RMC will also identify other potential customers and their associated demands using the 2012 LADWP RWMP.

RMC will develop a preliminary pipeline alignment from Woodland Hills Country Club to Encino Reservoir along public streets, taking into account the location of the two large customers identified above and the need for branch lines to service these customers. A brief TM will be prepared showing the preliminary alignment and summarizing the demand and other requirements for recycled water delivery to the customers, including potential smaller customers. This TM will also summarize the seasonal storage delivery parameters developed under the original Task 3 scope of work and present the hydraulic scenarios that will be evaluated under this task, which will in turn feed into the work of Task 3 under the scenarios that include seasonal storage.

8.2 Hydraulic Evaluation

RMC will obtain the District hydraulic model in WaterGems format and convert the model to InfoWater for use on this project. One existing model scenario will be converted, reviewed and simulated to understand the modeled water facilities and level of service. The converted scenario then will be used as the baseline scenario for evaluating this project. It is assumed this scenario will be the future non-potable reuse buildout scenario, including all future demands, extensions and supplies; however, the appropriate scenario will be selected with the input of the District.

In addition, RMC will review the Joint Powers Authority 2014 Recycled Water Master Plan (2014 RWMP) for a description of existing and future system conditions and work with District staff to fully understand the existing system and future system configuration and limitations. This is an exploratory exercise where RMC will run the selected hydraulic model scenario in the InfoWater software platform and compare the results to those presented in the 2014 RWMP to validate that conversion of the model was successful. It is assumed the limited, necessary adjustments will be made with the input of District staff as appropriate.

RMC will add proposed pipelines and customers for the Woodland Hills Country Club Extension Project including the future extension to Warner Center into the model. RMC will add future pipelines to Encino Reservoir, Braemar Country Club and El Caballero Country Club. RMC will run demand scenarios that include:

- Peak Non-Potable Demand (Summer Scenario)
- Peak Seasonal Storage Delivery/Low Non-Potable Demand (Winter Scenario)

The initial scenarios will be run assuming no operational storage outside of existing storage within the District system. If peak non-potable demand deliveries require a pipe diameter substantially larger than is required for seasonal storage or if recycled water supply cannot meet demand, up to four additional scenarios (modified scenarios) will be developed that include additional operational storage and/or a reduced number of customers.

RMC will use the hydraulic model to identify the following for the scenarios developed:

- Surplus or shortfall in recycled water supply with seasonal storage implemented,
- Diameter for new pipelines from the District system to Encino Reservoir and to Braemar and El Caballero Country Clubs,
- Upgrades to the District system that are required, including but not limited to pipe replacement and pumping upgrades
- Pumping requirements to deliver water to seasonal storage and to LADWP customers with adequate service pressure,
- Pumping requirements to deliver water from seasonal storage to JPA customers to offset potable water supplement,
- Pressure control facilities, if required, to maintain pressure in the distribution lines to Braemar and El Caballero Country Clubs.

The results of the hydraulic modeling will be included in the evaluation TM prepared under Task 8.2 and the write-up will include a brief description of the hydraulic modeling process and scenarios, results in graphs and table format, and recommendations for facilities.

8.3 Conveyance to DCTWRP (Conceptual)

RMC will identify preliminary alignments and cost estimates for pipelines that would (1) convey recycled water from Encino Reservoir to DCTWRP directly and (2) convey recycled water from Encino Reservoir to DCTWRP indirectly utilizing the existing sewer system. For the direct connection, the outlet at Encino Reservoir and up to three (3) potential connection points at DCTWRP will be identified during one of the scheduled Project meetings between the District and LADWP (date TBD). Then, a preliminary alignment and diameter will be identified for a pipeline between Encino Reservoir and DCTWRP. For the indirect connection, the outlet at Encino Reservoir and up to three (3) potential connection points to the existing City of Los Angeles sewer system will be identified during one of the scheduled Project meetings between the District and LADWP (date TBD). Then, a preliminary alignment and diameter will be identified for a pipeline between Encino Reservoir and the existing sewer system. This task assumes that hydraulic modeling will not be performed for conveyance facilities identified. Findings will be presented in the Task 8.5 TM described below.

8.4 Seasonal Storage at Encino Reservoir TM

RMC will prepare a TM to summarize the work of Task 8. The TM will include a description of the concept of seasonal storage at Encino Reservoir, a graphic depicting the preliminary alignment and customers, a description of the hydraulic evaluation and results, budgetary estimates of project construction costs for pipeline, pump station, inlet/outlet, and treatment facilities, and a description of water quality issues with operational strategies and treatment facility needs. The cost estimates for conveyance facilities to DCTWRP will be included on a conceptual level.

Task 8 Assumptions

- *Customer demands and peaking factors will be based on previous reports.*
- *Seasonal storage delivery parameters (flow and timing) will be based on direction from the JPA.*
- *The existing District hydraulic model is functional and fully calibrated. Model calibration is not included in the scope of work.*
- *The boundary conditions in the District hydraulic model such as pump settings, reservoir settings, and pressure reducing valve settings will not require revisions in the existing model for the baseline scenario to be used. These values will be updated as necessary for the proposed project evaluation.*
- *The scope of work does not include updates to the District hydraulic model to correct existing or future system deficiencies in meeting existing or already planned future demands identified in the Master Plan.*
- *Input from the District and LADWP will be obtained for Task 8.4 during a meeting already included under the Woodland Hills Recycled Water System Extension project*
- *Seasonal storage volume required will be based on the LVMWD Recycled Water Seasonal Storage Feasibility Study, 2012.*
- *Available storage volume in Encino Reservoir will be provided by the District.*

Task 8 Deliverables

- *Concept Development TM (Electronic pdf files delivered via email or ftp, up to ten hard copies)*
- *Seasonal Storage at Encino Reservoir Evaluation TM ((Electronic pdf files delivered via email or ftp, up to ten hard copies)*

Schedule Impacts

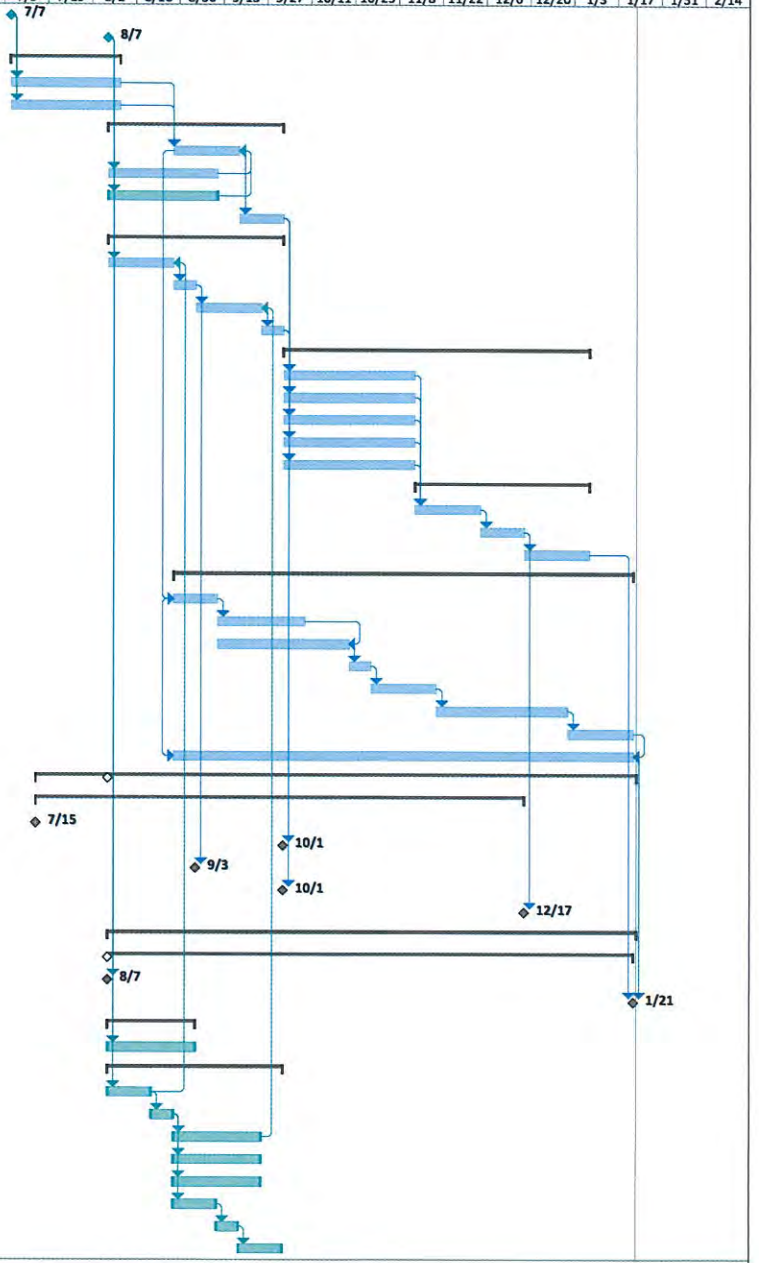
A revised project schedule is attached. RMC believes it is prudent to shift the Task 3 work until the work of this task is complete in order to avoid re-work. This will shift other tasks as shown in the revised schedule.

Proposed Fee

RMCs proposed fee for the additional work is $52,820. A fee estimate that breaks down the costs by staff role, billing rate, and hours is provided in the attached justification for this task (Task 8).

Preliminary Design & CEQA Study for the Woodland Hills Country Club Recycled Waterline System Extension

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		Notice of Award	0 days	Tue 7/7/15	Tue 7/7/15	
2		***Contract Executed***	***0 days***	***Fri 8/7/15***	***Fri 8/7/15***	
3		**Task 1: Data Collection, Review, and Utility Research**	**25 days**	**Tue 7/7/15**	**Mon 8/10/15**	
4		1.1: Data Collection and Review	5 wks	Tue 7/7/15	Mon 8/10/15	1
5		1.2: Utility Research	5 wks	Tue 7/7/15	Mon 8/10/15	1
6		**Task 2: Alignment Evaluation**	**40 days**	**Fri 8/7/15**	**Thu 10/1/15**	
7		2.1: Alignment Evaluation	3 wks	Fri 8/28/15	Thu 9/17/15	4,5,8FF+1 wk,9
8		2.2 Geotechnical Evaluation	5 wks	Fri 8/7/15	Thu 9/10/15	2
9		2.3 Traffic Evaluation	5 wks	Fri 8/7/15	Thu 9/10/15	2
10		*JPA/LADWP Review*	*2 wks*	*Fri 9/18/15*	*Thu 10/1/15*	*7*
11		**Task 3: Hydraulic Evaluation**	**40 days**	**Fri 8/7/15**	**Thu 10/1/15**	
12		3.1 Recycled Water Delivery Scenarios TM	3 wks	Fri 8/7/15	Thu 8/27/15	51FF,2
13		*JPA/LADWP Review*	*1 wk*	*Fri 8/28/15*	*Thu 9/3/15*	*12*
14		3.2 Hydraulic Evaluation and Modeling TM	3 wks	Fri 9/4/15	Thu 9/24/15	13,53FF
15		*JPA/LADWP Review*	*1 wk*	*Fri 9/25/15*	*Thu 10/1/15*	*14*
16		**Task 4: Preliminary Design**	**70 days**	**Fri 10/2/15**	**Thu 1/7/16**	
17		4.1 Pipeline Material Evaluation and Recommendations	6 wks	Fri 10/2/15	Thu 11/12/15	10,15
18		4.2 Pipeline and Appurtenance Design Criteria and Standards	6 wks	Fri 10/2/15	Thu 11/12/15	10,15
19		4.3 Permitting, Traffic Control and Right of Way Requirement	6 wks	Fri 10/2/15	Thu 11/12/15	10,15
20		4.4 Preliminary Drawings	6 wks	Fri 10/2/15	Thu 11/12/15	10,15
21		4.5 List of Specs, Schedule and Cost Estimate	6 wks	Fri 10/2/15	Thu 11/12/15	10,15
22		**4.6 Preliminary Design Report**	**40 days**	**Fri 11/13/1**	**Thu 1/7/16**	
23		Draft Report	3 wks	Fri 11/13/1	Thu 12/3/15	17,18,19,20,21
24		*JPA/LADWP Review*	*2 wks*	*Fri 12/4/15*	*Thu 12/17/15*	*23*
25		Final Report	3 wks	Fri 12/18/1	Thu 1/7/16	24
26		**Task 5: CEQA-Plus Mitigated Negative Declaration**	**105 days**	**Fri 8/28/15**	**Thu 1/21/16**	
27		5.1 Project Description and Initial Study	2 wks	Fri 8/28/15	Thu 9/10/15	7SS
28		5.2 Environmental Investigations	4 wks	Fri 9/11/15	Thu 10/8/15	27
29		5.3 Prepare Administrative Draft MND	6 wks	Fri 9/11/15	Thu 10/22/15	28FF+2 wks
30		*JPA/LADWP Review*	*1 wk*	*Fri 10/23/1*	*Thu 10/29/15*	*29*
31		5.4 Prepare Public Draft MND and Notices	3 wks	Fri 10/30/1	Thu 11/19/15	30
32		*Public Review Period*	*30 days*	*Fri 11/20/1*	*Thu 12/31/15*	*31*
33		5.5 Prepare Final MND, Mitigation Plan, and Notices	3 wks	Fri 1/1/16	Thu 1/21/16	32
34		5.6 Communications and Presentations	105 days	Fri 8/28/15	Thu 1/21/16	33FF,27SS
35		**Task 6: Project Management**	**138 days?**	**Wed 7/15/**	**Fri 1/22/16**	
36		**6.1: Project Meetings/Workshops**	**112 days**	**Wed 7/15/**	**Thu 12/17/1**	
37		Kickoff Meeting	0 days	Wed 7/15/:	Wed 7/15/15	
38		Alignment Evaluation Workshop	0 days	Thu 10/1/1	Thu 10/1/15	10
39		RW Delivery Scenarios Workshop	0 days	Thu 9/3/15	Thu 9/3/15	13
40		Hydraulic Evaluation Workshop	0 days	Thu 10/1/1	Thu 10/1/15	15
41		Draft PDR Workshop	0 days	Thu 12/17/	Thu 12/17/15	24
42		**6.2: Project Tracking and Communication**	**121 days?**	**Fri 8/7/15**	**Fri 1/22/16**	
45		**6.3 Quality Assurance and Quality Control**	**120 days**	**Fri 8/7/15**	**Thu 1/21/16**	
46		Start	0 days	Fri 8/7/15	Fri 8/7/15	2
47		Finish	0 days	Thu 1/21/1	Thu 1/21/16	34,25
48		**Task 7: Customer Coordination**	**20 days**	**Fri 8/7/15**	**Thu 9/3/15**	
49		Demand Review and Customer Meetings	20 days	Fri 8/7/15	Thu 9/3/15	2
50		**Task 8: Seasonal Storage at Encino Reservoir**	**40 days**	**Fri 8/7/15**	**Thu 10/1/15**	
51		Concept Development TM	10 days	Fri 8/7/15	Thu 8/20/15	2
52		*JPA/LADWP Review*	1 wk	Fri 8/21/15	Thu 8/27/15	51
53		Hydraulic Evaluation	20 days	Fri 8/28/15	Thu 9/24/15	52
54		Seasonal Storage Operational and Treatment Needs	20 days	Fri 8/28/15	Thu 9/24/15	52
55		Conveyance to DCTWRP	20 days	Fri 8/28/15	Thu 9/24/15	52
56		Draft TM	10 days	Fri 8/28/15	Thu 9/10/15	52
57		*JPA/LADWP Review*	1 wk	Fri 9/11/15	Thu 9/17/15	56
58		Final TM	2 wks	Fri 9/18/15	Thu 10/1/15	57



Page 1

ITEM 6A

RMC water and environment

Fee Estimate

Las Virgenes MWD - Triunfo SD Joint Powers Authority

Woodland Hills Country Club Recycled Water System Extension - Amendment No. 1 Conceptual Evaluation of Seasonal Storage at Encino Reservoir

Tasks	Labor										Outside Services			Total
	Principal	Project Manager	Hydraulic Model Technical Advisor	Hydraulic Modeler	Project Engineer	Staff Engineer	CAD/ Graphics	Admin	Total Hours	Total Labor Costs (1)	Dave Smith	Subtotal	Sub Consultant Total Cost (2)	Total Fee
	Brian Dietrick	Rich Bichette	Ricardo Vivas	Miluska Propersi	Javier De La Cruz	Romy Sharafi	CAD/GIS Tech	Cathy Macklin			Limnology			
	$244	$244	$234	$190	$174	$146	$131	$107						
Task 8: Conceptual Evaluation of Seasonal Storage at Encino Reservoi														
8.1 Concept Development	2	6			8	16	8	1	41	$6,835		$0	$0	$6,835
8.2 Hydraulic Evaluation	2	18	36	48				1	105	$22,531		$0	$0	$22,531
8.3 Conveyance to DCTWRP	2	4			8	16			30	$5,192		$0	$0	$5,192
8.4 Seasonal Storage at Encino Reservoir TM	4	16	4		24	48	8	2	106	$18,262		$0	$0	$18,262
Subtotal Task 8:	10	44	40	48	40	80	16	4	282	$52,820	$0	$0	$0	$52,820
TOTAL	10	44	40	48	40	80	16	4	282	$52,820	$0	$0	$0	$52,820

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

September 1, 2015 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject: Purchase of Dewatering Container and Ramp for Disposal of Grit and Rags

SUMMARY:

On June 23, 2015, three quotes were solicited for a 20-yard container and ramp to be used for dewatering and disposal of grit and rags removed from the JPA's trunk sewer system and sludge wet wells at the Rancho Las Virgenes Composting Facility. Wastequip, LLC was the lowest responsible and responsive bidder for the equipment with a total bid amount of $27,956.26.

RECOMMENDATION(S):

Approve the purchase of a dewatering container and ramp from Wastequip, LLC in the amount of $27,956.26.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The adopted Fiscal Year 2015-16 JPA Budget includes $50,000 for this equipment, which would be allocated 70.6% to LVMWD and 29.4% to Triunfo Sanitation District.

DISCUSSION:

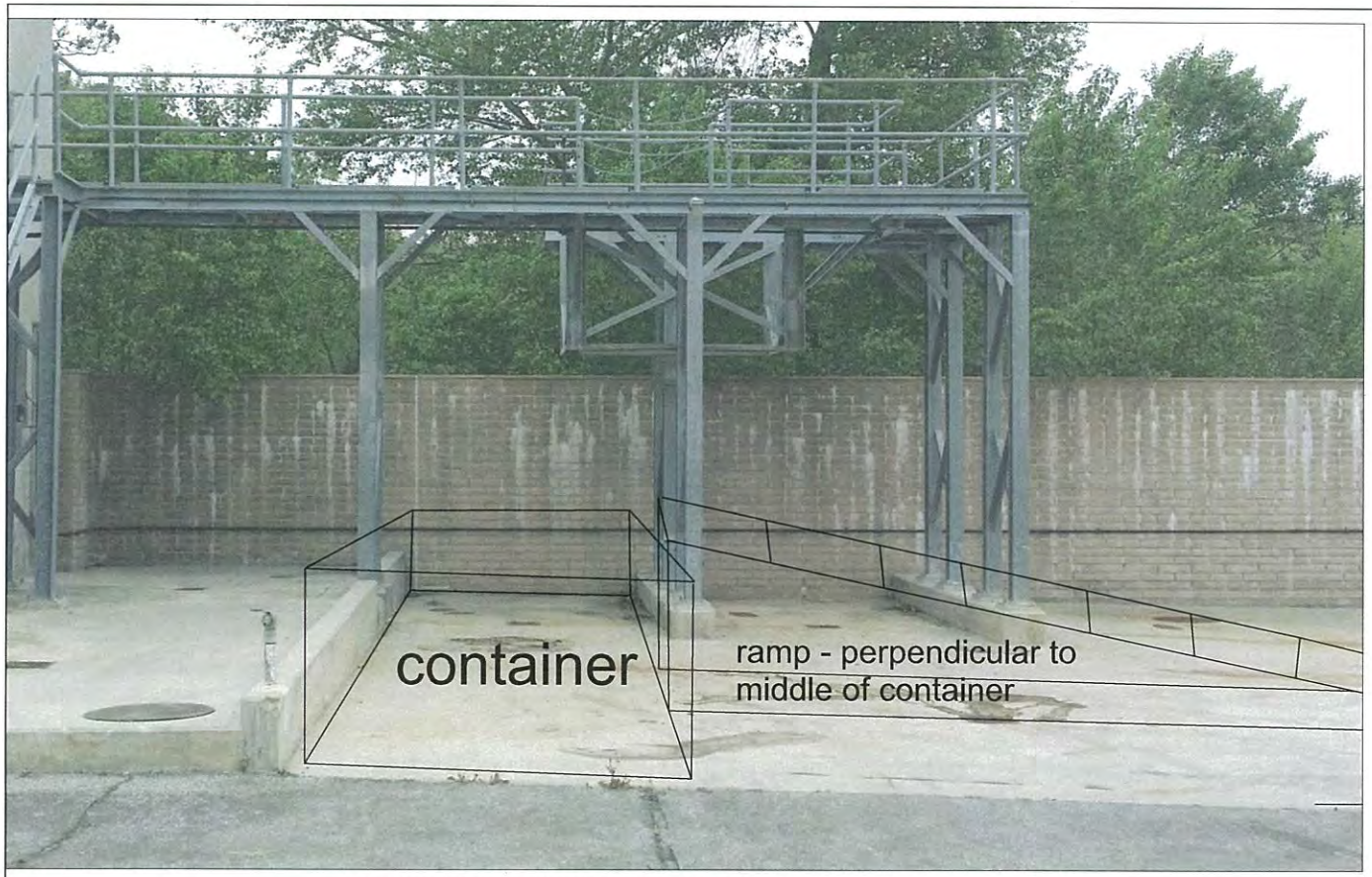
The JPA outsources the removal of grit and rags from the trunk sewer system and sludge wet wells at Rancho via vacuum truck as part of routine maintenance. The service does not include transport and disposal of the grit and rags, primarily due to the high cost of multiple trips to transport the material. As a result, the purchase of a dewatering container and ramp would allow for the vacuum truck contractor to dispose of materials at the Tapia Water Reclamation Facility for subsequent haul off by Waste Management, Inc. Waste Management has existing routes to the Tapia Water Reclamation Facility and incorporating a pickup for this dewatering container would be an efficient means to dispose of the material without impacting plant operations or building additional facilities.

Quotes for the container and ramp were solicited from Wastequip, Con-Fab, and Bucks Fabrication. Con-Fab failed to submit a formal quote, and Bucks Fabrication withdrew its bid. Neither Con-Fab nor Bucks Fabrication make or sell the ramp, and the shipping cost for the container, if formally quoted, would have been thousands of dollars. For comparison, Wastequip quoted the equipment with a minimal shipping cost because it would originate from a west coast manufacturing facility.

Prepared By: Eric Maple, P.E., Associate Engineer

ATTACHMENTS:

Container and Ramp Images



RAMP AND CONTAINER TO BE PLACED IN EXISTING UNUSED BELT PRESS AREA AT TAPIA

REV.	DATE	DESCRIPTION	APPR.	REV.	DATE	DESCRIPTION	APPR.

MUNICIPAL

DESCRIPTION

SEWER GRIT HANDLING PROJECT
PLAN

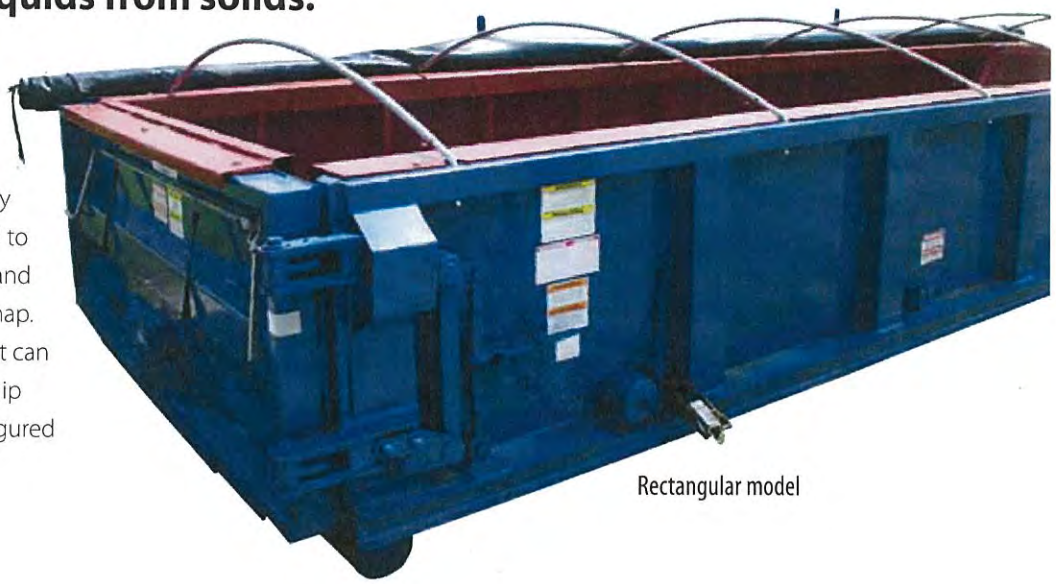
ITEM 6B

ITEM 6B

ROLL-OFF SLUDGE CONTAINER
with Dewatering Shell

Dewatering containers reduce the cost of waste disposal by separating liquids from solids.

Wastequip dewatering containers are ideal for wastewater treatment facilities, manufacturing facilities, spill sites, construction sites, refineries and mines. They feature gasketed doors and are hydro tested to ensure they will not leak. Disposable liners and the easy-to-remove shell make clean up a snap. Since the shell is easily removed with bolts, it can also be used as a sludge container. Wastequip dewatering containers can be custom configured for specific applications.



Rectangular model

Specifications

Container	• 1/4" floor, 7 gauge sides • All continuous welds inside • Solid steel nose cone • Outside rail understructure • 3 1/2" x 6" side stakes on 36" centers • 5" x 3" x 3/16" rectangular tubing top cap • 6" x 2" x 1/4" rectangular tubing long sills • 3" (3.5#) structural channel cross sills • Front and rear rollers standard
Dewatering shell	• 1/2" flat #13 expanded metal sides with "J" hooks (sides, front and door) • 7 gauge perforated floor, 52% open
Door	• Full rear door bracing • Rear door gasketed with neoprene rubber or T gasket
Clean out	• (1) 4" drain located on rear door; additional models available with (2) 6" clean-outs • Removeable dewatering shell • Liners available
Sizes/ configurations	• 20 or 25 cu. yd. • Round bottom or rectangular container • Custom sizes available

Bolt-in liners are easily removed.

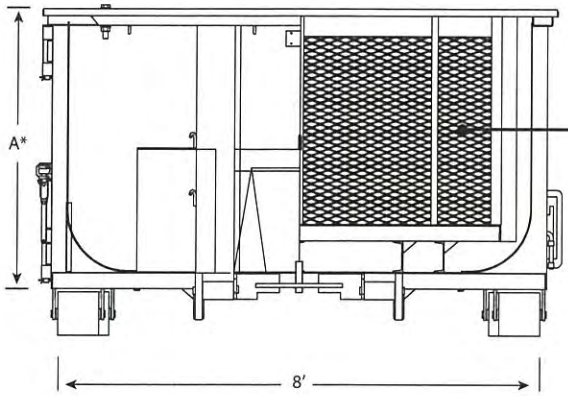
Round bottom model

WASTEQUIP

Tel: 877.468.9278
envirosales@wastequip.com
www.wastequip.com

ROLL-OFF SLUDGE CONTAINER
with Dewatering Shell

Dewatering shell in round bottom sludge container



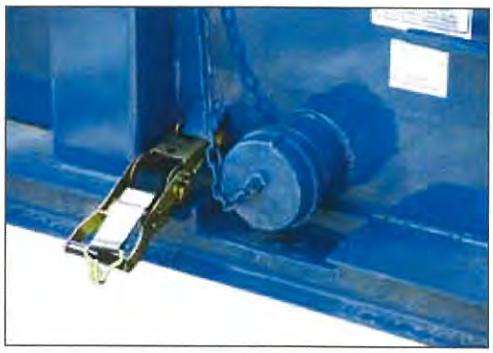
Removeable dewatering shell

Removeable dewatering shells and disposable liners make clean up easy.

* Dimension "A" is 3 ft. 5 in. for 20 yard containers and 4 ft. 3 in. for 25 yard containers.

Available options

Side to side roll tarp with bows and bow pockets or single piece, side-to-side plastic or aluminum lids.



Drains and valves can be custom configured.

Container weights (lbs.) with lid options

Size	Open top	Steel lid	Aluminum lid	Plastic lid
20 yard	5,655	8,055	6,444	6,285
25 yard	6,125	8,525	6,914	6,755

PIONEER Tarps available through Wastequip's Pioneer brand

PARTS PLACE Replacement parts available online at www.partsplace-inc.com

Standard Color Choices

Black, Dark Gray, Light Gray, Teal, Cadet Blue, Green, Tan, Gold, Orange, Red, Blue Gray, Indigo, Royal Blue, Brown, Charcoal

WASTEQUIP

Wastequip is the leading North American manufacturer of waste and recycling equipment for collecting, processing and transporting recyclables and solid or liquid waste.

ROLL-OFF TRUCK RAMP

WASTEQUIP
Tel: 877-468-9278 | sales@wastequip.com
www.wastequip.com

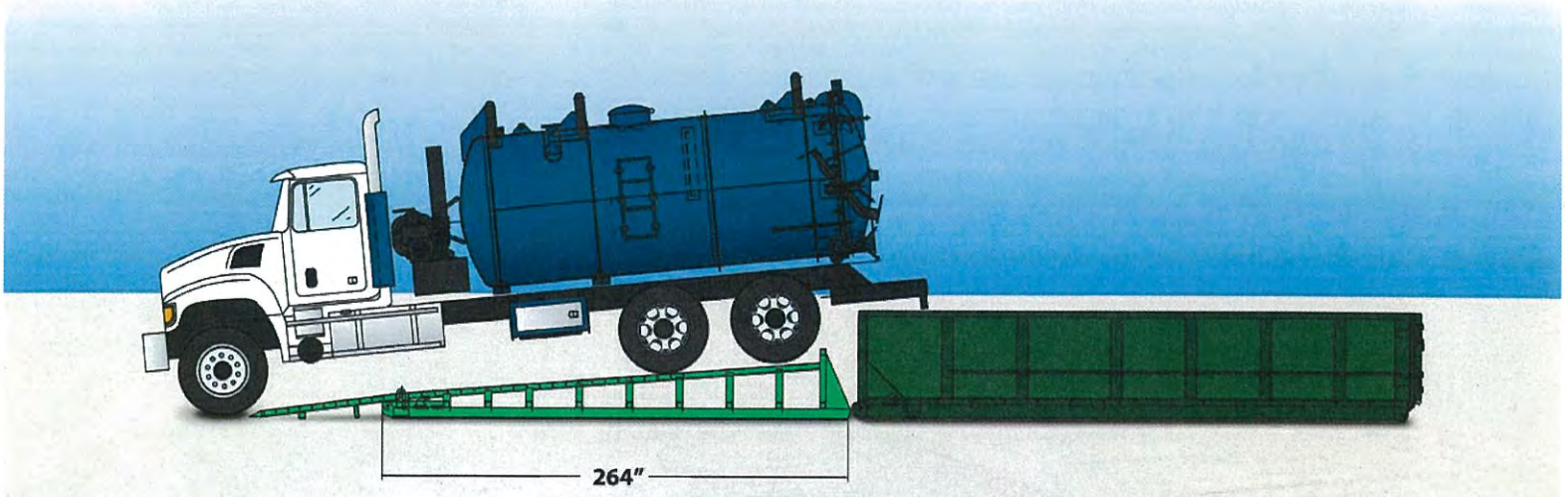
Wastequip truck ramps make it easy for trucks to empty into sludge and dewatering containers.

Features & Benefits:

- Outside rail understructure
- Spring-assisted fold-up ramps
- 43" grade lift
- Rated at 100,000 lbs. maximum capacity
- Outer rails 5 x 3 x 1/4" tubing
- Rear wheel bumper
- All standard Wastequip paint colors available (see reverse)
- 20' of cat walk standard
- Tire guides
- Long sills 5 x 2 x 1/4" tubing
- Gussets on long sills and outer rails

Options:

- Side-mounted fold-down catwalks (over 20')
- Pinned rear outriggers for stability on uneven surfaces



Drawing is for illustration purposes only and is not to scale.

September 1, 2015 JPA Board Meeting

TO: JPA Board of Directors

FROM: Finance & Administration

Subject: Financial Review: Fourth Quarter of Fiscal Year 2014-15

SUMMARY:

Based on unaudited data as of June, 30, 2015, total expenses were $16.3 million, or 25.8% lower than budget, during the fourth quarter of Fiscal Year 2014-15, primarily due to lower-than-expected capital project spending. Capital spending was $3.6 million, or 61% lower than budget, primarily due to the timing of work on multi-year capital projects. Operating revenues were $2.3 million, or 7% lower than budget, primarily due to a reduction in wholesale recycled water sales as a result of the on-going drought. Operating expenses $15.0 million, or 1.5% lower than budget.

RECOMMENDATION(S):

Receive and file the financial review for the fourth quarter of Fiscal Year 2014-15.

FISCAL IMPACT:

No

ITEM BUDGETED:

No

GOALS:

Ensure Effective Utilization of the Public's Assets and Money

Prepared By: Donald Patterson, Director of Finance and Administration

ATTACHMENTS:

Fourth Quarter Financial Update

CIP Update

Joint Powers Authority Fourth Quarter Financial Review

FY14-15 Year to Date at June 30, 2015 – Preliminary

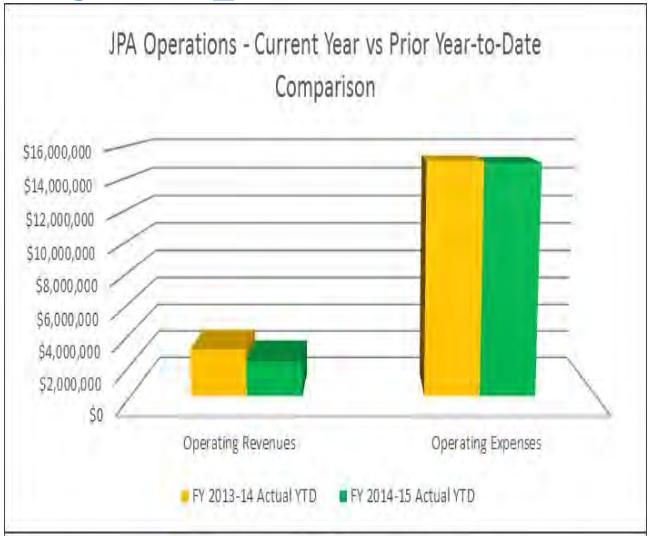
	FY13-14 Actual YTD	FY14-15 Budget YTD	FY14-15 Actual YTD
Net Uses of Fund	$18,214,285	$21,989,519	$16,317,602
LV Share	$12,656,036	$15,265,104	$11,263,498
TSD Share	$5,558,249	$6,724,415	$5,054,104

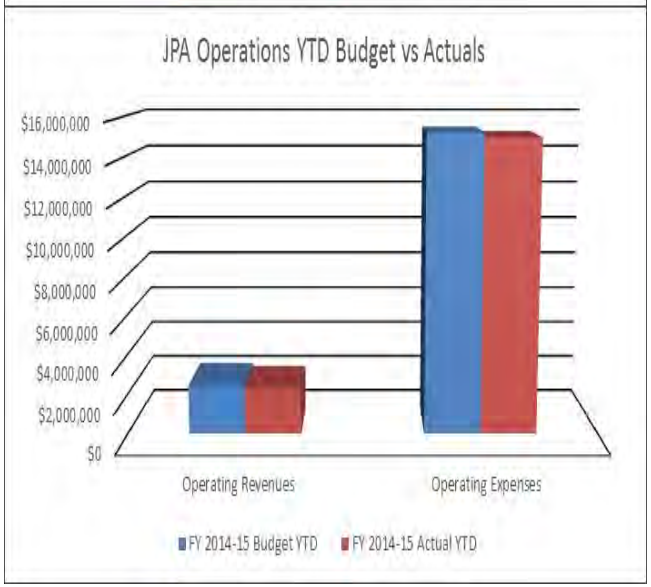
ITEM 6C

Joint Powers Authority Operations

Fourth Quarter

Joint Powers Authority Operations Quarterly Update - Comparison to Budget & Prior Year at June 30, 2015 FY 14-15 Year to Date - Preliminary			
	FY 13-14 Actual YTD	FY 14-15 Budget YTD	FY 14-15 Estimated Actual YTD
Total Operating Revenues	$ 3,102,876	$ 2,491,574	$ 2,326,229
RW Pump Station	1,465,184	1,189,191	1,286,180
RW Tanks & Reservoirs	52,668	69,140	295,372
RW System Operations	25,088	30,730	48,246
RW Distribution	137,452	77,165	93,057
Sewer	222,880	230,800	193,656
Waste Water Treatment	7,536,221	7,662,088	7,473,982
Composting	4,347,723	4,600,266	4,291,219
Farm Operation	370,478	389,163	324,265
Administration	995,330	1,030,025	1,044,007
Total Operating Expenses	15,153,024	15,278,568	15,049,984
Net Operating (Expenses)	$ (12,050,148)	$ (12,786,994)	$ (12,723,755)





Comparison to Prior Year and Budget Preliminary

	Prior Year (FY 13/14)	Actual (FY 14/15)	Budget (FY 14/15)
Operating Revenues	**$3,102,574**	**$2,326,229**	**$2,491,574**
Operating Expenses	**$15,153,024**	**$15,049,984**	**$15,278,568**
Capital Project Expenses	**$6,176,993**	**$3,604,068**	**$9,222,525**

Joint Powers Authority Operations

Quarterly Update - Comparison to Budget & Prior Year at June 30, 2015

FY14-15 Year to Date - Preliminary

	FY 13-14 Actual YTD	FY 14-15 Budget YTD	FY 14-15 Actual YTD
Total Revenues			
Operating Revenues	$ 3,102,876	$ 2,491,574	$ 2,326,229
Other Revenues	12,856	20,000	10,221
Total Revenues	3,115,732	2,511,574	2,336,450
Total Expenses			
Operating Expenses	$ 15,153,024	$ 15,278,568	$ 15,049,984
Capital Project Expenses	6,176,993	9,222,525	3,604,068
Total Expenses	21,330,017	24,501,093	18,654,052
Net (Uses) of Funds	$ (18,214,285)	$ (21,989,519)	$ (16,317,602)
Las Virgenes Share	(12,614,975)	(15,265,104)	(11,263,498)
Triunfo Share	(5,599,310)	(6,724,415)	(5,054,104)

Joint Powers Authority Operations
Quarterly Update - Comparison to Budget & Prior Year at June 30, 2015
FY14-15 Year to Date - Preliminary

	FY 13-14 Actual YTD	FY 14-15 Budget YTD	FY 14-15 Actual YTD
Las Virgenes Share:			
Total Revenues			
Operating Revenues	$ 2,190,630	$ 1,759,051	$ 1,642,318
Other Revenues	9,076	14,120	8,095
Total Revenues	2,199,707	1,773,171	1,650,413
Total Expenses			
Operating Expenses	$ 10,494,786	$ 10,527,172	$ 10,369,439
Capital Project Expenses	4,360,957	6,511,103	2,544,472
Total Expenses	14,855,743	17,038,275	12,913,911
Net (Uses) of Funds - LV	$ (12,656,036)	$ (15,265,104)	$ (11,263,498)
Triunfo Share:			
Total Revenues			
Operating Revenues	$ 912,246	$ 732,523	$ 683,911
Other Revenues	3,780	5,880	2,126
Total Revenues	916,025	738,403	686,037
Total Expenses			
Operating Expenses	$ 4,658,238	$ 4,751,396	$ 4,680,545
Capital Project Expenses	1,816,036	2,711,422	1,059,596
Total Expenses	6,474,274	7,462,818	5,740,141
Net (Uses) of Funds - TSD	$ (5,558,249)	$ (6,724,415)	$ (5,054,104)
Total JPA Net (Uses) of Funds	$ (18,214,285)	$ (21,989,519)	$ (16,317,602)

Joint Powers Authority Operations

Quarterly Update - Comparison to Budget & Prior Year at June 30, 2015

FY 14-15 Year to Date - Preliminary

	FY 13-14 Actual YTD	FY 14-15 Budget YTD	FY 14-15 Estimated Actual YTD
Total Operating Revenues	$ 3,102,876	$ 2,491,574	$ 2,326,229
RW Pump Station	1,465,184	1,189,191	1,286,180
RW Tanks & Reservoirs	52,668	69,140	295,372
RW System Operations	25,088	30,730	48,246
RW Distribution	137,452	77,165	93,057
Sewer	222,880	230,800	193,656
Waste Water Treatment	7,536,221	7,662,088	7,473,982
Composting	4,347,723	4,600,266	4,291,219
Farm Operation	370,478	389,163	324,265
Administration	995,330	1,030,025	1,044,007
Total Operating Expenses	15,153,024	15,278,568	15,049,984
Net Operating (Expenses)	$ (12,050,148)	$ (12,786,994)	$ (12,723,755)

Las Virgenes - Triunfo Joint Powers Authority
Capital Improvement Project Status
June 30, 2015 - Preliminary

Job # - Description	*LV %*	*TSD %*	*Total Project Appropriations*	*Prior Year Expenditures*	*Current Year Expenditures*	*Total Project Expenditures*	*Project Balance*	*LV Balance*	*TSD Balance*
Completed Projects									
10487 - Construct 3rd Digester @Rancho	**70.6%**	**29.4%**	**$7,423,548**	**$6,579,466**	**$1,286,789**	**$7,866,255**	**($442,707)**	**($312,551)**	**($130,156)**
Construct a third anaerobic digester at the Rancho Composting Facility.									
Project complete, accepted by JPA Board of Directors on January 5, 2015, Item 5B.									
10512 - Tapia: Primary Tank Rehab	**70.6%**	**29.4%**	**$685,000**	**$115,844**	**$254,617**	**$370,461**	**$314,539**	**$222,065**	**$92,474**
Repair concrete and install protective coatings on primary tanks at Tapia.									
Project On Hold									
10544 - Centrate Tank CP System Repl.	**70.6%**	**29.4%**	**$143,937**	**$36,108**	**$125,960**	**$162,068**	**($18,131)**	**($12,800)**	**($5,331)**
Cathodic protection for centrate treatment and storage tanks at the Rancho Las Virgenes Compost Facility.									
In Progress / Construction									
10549 - Rancho Agitator Control Upgrd	**70.6%**	**29.4%**	**$27,564**	**$13,564**	**$0**	**$13,564**	**$14,000**	**$9,884**	**$4,116**
Upgrades to the Rancho Las Virgenes Compost Facility agitator control system.									
Project Being Closed Out									
10566 - Tapia Altntv Disinfectn Safety	**70.6%**	**29.4%**	**$85,750**	**$0**	**$25,282**	**$25,282**	**$60,468**	**$42,690**	**$17,778**
Safety improvements/upgrades at Tapia.									
Project Being Closed Out									
10574 - Rancho Facility Improvement	**70.6%**	**29.4%**	**$174,500**	**$0**	**$74,496**	**$74,496**	**$100,004**	**$70,603**	**$29,401**
Purchase sump pumps, conveyor screw replacement, compressor, agitator repairs, and amendment bin overhaul (Rancho).									
In Progress / Construction									
10580 - Tapia Equipment Replacement	**70.6%**	**29.4%**	**$70,750**	**$0**	**$57,947**	**$57,947**	**$12,803**	**$9,039**	**$3,764**
Purchase of replacement equipment at Tapia.									
In Progress / Construction									
Total Completed Projects			***$8,611,049***	***$6,744,982***	***$1,825,091***	***$8,570,073***	***$40,976***	***$28,929***	***$12,047***
Multi-Year Projects									

Job # - Description	LV %	TSD %	Total Project Appropriations	Prior Year Expenditures	Current Year Expenditures	Total Project Expenditures	Project Balance	LV Balance	TSD Balance
Multi-Year Projects									
10418 - Rehab 18" RW Pipe (Tapia/Mlhd)	**70.6%**	**29.4%**	**$443,231**	**$279,834**	**$42,991**	**$322,825**	**$120,406**	**$85,007**	**$35,399**
Replace failing recycled water pipelines between Tapia WRF and Mulholland Highway.									
Design									
10493 - Tapia: Sludge Screening	**70.6%**	**29.4%**	**$385,000**	**$0**	**$0**	**$0**	**$385,000**	**$271,810**	**$113,190**
Install a screener for primary and secondary sludge at Tapia.									
Project On Hold									
10513 - Tapia Gate & Drive Rpl-FY12-13	**70.6%**	**29.4%**	**$309,650**	**$0**	**$6,870**	**$6,870**	**$302,780**	**$213,763**	**$89,017**
Replaces existing gates in the tanks and channels at Tapia as well as drive mechanisms for flights and chains.									
Project On Hold									
10520 - SCADA System Communictn Upgrd	**70.6%**	**29.4%**	**$93,100**	**$6,239**	**$25,779**	**$32,018**	**$61,082**	**$43,124**	**$17,958**
Upgrade the JPA owned portion of the supervisory control and data acquisition system (SCADA) system to an Ethernet based radio network and provide additional data paths for system redundancy.									
Design									
10522 - Rsvr #2 Imprvmnt (Lining Cover	**70.6%**	**29.4%**	**$1,607,010**	**$77,886**	**$1,404,044**	**$1,481,930**	**$125,080**	**$88,306**	**$36,774**
Cement lining of slopes of Reservoir No. 2. (recycled water).									
In Progress / Construction									
10537 - Raw Sludge WetWell Mixing Impv	**70.6%**	**29.4%**	**$100,000**	**$0**	**$0**	**$0**	**$100,000**	**$70,600**	**$29,400**
Replace the existing raw sludge mixing pump at Tapia with a more suitable unit.									
Project On Hold									
10538 - Tapia Channel Mixing Improvmnt	**70.6%**	**29.4%**	**$1,109,242**	**$32,449**	**$56,833**	**$89,282**	**$1,019,960**	**$720,092**	**$299,868**
Replace air channel mixing components at the Tapia water reclamation facility (WRF).									
Out to bid									
10540 - Lost Hills Overpass RW Main	**70.6%**	**29.4%**	**$363,744**	**$49,243**	**$43,041**	**$92,284**	**$271,460**	**$191,651**	**$79,809**
Relocation of recycled water main due to demolition of Lost Hills overpass.									
Pending Board Approval									
10551 - Centrate System-Pump Impellers	**70.6%**	**29.4%**	**$35,000**	**$0**	**$0**	**$0**	**$35,000**	**$24,710**	**$10,290**
Upgrade Rancho centrate system pump impellers to handle solids in the system.									
In Progress / Construction									

Job # - Description	LV %	TSD %	Total Project Appropriations	Prior Year Expenditures	Current Year Expenditures	Total Project Expenditures	Project Balance	LV Balance	TSD Balance
Multi-Year Projects									
10559 - Manhole Rehab, F2/F3 Line	**40.1%**	**59.9%**	**$15,000**	**$0**	**$0**	**$0**	**$15,000**	**$6,015**	**$8,985**
Rehabilitate manholes identified and prioritized in the Sewer Rehabilitation Study. Pending Board Approval									
10560 - Rancho:Rehab Existg CentrateLn	**70.6%**	**29.4%**	**$175,390**	**$0**	**$0**	**$0**	**$175,390**	**$123,825**	**$51,565**
Provide mechanical and/or chemical cleaning of minerals from the existing centrate line.									
10562 - Tapia Structural Repairs	**70.6%**	**29.4%**	**$46,500**	**$0**	**$2,123**	**$2,123**	**$44,377**	**$31,330**	**$13,047**
Tapia Structural Repairs (combined with IIP No. 10582).									
10563 - Tapia Suplmntl Carbon Study	**70.6%**	**29.4%**	**$85,000**	**$0**	**$0**	**$0**	**$85,000**	**$60,010**	**$24,990**
Study to identify supplemental carbon sources needed for the biological denitrification process at Tapia. Pending Board Approval									
10564 - Centrate Equalization Tank	**70.6%**	**29.4%**	**$890,000**	**$0**	**$41,079**	**$41,079**	**$848,921**	**$599,338**	**$249,583**
Construct a centrate equalization tank at the centrate treatment facility at Tapia. Consultant Selection									
10565 - Rancho LV:Digester Cleang/Rpr	**70.6%**	**29.4%**	**$287,500**	**$0**	**$0**	**$0**	**$287,500**	**$202,975**	**$84,525**
Clean out and evaluate the condition of digesters that have been in service for more than 20 years. Pending Board Approval									
10567 - Progmble Logic Contrlr Upgrd	**70.6%**	**29.4%**	**$216,500**	**$0**	**$0**	**$0**	**$216,500**	**$152,849**	**$63,651**
Replace obsolete programmable logic controllers and upgrade other electrical equipment at Tapia. Pending Board Approval									
10570 - RLV Compost Fac: New Loader	**70.6%**	**29.4%**	**$180,000**	**$0**	**$0**	**$0**	**$180,000**	**$127,080**	**$52,920**
Purchase of replacement loader for use at Rancho. In Progress / Construction									
10573 - Sewer Grit Handling	**70.6%**	**29.4%**	**$50,000**	**$0**	**$13,680**	**$13,680**	**$36,320**	**$25,642**	**$10,678**
Development of a sewer grit dewatering, removal and handling system at Tapia. Design									
10579 - Security Upgrades- JPA	**70.6%**	**29.4%**	**$5,000**	**$0**	**$0**	**$0**	**$5,000**	**$3,530**	**$1,470**
Security improvements at JPA facilities. In Progress / Construction									

Job # - Description	LV %	TSD %	Total Project Appropriations	Prior Year Expenditures	Current Year Expenditures	Total Project Expenditures	Project Balance	LV Balance	TSD Balance
Multi-Year Projects									
10582 - Tapia Balancg Pond Sealant Rpl	**70.6%**	**29.4%**	**$80,500**	**$0**	**$21,752**	**$21,752**	**$58,748**	**$41,476**	**$17,272**
Replace sealant in balancing pond and fix sub grade of the return activated sludge (R.A.S.) pumps to address settling.									
Design									
10588 - Woodland Hills Golf Crs-RW Ext	**70.6%**	**29.4%**	**$310,000**	**$0**	**$10,218**	**$10,218**	**$299,782**	**$211,646**	**$88,136**
Installation of a recycled water pipeline to the City of Los Angeles. Expenses under this project will be reimbursed by the Los Angeles Department of Water and Power.									
Pending Board Approval									
Project is 100% funded by Los Angeles Department of Water and Power.									
10589 - WIMS Software Implementation	**70.6%**	**29.4%**	**$32,350**	**$0**	**$25,740**	**$25,740**	**$6,610**	**$4,667**	**$1,943**
Purchase and installation of water information management solution (WIMS).									
In Progress / Construction									
Total Multi-Year Projects			***$6,819,717***	***$445,651***	***$1,694,150***	***$2,139,801***	***$4,679,916***	***$3,299,446***	***$1,380,470***
Projects on Hold									
10446 - Buffer Land at Rancho	**70.6%**	**29.4%**	**$250,000**	**$0**	**$0**	**$0**	**$250,000**	**$176,500**	**$73,500**
This is a placeholder program for potential acquisition of additional buffer land around Rancho (no property is currently identified).									
Placeholder									
10448 - Rancho Polymer Feed System Reh	**70.6%**	**29.4%**	**$121,000**	**$46,822**	**$0**	**$46,822**	**$74,178**	**$52,370**	**$21,808**
Evaluate and update polymer feed system at Rancho.									
Project On Hold									
10536 - Agoura Rd RW 8"-Ladyface-Cornl	**70.6%**	**29.4%**	**$423,103**	**$89,889**	**($89,889)**	**$0**	**$423,103**	**$298,711**	**$124,392**
Construct 5,000 feet of recycled water main extension along Agoura Road.									
Project Cancelled.									
Per JPA Board of Directors action December 8, 2014, Item 4A, and February 2, 2015, Item 6A.									
10561 - NPDES Permit Renewal	**70.6%**	**29.4%**	**$25,000**	**$0**	**$0**	**$0**	**$25,000**	**$17,650**	**$7,350**
Project to coordinate the renewal of the Tapia NPDES permit, which expires in August, 2015.									
Pending Board Approval									
10587 - RW Storage Study-FY 14-15	**70.6%**	**29.4%**	**$300,000**	**$0**	**$174,716**	**$174,716**	**$125,284**	**$88,451**	**$36,833**
Study of potential recycled water storage areas.									
Project On Hold									

Job # - Description	LV %	TSD %	Total Project Appropriations	Prior Year Expenditures	Current Year Expenditures	Total Project Expenditures	Project Balance	LV Balance	TSD Balance
Projects on Hold									
Total Projects on Hold			$1,119,103	$136,711	$84,827	$221,538	$897,565	$633,681	$263,884
Totals			$16,549,869	$7,327,344	$3,604,068	$10,931,412	$5,618,457	$3,962,056	$1,656,401
Totals: Las Virgenes MWD			$11,679,633	$5,173,105	$2,544,472	$7,717,577	$3,962,056		
Totals: Triunfo Sanitation District			$4,870,236	$2,154,239	$1,059,596	$3,213,835	$1,656,401		

INFORMATION ONLY

September 1, 2015 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject: Tapia Channel Mixing Improvements Project: Change Order Nos. 1 and 2

The Las Virgenes-Triunfo Joint Powers Authority (JPA) approved funding for this matter in the JPA Budget. On August 11, 2015, the LVMWD Board, acting as Administering Agent of the JPA, approved Change Order No. 2 for the Tapia Channel Mixing Improvements Project.

SUMMARY:

On March 2, 2015, the JPA Board awarded a construction contract to GSE Construction Company, Inc., in the amount of $896,560, for the replacement of the existing channel mixing system that had reached the end of its useful life at the Tapia Water Reclamation Facility. Change Order No. 1, in the amount of $17,353, was administratively approved by the General Manager, and Change Order No. 2 for 55 additional calendar days was approved by the LVMWD Board on August 11, 2015.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The total cost of Change Orders Nos. 1 and 2 is $17,353. Sufficient funds are available in the adopted Fiscal Year 2015-2016 JPA Budget for the work.

DISCUSSION:

Change Order No. 1, in the amount of $17,353, was administratively approved by the General Manager for the contractor to remove and replace additional, deteriorated air header piping in three locations. The existing piping was not accessible for inspection during the design phase of work and found to be in very poor condition once construction work began.

Change Order No. 2 is a zero dollar change order to add 55 calendar days to the contract duration. The time extension was necessary for redesign of the air diffuser layout to avoid conflicts with existing stop logs, procurement of additional air header piping associated with Change Order No. 1 and installation of the additional piping. LVMWD Board approval was required for the time extension because it constituted a 30.5% increase to the original contract duration of 180 days; the General Manager's authority is limited to those extensions within 25% of the original contract duration.

Prepared By: Eric Maple, P.E., Associate Engineer

ATTACHMENTS:

Change Order No. 1

Change Order No. 2

4232 Las Virgenes Road
Calabasas, California 91302-1994

CONTRACT CHANGE ORDER
No. 1

Project Tapia Channel Mixing Improvements Project No. 10538.1880.505

Contractor GSE Construction Company, Inc., Date: 7/30/15

CONTRACTOR CHANGE ORDER NO. 1 The Contractor is hereby authorized and directed to make the herein described changes from the Plans and Specifications or do the following work not included in the Plans and Specifications for the construction of this project.

This change requested by: LVMWD

DESCRIPTION OF CHANGE:

	Description	Amount	Calendar Days
1	GSE PCO No. 3, PCO No.4, and PCO No.5 for additional stainless steel air header piping, and revised tie-in locations and fittings in the grit chamber effluent channel, primary clarifier feed channel, and the activated sludge basin feed channel, complete in-place and functioning.	$17,353.00	0
	TOTAL	**$17,353.00**	0

INCREASES
TOTAL AT AGREED PRICES OR FORCE ACCOUNT **$ 17,353.00**
~~DECREASES~~

Contract Change Order No. 1 Project No. 10538.1880.505

Date 7/30/2015

(2) Estimate of increases and/or decreases in contract items at contract unit prices:

INCREASES

Item	Description	Quantity	Unit Price	Total
			TOTAL INCREASES	$N/A

DECREASES

Item	Description	Quantity	Unit Price $	Total $

TOTAL DECREASES $

TOTAL NET _____ IN CONTRACT ITEMS AT CONTRACT UNIT PRICES $

TOTAL COST OF THIS CHANGE ORDER $ 17,353.00

INCREASE

~~**DECREASE**~~

It is agreed 0 consecutive calendar days extension of time will be allowed by reason of this change.

Recommended by

Eric Maple, P.E.
Associate Engineer

Departmental Approval

David R. Lippman
Director of Facilities and Operations

ACCEPTED:

By: Richard Harte

Date: 8/21/15

APPROVED:

Las Virgenes Municipal Water District

By: David W. Pedersen, General Manager

Date: 08/25/15

Note: Attention is called to the sections of the Special Provisions and Standard Provisions on EXTRA, ADDITIONAL OR OMITTED WORK.

☐ THIS CHANGE ORDER IS NOT EFFECTIVE UNTIL APPROVED BY OWNER

■ IF ACCEPTABLE TO THE CONTRACTOR, THIS CHANGE ORDER IS EFFECTIVE IMMEDIATELY

4232 Las Virgenes Road
Calabasas, California 91302-1994

CONTRACT CHANGE ORDER
No. 2

Project Tapia Channel Mixing Improvements Project No. 10538.1880.505

Contractor GSE Construction Company, Inc. Date: 7/30/15

CONTRACTOR CHANGE ORDER NO. 2 The Contractor is hereby authorized and directed to make the herein described changes from the Plans and Specifications or do the following work not included in the Plans and Specifications for the construction of this project.

This change requested by: LVMWD

DESCRIPTION OF CHANGE:

	Description	Amount	Calendar Days
1	Additional time for construction of changes noted in GSE PCO No. 3, PCO No.4, and PCO No.5.	$0	4
2	Contract time extension for modifying diffuser layout to resolve stop log conflicts, complete.	$0	18
3	Contract time extension for modifying stainless steel header piping layout in response to RFI's, generation of change order quotes requested by District for PCO No.3, No.4, and No.5, and any delay or procurement of parts, complete.	$0	33
	TOTAL	$0	55

TOTAL INCREASES / ~~DECREASES~~ AT AGREED PRICES OR FORCE ACCOUNT $ 0

Contract Change Order No. 2 Project No. 10538.1880.505

Date 7/30/2015

(2) Estimate of increases and/or decreases in contract items at contract unit prices:

INCREASES

Item	Description	Quantity	Unit Price	Total
			TOTAL INCREASES	$N/A

DECREASES

Item	Description	Quantity	Unit Price	Total
			$	$
			TOTAL DECREASES	$

TOTAL NET _____ IN CONTRACT ITEMS AT CONTRACT UNIT PRICES $

TOTAL COST OF THIS CHANGE ORDER $ 0

INCREASE

~~**DECREASE**~~

It is agreed 55 consecutive calendar days extension of time will be allowed by reason of this change.

Recommended by

Eric Maple, P.E.
Associate Engineer

Departmental Approval

David R. Lippman
Director of Facilities and Operations

ACCEPTED:

By: Richard Hartc

Date: 8/21/15

APPROVED:

Las Virgenes Municipal Water District

By:
David W. Pedersen, General Manager

Date: 08/25/15

Note: Attention is called to the sections of the Special Provisions and Standard Provisions on EXTRA, ADDITIONAL OR OMITTED WORK.

☐ THIS CHANGE ORDER IS NOT EFFECTIVE UNTIL APPROVED BY OWNER

■ IF ACCEPTABLE TO THE CONTRACTOR, THIS CHANGE ORDER IS EFFECTIVE IMMEDIATELY

INFORMATION ONLY

September 1, 2015 JPA Board Meeting

TO: JPA Board of Directors

FROM: Facilities & Operations

Subject: Flow Augmentation to Malibu Creek: Cost and Economic Impact

SUMMARY:

This item provides an update on the cost and economic impact of flow augmentation to Malibu Creek, which is expected to be approximately $300,000 in 2015. The attached memo provides historical data on the quantity of flow augmentation, a forecast for anticipated flow augmentation during calendar year 2015, and estimates of the economic impact of flow augmentation.

FISCAL IMPACT:

Yes

ITEM BUDGETED:

Yes

FINANCIAL IMPACT:

The financial impact of flow augmentation to Malibu Creek for calendar year 2015 is estimated to be $300,000, depending on final volume required. The economic impact to the JPA consists of a loss of revenue from the decreased sale of wholesale recycled water and additional costs for water quality monitoring during flow augmentation. LVMWD currently bears the additional cost associated with purchasing higher-cost potable water supplement for its retail recycled water system.

DISCUSSION:

Beginning in 2005, the JPA has been required by the NPDES Permit for the Tapia Water Reclamation Facility to augment flow in Malibu Creek such that 2.5 cubic feet per second of flow is measured at the Los Angeles County gauging station to sustain steelhead trout habitat. During dry years, the volume and economic impact of the flow augmentation can be significant.

Prepared By: Doug Anders, Administrative Services Coordinator

ATTACHMENTS:

Memo on Flow Augmentation

Date: August 19, 2015

To: David Lippman

From: Doug Anders

Subject: Flow Augmentation to Malibu Creek – August 2015 Update

The following is an update of the report provided to the JPA Board on August 4, 2014 (Item 10C).

The NPDES permit for the Tapia Water Reclamation Facility restricts the discharge of recycled water to Malibu Creek from April 15th to November 15 except for three exceptions: (1) treatment plant upset or operational emergencies, (2) qualifying storm events as determined by the Executive Officer, and (3) "the existence of minimal streamflow conditions that require flow augmentation in Malibu Creek to sustain endangered species as determined by the Executive Office."

The third condition is defined in Section V.C. of the 2010 NPDES permit: *"The Discharger shall augment flow in the Malibu Creek, such that 2.5 cfs of maximum total flow is measured at the Los Angeles County gauging station F-130-R to sustain the steelhead trout habitat. Discharge to augment flow shall not be dependent on whether receiving water station RSW-MC004D (formerly known as station R-4) is dry or wet. The discharge shall not cause a breach of Malibu Lagoon. During the prohibition period, the Discharger must obtain permission from the Executive Officer to discharge into Malibu Creek for the purpose of this provision."* This provision has been in Tapia's permit since 2005.

Table 1 shows flow augmentation to Malibu Creek by calendar year, in both million gallon (MG) and acre feet (AF) discharge volumes, since 2005. The calendar year 2013 augmentation is expected to remain the highest single year result (CY 2005 through CY 2015) based on current conditions.

Table 1 - Fish Flow Augmentation (CY)

	Vol (MG)	Vol (AF)
2005	-	-
2006	-	-
2007	0.55	1.7
2008	0.58	1.8
2009	9.17	28.2
2010	-	-
2011	-	-
2012	-	-
2013	84.47	259.2
2014	81.34	249.6
2015*	14.7	45.1

*April 15 through July 31, 2015.

The cost of the flow augmentation includes the cost of the water plus the cost of water quality monitoring. The water cost is the difference between MWD Tier II purchased water and the JPA wholesale price of water. In other words, the net expense is the cost of the Tier II water less the revenue from the wholesale sale of recycled water. Table 2 shows the costs for the 2015 year to date flow augmentation.

Table 2 - Fish Flow Augmentation Costs

Calendar Year	Volume (AF)	MWD Tier II $/AF**	JPA Wholesale Avg. $/AF***	Net Cost $/AF	Subtotal Water Cost	Monitoring Cost	Water and Monitoring Cost
2013	259.23	$997	$411.92	$585.08	$151,670	$65,000	$216,670
2014	249.62	$1,032	$377.25	$654.75	$163,440	$56,772	$220,212
2015*	45.10	$1,055	$423.11	$631.89	$28,498	$28,386	$56,884

* April 15 through July 31, 2015.

** MWD Tier I limit / Tier II Purchases in acre feet by calendar year: 2013 (20,699 / 2,927); 2014 (20,699 / 3,289); 2015 Supply Restricted (19,966 / 0 through July 31)

*** Weighted average of JPA wholesale rate. Published rates: FY13: $454.78; FY14: $407.27; FY15: $373.72; FY16: $436.96

As shown in Table 3, between April 15 and July 31, 2015, an estimated 128 acre-feet (AF) of potable supplement was used in the recycled water system. The potable supplement would have been reduced by 45.1 AF, if the flow augmentation had not been required, with a corresponding savings of $56,884.

Table 3 – Potable & Well Water Supplement to the Recycled Water System - 2015[1]

	Morrison (AF)	Res 2 (AF)	Cord. Tank (AF)	Total (AF)	Total (MG)	Well Water (AF)
April	-	-	-	-	-	11.4
May	-	1.6	-	1.6	0.5	12.0
June	2.7	30.8	-	33.5	10.9	30.8
July	12.5	80.2	0.2	92.9	30.3	46.0
Total	15.2	112.6	0.2	128.0	41.7	100.2

[1] JPA Recycled Water sales during this period totaled 2,270 acre-feet of water (including potable water supplement and well water). Potable supplement as a percentage of recycled water sold equals approximately 10% for this time period.

Table 4 – Potable & Well Water Supplement to the Recycled Water System - 2014[2]

	Morrison (AF)	Res 2 (AF)	Cord. Tank (AF)	Total (AF)	Total (MG)	Well Water (AF)
April	0	0	0	0	0	0
May	36.2	62.3	0	98.5	32.1	58.2
June	73.2	101.5	0.2	174.9	57.0	54.1
July	86.0	167.5	1.8	255.3	83.2	49.6
August	65.4	160.8	2.9	229.1	74.7	51.9
September	78.5	117.8	0.1	196.4	64.0	51.1
October	13.8	52.5	-	66.3	21.6	28.3
November	-	-	-	-	-	4.7
Total	353.1	662.4	5.0	1,020.5	332.5	297.7

Table 5 – Potable & Well Water Supplement to the Recycled Water System - 2013[3]

	PW-Morrison (AF)	PW-Res 2 (AF)	PW-Cord. Tank (AF)	PW Total (AF)	Total (MG)	Well Water (AF)
April	11.5	0.8	0	12.3	4.0	0
May	14.0	13.0	0	27.0	8.8	32.2
June	6.9	113.0	10.6	130.5	42.5	40.7
July	105.9	123.5	20.7	250.1	81.5	55.8
August	114.9	125.4	13.2	253.5	82.6	52.5
September	90.3	143.8	14.0	248.1	80.8	47.7
October	30.7	35.6	0	66.3	21.6	33.1
November	0.0	5.9	0.0	5.9	1.9	5.2
Total	374.2	561.0	58.5	993.7	323.8	267.3

The total economic impact of the flow augmentation includes the loss of $19,082 (45.1 acre-feet at $423.11 per acre-foot) in wholesale revenue. Therefore, the total economic impact of the flow augmentation for 2015 (April 15 through July 31, 2015) is $75,967. Table 6 provides a summary of fish flow augmentation costs for 2013, 2014 and a projection for 2015.

Charts 1 & 2 provide actual and projected levels of creek flow augmentation anticipated under current conditions. The projected levels for August through November 2015 are calculated using the two year average (2013 and 2014) for the same periods. Estimates for the total JPA cost for fish flow augmentation are provided in Table 6.

[2] JPA Recycled Water sales during this period in 2014 totaled 5,867 acre-feet of water (including potable water supplement and well water). Potable supplement as a percentage of recycled water sold equals approximately 22.5% for this time period.

[3] JPA Recycled Water sales during the prohibition period in 2013 totaled 6,065 acre-feet of water (including potable water supplement and well water). Potable supplement as a percentage of recycled water sold equals approximately 21% for this time period.

Finally, as a percentage of total annual JPA recycled water produced, fish flow augmentation uses approximately 3% of the total recycled water produced at Tapia (2013: 259.2 acre-feet for fish flow / 8,986 acre-feet produced; 2014 249.62 acre-feet for fish flow / 8,166 acre-feet produced).

Chart 1 - Monthly Creek Flow Augmentation

(Million Gallons per Month)

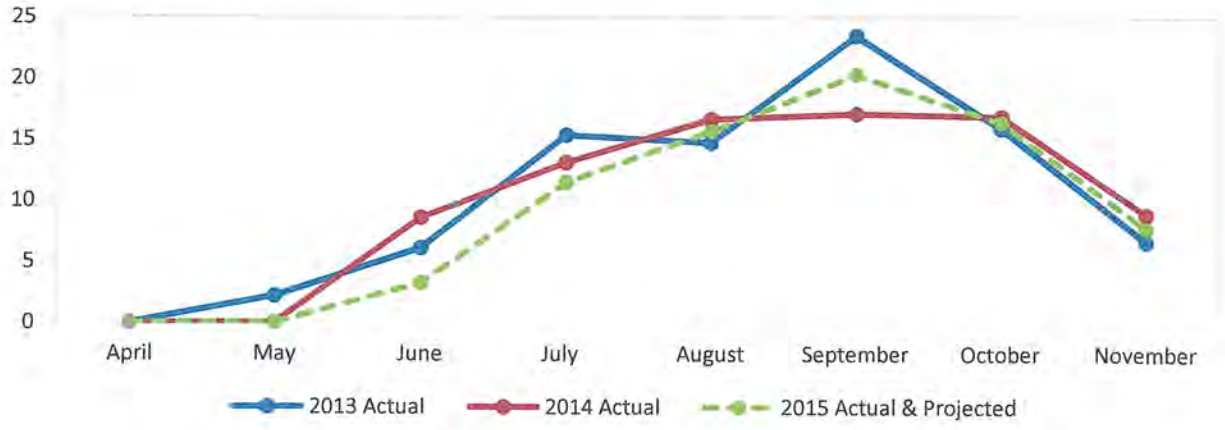


Chart 2 - Cumulative Creek Flow Augmentation by Calendar Year

(Millions of Gallons)

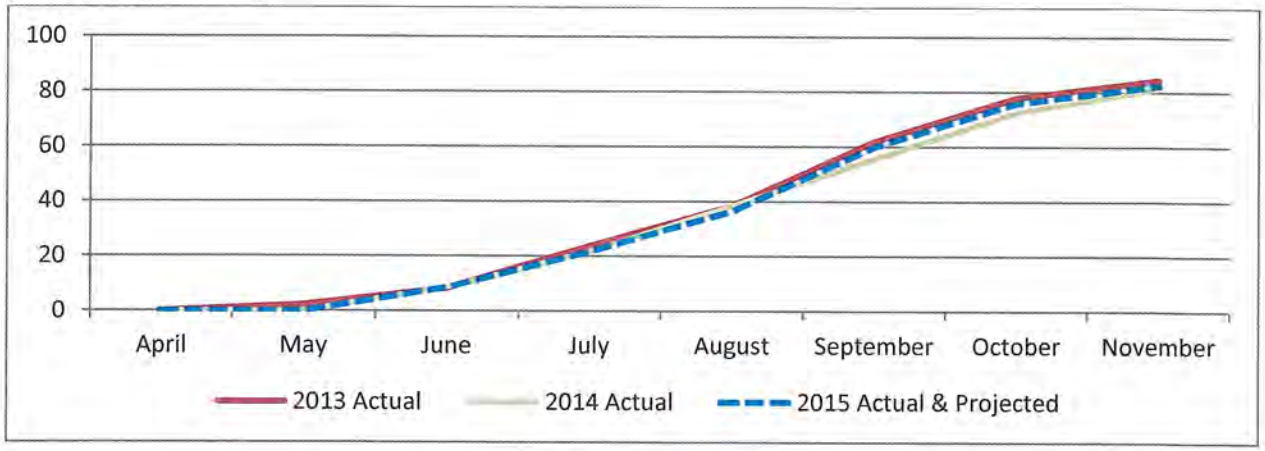


Table 6 – Fish Flow Augmentation Cost Summary

Calendar Year	Volume (MG)	Volume (AF)	Net Cost $/AF	Subtotal Water Cost	Monitoring Cost	Wholesale Revenue Loss	Total Cost
2013	84.47	259.2	$585.08	$151,670	$65,000	$106,755	$323,408
2014	81.34	249.6	$654.75	$163,440	$56,772	$94,172	$314,383
2015*	74.95	230.0	$620.76	$142,783	$56,772	$99,881	$299,436

*Actuals Through July 31, 2015 with projection for remainder of prohibition period.