

**REGULAR MEETING  
OF  
CACHUMA OPERATION AND MAINTENANCE BOARD**

**3301 Laurel Canyon Road  
Santa Barbara, CA 93105**

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**Monday, November 28, 2016**

**2:00 P.M.**

**AGENDA**

1. **CALL TO ORDER, ROLL CALL**
2. **PUBLIC COMMENT** (Public may address the Board on any subject matter not on the agenda and within the Board's jurisdiction. See "Notice to the Public" below. Please make your comments from the podium once acknowledged by the President of the Board.)
3. **CONSENT AGENDA** (All items on the Consent Agenda are considered to be routine and will be approved or rejected in a single motion. Any item placed on the Consent Agenda may be removed and placed on the Regular Agenda for discussion and possible action upon the request of any Board Member.)  
Action: Recommend Approval of Consent Agenda by motion and roll call vote of the Board:
  - a. Minutes October 24, 2016 Regular Board Meeting
  - b. Investment of Funds
    - Financial Reports
    - Investment Reports
  - c. Review of Paid Claims
4. **VERBAL REPORTS FROM BOARD COMMITTEES**  
Receive verbal information regarding the following committee meetings:
  - Operations Committee Meeting – November 17, 2016
5. **CITY OF SANTA BARBARA VIDEO PRESENTATION: LAKE CACHUMA – 2016 AERIAL FOOTAGE**  
Receive video presentation depicting high-definition aerial footage of Lake Cachuma, taken in 2016
6. **LAURO STOP VALVE REPLACEMENT PROJECT**  
Receive information for discussion and possible action by motion and roll call vote of the Board
7. **LATERAL I METER REPLACEMENT PROJECT: LASH CONSTRUCTION INC. CHANGE ORDER REQUEST**  
Receive information for discussion and possible action by motion and roll call vote of the Board
8. **LAKE CACHUMA: EMERGENCY PUMPING FACILITY (EPF) PERMANENT PIPELINES PROJECT**  
Receive information for discussion and possible action by motion and roll call vote of the Board
  - Emergency Pumping Facilities Long-Term Alternatives: HDR Engineering, Inc. Proposal

**9. GENERAL MANAGER REPORT**

Receive information from the General Manager on topics pertaining to COMB, including but not limited to the following:

- Santa Ynez River Flood Forecasting Model Workshop/Training Exercise
- CCWA Steering Committee Meeting
- Financial
- Operations Division
- Fisheries Division

**10. OPERATIONS DIVISION REPORT**

Receive information regarding Operations Division, including but not limited to the following:

- Lake Cachuma Operations
- Operation and Maintenance Activities

**11. UPDATE: FISH PASSAGE IMPROVEMENT PROJECTS**

Receive information regarding the status of the Fish Passage Improvement Projects

- Quiota Creek Crossing 0A
- Quiota Creek Crossing 4

**12. FISHERIES DIVISION REPORT**

Receive information regarding Fisheries Division, including but not limited to the following:

- LSYR Steelhead Monitoring Elements
- Tributary Project Updates
- Surcharge Water Accounting
- Reporting/Outreach/Training

**13. PROGRESS REPORT ON LAKE CACHUMA OAK TREE PROGRAM**

Receive information regarding the Lake Cachuma Oak Tree Program including but not limited to the following:

- Maintenance and Monitoring

**14. MONTHLY CACHUMA PROJECT REPORTS**

Receive information regarding the Cachuma Project, including but not limited to the following:

- a. Cachuma Water Reports
- b. Cachuma Reservoir Current Conditions
- c. Lake Cachuma Quagga Survey

**15. DIRECTORS' REQUESTS FOR AGENDA ITEMS FOR FUTURE MEETING**

**16. [CLOSED SESSION]: CONFERENCE WITH LEGAL COUNSEL: EXISTING AND POTENTIAL LITIGATION**

- a. [Government Code Section 54956.9(d)(4)]  
Name of matter: Protest of Member Agency re: Payment of Assessment for Certain Fisheries Related Activities
- b. [Government Code Section 54956.9(d)(2)]  
Name of matter: Alleged Access Rights to Ortega Ridge Road, Ocean View Estates Subdivision

17. **RECONVENE INTO OPEN SESSION**  
[Government Code Section 54957.7]  
Disclosure of actions taken in closed session, as applicable  
[Government Code Section 54957.1]
  - a. Protest of Member Agency re: Payment of Assessment for Certain Fisheries Related Activities
  - b. Alleged Access Rights to Ortega Ridge Road, Ocean View Estates Subdivision
18. **MEETING SCHEDULE**
  - **December 19, 2016 at 2:00 P.M., COMB Office**
  - **Board Packages Available on COMB Website**  
[www.cachuma-board.org](http://www.cachuma-board.org)
19. **COMB ADJOURNMENT**

#### NOTICE TO PUBLIC

**Posting of Agenda:** This agenda was posted at COMB's offices, located at 3301 Laurel Canyon Road, Santa Barbara, California, 93105 and on COMB's website, in accordance with Government Code Section 54954.2. The agenda contains a brief general description of each item to be considered by the Governing Board. The Board reserves the right to modify the order in which agenda items are heard. Copies of staff reports or other written documents relating to each item of business are on file at the COMB offices and are available for public inspection during normal business hours. A person with a question concerning any of the agenda items may call COMB's General Manager at (805) 687-4011.

**Written materials:** In accordance with Government Code Section 54957.5, written materials relating to an item on this agenda which are distributed to the Governing Board less than 72 hours (for a regular meeting) or 24 hours (for a special meeting) will be made available for public inspection at the COMB offices during normal business hours. The written materials may also be posted on COMB's website subject to staff's ability to post the documents before the scheduled meeting.

**Public Comment:** Any member of the public may address the Board on any subject within the jurisdiction of the Board that is not scheduled for as an agenda item before the Board. The total time for this item will be limited by the President of the Board. The Board is not responsible for the content or accuracy of statements made by members of the public. No action will be taken by the Board on any Public Comment item.

**Americans with Disabilities Act:** in compliance with the Americans with Disabilities Act, if you need special assistance to review agenda materials or participate in this meeting, please contact the Cachuma Operation and Maintenance Board office at (805) 687-4011 at least 48 hours prior to the meeting to enable the Board to make reasonable arrangements.

**Note:** If you challenge in court any of the Board's decisions related to the listed agenda items you may be limited to raising only those issues you or someone else raised at any public hearing described in this notice or in written correspondence to the Governing Board prior to the public hearing.

**MINUTES OF A REGULAR MEETING  
of the  
CACHUMA OPERATION & MAINTENANCE BOARD**

**held at**  
3301 Laurel Canyon Road, Santa Barbara, CA  
**Monday, October 24, 2016**

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**1. Call to Order, Roll Call**

The meeting was called to order at 2:00 p.m. by President Doug Morgan who chaired the meeting. Those in attendance were:

**Directors present:**

Harwood "Bendy" White	City of Santa Barbara
Polly Holcombe	Carpinteria Valley Water District
Lauren Hanson	Goleta Water District

**Others present:**

Janet Gingras	Phil Walker
Dave Stewart	Fray Crease
Adelle Capponi	Dale Francisco
Amy Smith	Joshua Haggmark
Tim Robinson	

**2. Public Comment**

Phil Walker commented on an outlook for potential precipitation in the state this winter, as gathered from several different weather forecasting sources.

**3. Consent Agenda**

**a. Minutes**

September 13, 2016 Special Board Meeting  
September 26, 2016 Regular Board Meeting

**b. Investment Funds**

Financial Reports  
Investment Reports

**c. Review of Paid Claims**

Director Hanson moved to approve the Consent Agenda, as presented in the board packet. Seconded by Director Holcombe, the motion passed 5/0/2 as follows:

**Ayes:** White, Holcombe, Hanson

**Nays:** None

**Absent/Abstain:** Walsh, Morgan



#### 4. Verbal Reports from Board Committees

- *Administrative Committee Meeting – October 20, 2016:* Director White reported that the Administrative Committee reviewed and provided comments on a draft COMB Procurement Policy as its sole item for consideration. Director White noted that the Policy shall continue in its development, and an additional draft will be presented to the Administrative Committee before Board consideration and final approval.
- *Fisheries Committee Meeting – October 20, 2016:* Director Holcombe summarized the meeting, noting that the Fisheries Committee forwards the following two items included on today’s agenda to the Board, both with recommendations to approve: Quiota Creek Crossing 8-COM3 Consulting, Inc., and USGS Hilton Creek Stream Gauge Relocation Project.

#### 5. Fish Passage Improvement Project: Quiota Creek Crossing 8 – COM3 Consulting Inc. Proposal

Mr. Tim Robinson, Fisheries Division Manager, explained the need for COM3 Consulting Inc.’s services, especially in relation to the timeline of the grant funding application process for funding of the project’s implementation through a CalTrans bridge replacement grant and the Highway Bridge Program (HBP). Director Hanson moved to approve the COM3 Proposal for engineering services, as well as the associated budget transfer, as detailed in the staff report in the board packet. Seconded by Director Holcombe, the motion carried 5/0/2 as follows:

**Ayes:** White, Holcombe, Hanson

**Nays:** None

**Absent/Abstain:** Walsh, Morgan

#### 6. USGS Hilton Creek Stream Gauge Relocation

Director Holcombe moved approval of the proposed expenditures for the relocation of the existing USGS stream gauge, configuration of an additional stage-only gauge downstream, and its annual fee. Seconded by Director Hanson, the motion passed 5/0/2 as follows:

**Ayes:** White, Holcombe, Hanson

**Nays:** None

**Absent/Abstain:** Walsh, Morgan

#### 7. General Manager Report

- *Cachuma Project Member Unit Manager Meeting*
- *CCWA Steering Committee Meeting*
- *Financials*
- *Operations Division*
- *Fisheries Division*

Ms. Janet Gingras, General Manager, highlighted topics within her report, as incorporated in the board packet, and responded to questions from the Board.

## **8. Operations Division Report**

- *Lake Cachuma Operations*
- *Operation and Maintenance Activities*

Mr. Dave Stewart, Operations Division Manager, summarized the report and provided succinct updates on all current operational tasks, repairs, and projects. Director White requested City of Santa Barbara staff forward its recent drone footage of Lake Cachuma to COMB staff, once available.

## **9. Update: Fish Passage Improvement Projects**

- *Quiota Creek Crossing 0A*: Mr. Robinson updated the Board on the progress of the Fish Passage Improvement Project. He revealed that the Crossing 0A bridge would be fully installed, and the project largely completed, by Friday, October 28<sup>th</sup>.
- *Quiota Creek Crossing 4*: Mr. Robinson updated the Board regarding a technical specification concern between the County of Santa Barbara and the bridge's fabricator, CONTECH Engineered Solutions, in regards to the curing process required. Notwithstanding said concern, it is expected the Crossing 4 bridge will be installed the following week.

## **10. Fisheries Division Report**

- *LSYR Steelhead Monitoring Elements*
- *Tributary Project Updates*
- *Surcharge Water Accounting*
- *Reporting/Outreach/Training*

Mr. Robinson noted highlights of the report as presented in the board packet, offered further detail on recent Fisheries Division activities, and fielded questions from the Board.

## **11. Progress Report on Lake Cachuma Oak Tree Program**

- *Maintenance and Monitoring*

Mr. Robinson summarized the progress report on the Lake Cachuma Oak Tree Program and fielded questions from the Board.

## **12. Monthly Cachuma Project Reports**

The reports were included in the board packet for information.

## **13. Directors' Requests for Agenda Items for Future Meeting**

There were no requests for agenda items for future meetings.

**14. [Closed Session]: Conference with Legal Counsel: Existing and Potential Litigation**

The Board went into closed session at 3:29 p.m.

- a. [Government Code Section 54956.9(d)(4)]  
Protest of Member Agency re: Payment of Assessment for Certain Fisheries Related Activities

**15. Reconvene Into Open Session**

[Government Code Section 54957.7]  
Disclosure of actions taken in closed session, as applicable  
[Government Code Section 54957.1]

The Board came out of closed session at 4:55 p.m.

- a. Protest of Member Agency re: Payment of Assessment for Certain Fisheries Related Activities

There was no reportable action.

**16. Meeting Schedule**

- The next Regular Board meeting will be held November 28, 2016 at 2:00 p.m.
- The Agendas and Board Packets are available on the COMB website at [www.cachuma-board.org](http://www.cachuma-board.org)

**17. COMB Adjournment**

There being no further business, the meeting was adjourned at 4:56 p.m.

Respectfully submitted,

\_\_\_\_\_  
Janet Gingras, Secretary of the Board

**APPROVED:**

\_\_\_\_\_  
Doug Morgan, President of the Board

	<i>Approved</i>
√	<i>Unapproved</i>

**COMB**  
**Statement of Net Assets**

As of October 31, 2016  
UNAUDITED FINANCIALS

**ASSETS**

**Current Assets**

**Checking/Savings**

**TRUST FUNDS**

1210 · WARREN ACT TRUST FUND 713,592.52

1220 · RENEWAL FUND 63,087.61

**Total TRUST FUNDS** 776,680.13

1050 · GENERAL FUND 176,706.09

1100 · REVOLVING FUND 132,470.73

**Total Checking/Savings** 1,085,856.95

**Other Current Assets**

1010 · PETTY CASH 500.00

1200 · LAIF 1,812,865.55

1303 · Bradbury SOD Act Assmnts Rec 88,160.00

1304 · Lauro Dam SOD Assesmnt Rec 15,106.00

1400 · PREPAID INSURANCE 27,269.72

**Total Other Current Assets** 1,943,901.27

**Total Current Assets** 3,029,758.22

**Fixed Assets**

1500 · VEHICLES 436,876.93

1505 · OFFICE FURN & EQUIPMENT 440,652.20

1510 · MOBILE OFFICES 97,803.34

1515 · FIELD EQUIPMENT 559,852.38

1525 · PAVING 38,351.00

1550 · ACCUMULATED DEPRECIATION -1,367,626.55

**Total Fixed Assets** 205,909.30

**Other Assets**

1910 · LT Bradbury SOD Act Assess Rec 5,162,599.07

1920 · LT Lauro SOD Act Assess Rec 925,236.00

1922 · Deferred Outflows of Resources (GASB 68) 136,562.00

**Total Other Assets** 6,224,397.07

**TOTAL ASSETS** 9,460,064.59

**COMB**  
**Statement of Net Assets**

As of October 31, 2016  
UNAUDITED FINANCIALS

**LIABILITIES & NET ASSETS**

**Liabilities**

**Current Liabilities**

**Accounts Payable**

2200 · ACCOUNTS PAYABLE

632,376.13

**Total Accounts Payable**

632,376.13

**Other Current Liabilities**

Payroll-DepPrm Admin

245.50

Payroll-DepPrm FD

21.24

Payroll-DepPrm Ops

451.64

2505 · ACCRUED WAGES

68,307.79

2550 · VACATION/SICK

159,283.55

2560 · CACHUMA ENTITLEMENT

-461,447.85

2561 · BRADBURY DAM SOD ACT

88,160.66

2563 · LAURO DAM SOD ACT

15,106.00

2565 · ACCRUED INTEREST SOD ACT

87,008.00

2590 · DEFERRED REVENUE

776,680.13

**Total Other Current Liabilities**

733,816.66

**Total Current Liabilities**

1,366,192.79

**Long Term Liabilities**

2602 · LT SOD Act Liability-Bradbury

5,162,599.07

2603 · LT SOD Act Liability - Lauro

925,236.00

2604 · OPEB LT Liability

784,909.00

2605 · Loan Payable - EPFP

2,002,211.57

2610 · Net Pension Liability (GASB 68)

1,120,314.00

2611 · Deferred Inflows of Resources (GASB 68)

348,168.00

**Total Long Term Liabilities**

10,343,437.64

**Total Liabilities**

11,709,630.43

**NET POSITION**

3000 · Opening Bal Equity

-1,357,356.05

3901 · Retained Net Assets

-635,871.21

Net Income

-256,338.58

**Total Net Assets**

-2,249,565.84

**TOTAL LIABILITIES & NET POSITION**

9,460,064.59

**Cachuma Operation & Maintenance Board**  
**Statement of Revenues and Expenditures**  
Budget vs. Actuals July 2016 - Jun 2017

	Fisheries			Operations			TOTAL					
	Jul - Oct 16	Budget	\$ Over Budget	% of Budget	Jul - Oct 16	Budget	\$ Over Budget	% of Budget	Jul - Oct 16	Budget	\$ Over Budget	% of Budget
<b>Income</b>												
3000 REVENUE												
3001 - O&M Budget (Qtrly Assessments)	293,486.00	3,297,011.00	-3,003,525.00	8.9%	1,099,581.03	4,417,789.00	-3,318,207.97	24.88%	1,393,067.03	7,714,800.00	-6,321,732.97	18.06%
3006 - Warren Act	0.00	238,306.00	-238,306.00	0.0%	0.00	0.00	0.00	0.0%	0.00	238,306.00	-238,306.00	0.0%
3007 - Renewal Fund	0.00	52,872.00	-52,872.00	0.0%	0.00	0.00	0.00	0.0%	0.00	52,872.00	-52,872.00	0.0%
3009 - Pmts - Member Agencies - EPPP	0.00	611,708.79	611,708.79	0.0%	611,708.79	0.00	611,708.79	100.0%	611,708.79	0.00	611,708.79	100.0%
3010 - Interest Income	0.00	2,754.20	2,754.20	0.0%	2,754.20	0.00	2,754.20	100.0%	2,754.20	0.00	2,754.20	100.0%
3015 - Watershed Sanitary Survey	0.00	4,179.37	4,179.37	0.0%	4,179.37	0.00	4,179.37	100.0%	4,179.37	0.00	4,179.37	100.0%
3033 - Grant-QC Crossing # 0 (a&b)	0.00	671,635.00	-671,635.00	0.0%	0.00	0.00	671,635.00	0.0%	0.00	671,635.00	-671,635.00	0.0%
3034 - Grant-QC Crossing #4	0.00	938,295.00	-938,295.00	0.0%	0.00	0.00	938,295.00	0.0%	0.00	938,295.00	-938,295.00	0.0%
3035 - Cachuma Project Betterment Fund	0.00	90,000.00	-90,000.00	0.0%	0.00	0.00	90,000.00	0.0%	0.00	90,000.00	-90,000.00	0.0%
<b>Total 3000 REVENUE</b>	<b>293,486.00</b>	<b>5,288,119.00</b>	<b>-4,994,633.00</b>	<b>5.55%</b>	<b>1,718,223.39</b>	<b>4,417,789.00</b>	<b>-2,699,565.61</b>	<b>38.88%</b>	<b>2,011,709.39</b>	<b>9,705,908.00</b>	<b>-7,694,198.61</b>	<b>20.73%</b>
<b>Total Income</b>	<b>293,486.00</b>	<b>5,288,119.00</b>	<b>-4,994,633.00</b>	<b>5.55%</b>	<b>1,718,223.39</b>	<b>4,417,789.00</b>	<b>-2,699,565.61</b>	<b>38.88%</b>	<b>2,011,709.39</b>	<b>9,705,908.00</b>	<b>-7,694,198.61</b>	<b>20.73%</b>
<b>Gross Profit</b>	<b>293,486.00</b>	<b>5,288,119.00</b>	<b>-4,994,633.00</b>	<b>5.55%</b>	<b>1,718,223.39</b>	<b>4,417,789.00</b>	<b>-2,699,565.61</b>	<b>38.88%</b>	<b>2,011,709.39</b>	<b>9,705,908.00</b>	<b>-7,694,198.61</b>	<b>20.73%</b>
<b>Expense</b>												
<b>PAYROLL</b>												
Gross	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
Gross-FD	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
<b>Total PAYROLL</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>
<b>3100 - LABOR - OPERATIONS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>207,489.82</b>	<b>812,375.00</b>	<b>-604,885.18</b>	<b>25.54%</b>	<b>207,489.82</b>	<b>812,375.00</b>	<b>-604,885.18</b>	<b>25.54%</b>
<b>3200 VEH &amp; EQUIPMENT</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>12,713.54</b>	<b>30,000.00</b>	<b>-17,286.46</b>	<b>42.38%</b>	<b>12,713.54</b>	<b>30,000.00</b>	<b>-17,286.46</b>	<b>42.38%</b>
3201 - Vehicle/Equip Mtce	0.00	0.00	0.00	0.0%	3,048.74	15,000.00	-11,951.26	20.33%	3,048.74	15,000.00	-11,951.26	20.33%
3202 - Fixed Capital	0.00	0.00	0.00	0.0%	660.19	5,000.00	-4,339.81	13.2%	660.19	5,000.00	-4,339.81	13.2%
3203 - Equipment Rental	0.00	0.00	0.00	0.0%	2,224.60	5,000.00	-2,775.40	44.49%	2,224.60	5,000.00	-2,775.40	44.49%
3204 - Miscellaneous	0.00	0.00	0.00	0.0%	18,647.07	55,000.00	-36,352.93	33.9%	18,647.07	55,000.00	-36,352.93	33.9%
<b>Total 3200 VEH &amp; EQUIPMENT</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>94,413.44</b>	<b>95,000.00</b>	<b>-586.56</b>	<b>99.38%</b>	<b>94,413.44</b>	<b>95,000.00</b>	<b>-586.56</b>	<b>99.38%</b>
<b>3300 - CONTRACT LABOR</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>813.89</b>	<b>65,000.00</b>	<b>-64,186.11</b>	<b>1.25%</b>	<b>813.89</b>	<b>65,000.00</b>	<b>-64,186.11</b>	<b>1.25%</b>
<b>3400 - MATERIALS &amp; SUPPLIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>1,774.67</b>	<b>15,000.00</b>	<b>-13,225.33</b>	<b>11.83%</b>	<b>1,774.67</b>	<b>15,000.00</b>	<b>-13,225.33</b>	<b>11.83%</b>
3401 - Conduit, Meter, Valve & Misc	0.00	0.00	0.00	0.0%	1,652.07	10,000.00	-8,347.93	16.52%	1,652.07	10,000.00	-8,347.93	16.52%
3402 - Buildings & Roads	0.00	0.00	0.00	0.0%	4,240.63	90,000.00	-85,759.37	4.71%	4,240.63	90,000.00	-85,759.37	4.71%
3403 - Reservoirs	0.00	0.00	0.00	0.0%	2,545.49	7,000.00	-4,454.51	36.36%	2,545.49	7,000.00	-4,454.51	36.36%
<b>Total 3400 - MATERIALS &amp; SUPPLIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>6,857.81</b>	<b>13,000.00</b>	<b>-6,142.19</b>	<b>52.75%</b>	<b>6,857.81</b>	<b>13,000.00</b>	<b>-6,142.19</b>	<b>52.75%</b>
<b>3500 - OTHER EXPENSES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>2,854.19</b>	<b>2,500.00</b>	<b>354.19</b>	<b>114.17%</b>	<b>2,854.19</b>	<b>2,500.00</b>	<b>354.19</b>	<b>114.17%</b>
3501 - Utilities	0.00	0.00	0.00	0.0%	13,225.41	45,000.00	-31,774.59	29.39%	13,225.41	45,000.00	-31,774.59	29.39%
3502 - Uniforms	0.00	0.00	0.00	0.0%	0.05	0.00	0.05	100.0%	0.05	0.00	0.05	100.0%
3503 - Communications	0.00	0.00	0.00	0.0%	218,434.52	623,119.00	-404,684.48	35.06%	218,434.52	623,119.00	-404,684.48	35.06%
3504 - USA & Other Services	0.00	0.00	0.00	0.0%	6,857.81	13,000.00	-6,142.19	52.75%	6,857.81	13,000.00	-6,142.19	52.75%
3505 - Miscellaneous	0.00	0.00	0.00	0.0%	2,854.19	15,000.00	-15,000.00	0.0%	2,854.19	15,000.00	-15,000.00	0.0%
3506 - Training	0.00	0.00	0.00	0.0%	9,712.00	30,500.00	-20,788.00	31.84%	9,712.00	30,500.00	-20,788.00	31.84%
<b>Total 3500 - OTHER EXPENSES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>218,434.52</b>	<b>623,119.00</b>	<b>-404,684.48</b>	<b>35.06%</b>	<b>218,434.52</b>	<b>623,119.00</b>	<b>-404,684.48</b>	<b>35.06%</b>
<b>4000 - Reconciliation Discrepancies</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>6,857.81</b>	<b>13,000.00</b>	<b>-6,142.19</b>	<b>52.75%</b>	<b>6,857.81</b>	<b>13,000.00</b>	<b>-6,142.19</b>	<b>52.75%</b>
<b>4100 - LABOR - FISHERIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>2,854.19</b>	<b>2,500.00</b>	<b>354.19</b>	<b>114.17%</b>	<b>2,854.19</b>	<b>2,500.00</b>	<b>354.19</b>	<b>114.17%</b>
<b>4200 - VEHICLES &amp; EQUIP - FISHERIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>9,712.00</b>	<b>30,500.00</b>	<b>-20,788.00</b>	<b>31.84%</b>	<b>9,712.00</b>	<b>30,500.00</b>	<b>-20,788.00</b>	<b>31.84%</b>
4270 - Vehicle/Equip Mtce	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
4280 - Fixed Capital	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
4290 - Miscellaneous	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
<b>Total 4200 - VEHICLES &amp; EQUIP - FISHERIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>9,712.00</b>	<b>30,500.00</b>	<b>-20,788.00</b>	<b>31.84%</b>	<b>9,712.00</b>	<b>30,500.00</b>	<b>-20,788.00</b>	<b>31.84%</b>
<b>4400 - CONTRACT LABOR - FISHERIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>

**Cachuma Operation & Maintenance Board**  
**Statement of Revenues and Expenditures**  
Budget vs. Actuals July 2016 - Jun 2017

	Fisheries				Operations				TOTAL			
	Jul - Oct 16	Budget	\$ Over Budget	% of Budget	Jul - Oct 16	Budget	\$ Over Budget	% of Budget	Jul - Oct 16	Budget	\$ Over Budget	% of Budget
4221 - Meters & Valves	0.00	3,000.00	-3,000.00	0.0%	0.00	0.00	0.00	0.00	0.00	3,000.00	-3,000.00	0.0%
4222 - Fish Projects Maintenance	0.00	25,000.00	-25,000.00	0.0%	0.00	0.00	0.00	0.0%	0.00	25,000.00	-25,000.00	0.0%
<b>Total 4220 - CONTRACT LABOR - FISHERIES</b>	<b>0.00</b>	<b>28,000.00</b>	<b>-28,000.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>28,000.00</b>	<b>-28,000.00</b>	<b>0.0%</b>
<b>4300 - MATERIALS/SUPPLIES - FISHERIES</b>	<b>1,306.75</b>	<b>7,000.00</b>	<b>-5,693.25</b>	<b>18.67%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,306.75</b>	<b>7,000.00</b>	<b>-5,693.25</b>	<b>18.67%</b>
4390 - Miscellaneous	1,306.75	7,000.00	-5,693.25	18.67%	0.00	0.00	0.00	0.00	1,306.75	7,000.00	-5,693.25	18.67%
<b>Total 4300 - MATERIALS/SUPPLIES - FISHERIES</b>	<b>1,306.75</b>	<b>7,000.00</b>	<b>-5,693.25</b>	<b>18.67%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,306.75</b>	<b>7,000.00</b>	<b>-5,693.25</b>	<b>18.67%</b>
<b>4500 - OTHER EXPENSES - FISHERIES</b>	<b>191.97</b>	<b>2,500.00</b>	<b>-2,308.03</b>	<b>7.68%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>191.97</b>	<b>2,500.00</b>	<b>-2,308.03</b>	<b>7.68%</b>
4502 - Uniforms	191.97	2,500.00	-2,308.03	7.68%	0.00	0.00	0.00	0.00	191.97	2,500.00	-2,308.03	7.68%
<b>Total 4500 - OTHER EXPENSES - FISHERIES</b>	<b>191.97</b>	<b>2,500.00</b>	<b>-2,308.03</b>	<b>7.68%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>191.97</b>	<b>2,500.00</b>	<b>-2,308.03</b>	<b>7.68%</b>
<b>4999 - GENERAL &amp; ADMINISTRATIVE</b>	<b>0.00</b>	<b>2,000.00</b>	<b>-1,799.60</b>	<b>10.02%</b>	<b>200.40</b>	<b>2,000.00</b>	<b>-1,799.60</b>	<b>10.02%</b>	<b>200.40</b>	<b>2,000.00</b>	<b>-1,799.60</b>	<b>10.02%</b>
5000 - Director Fees	0.00	2,000.00	-1,799.60	10.02%	200.40	2,000.00	-1,799.60	10.02%	200.40	2,000.00	-1,799.60	10.02%
5001 - Director Mileage	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
5000 - Director Fees - Other	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
<b>Total 5000 - Director Fees</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0%</b>
<b>5100 - Legal</b>	<b>15,506.60</b>	<b>75,000.00</b>	<b>-59,493.40</b>	<b>20.68%</b>	<b>15,506.60</b>	<b>75,000.00</b>	<b>-59,493.40</b>	<b>20.68%</b>	<b>15,506.60</b>	<b>75,000.00</b>	<b>-59,493.40</b>	<b>20.68%</b>
5101-1 - Audit	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%
5150 - Unemployment Tax	0.00	5,000.00	-5,000.00	0.0%	0.00	5,000.00	-5,000.00	0.0%	0.00	5,000.00	-5,000.00	0.0%
5200 - Liability Insurance	40,384.50	45,955.00	-5,570.50	87.88%	40,384.50	45,955.00	-5,570.50	87.88%	40,384.50	45,955.00	-5,570.50	87.88%
5310 - Postage/Office Exp	2,643.25	5,000.00	-2,356.75	52.87%	2,643.25	5,000.00	-2,356.75	52.87%	2,643.25	5,000.00	-2,356.75	52.87%
5311 - Office Equip/Leases	3,085.84	8,000.00	-4,914.16	38.57%	3,085.84	8,000.00	-4,914.16	38.57%	3,085.84	8,000.00	-4,914.16	38.57%
5312 - Misc Admin Expenses	5,525.03	7,150.00	-1,624.97	77.27%	5,525.03	7,150.00	-1,624.97	77.27%	5,525.03	7,150.00	-1,624.97	77.27%
5313 - Communications	3,124.11	8,500.00	-5,375.89	36.75%	3,124.11	8,500.00	-5,375.89	36.75%	3,124.11	8,500.00	-5,375.89	36.75%
5314 - Utilities	3,244.19	9,737.00	-6,492.81	33.32%	3,244.19	9,737.00	-6,492.81	33.32%	3,244.19	9,737.00	-6,492.81	33.32%
5315 - Membership Dues	7,387.25	8,000.00	-612.75	92.34%	7,387.25	8,000.00	-612.75	92.34%	7,387.25	8,000.00	-612.75	92.34%
5316 - Admin Fixed Assets	1,743.70	3,000.00	-1,256.30	58.12%	1,743.70	3,000.00	-1,256.30	58.12%	1,743.70	3,000.00	-1,256.30	58.12%
5317 - Admin Contract Labor A&I	870.49	22,000.00	-21,129.51	3.96%	870.49	22,000.00	-21,129.51	3.96%	870.49	22,000.00	-21,129.51	3.96%
5318 - Computer Consultant	3,053.70	15,000.00	-11,946.30	20.36%	3,053.70	15,000.00	-11,946.30	20.36%	3,053.70	15,000.00	-11,946.30	20.36%
5325 - Emp Training/Subscriptions	1,161.06	2,000.00	-838.94	58.05%	1,161.06	2,000.00	-838.94	58.05%	1,161.06	2,000.00	-838.94	58.05%
5330 - Admin Travel/Conferences	723.76	2,000.00	-1,276.24	36.19%	723.76	2,000.00	-1,276.24	36.19%	723.76	2,000.00	-1,276.24	36.19%
5331 - Public Information	24.69	1,000.00	-975.31	2.47%	24.69	1,000.00	-975.31	2.47%	24.69	1,000.00	-975.31	2.47%
5391 - Admin Contract Labor AA I	558.84	19,600.00	-19,041.16	2.85%	558.84	19,600.00	-19,041.16	2.85%	558.84	19,600.00	-19,041.16	2.85%
<b>Total 4999 - GENERAL &amp; ADMINISTRATIVE</b>	<b>92,066.21</b>	<b>269,942.00</b>	<b>-177,875.79</b>	<b>34.11%</b>	<b>92,066.21</b>	<b>269,942.00</b>	<b>-177,875.79</b>	<b>34.11%</b>	<b>92,066.21</b>	<b>269,942.00</b>	<b>-177,875.79</b>	<b>34.11%</b>
<b>5299 - ADMIN LABOR</b>	<b>160,029.45</b>	<b>484,222.00</b>	<b>-324,192.55</b>	<b>33.05%</b>	<b>160,029.45</b>	<b>484,222.00</b>	<b>-324,192.55</b>	<b>33.05%</b>	<b>160,029.45</b>	<b>484,222.00</b>	<b>-324,192.55</b>	<b>33.05%</b>
<b>5400 - GENERAL &amp; ADMIN - FISHERIES</b>	<b>4,043.40</b>	<b>20,000.00</b>	<b>-15,956.60</b>	<b>20.22%</b>	<b>4,043.40</b>	<b>20,000.00</b>	<b>-15,956.60</b>	<b>20.22%</b>	<b>4,043.40</b>	<b>20,000.00</b>	<b>-15,956.60</b>	<b>20.22%</b>
5407 - Legal - FD	1,710.48	2,000.00	-289.52	85.52%	1,710.48	2,000.00	-289.52	85.52%	1,710.48	2,000.00	-289.52	85.52%
5410 - Postage / Office Supplies	1,661.56	5,218.00	-3,556.44	31.84%	1,661.56	5,218.00	-3,556.44	31.84%	1,661.56	5,218.00	-3,556.44	31.84%
5411 - Office Equipment / Leases	1,600.13	4,870.00	-3,269.87	32.86%	1,600.13	4,870.00	-3,269.87	32.86%	1,600.13	4,870.00	-3,269.87	32.86%
5412 - Misc. Admin Expense	1,897.63	4,305.00	-2,407.37	44.08%	1,897.63	4,305.00	-2,407.37	44.08%	1,897.63	4,305.00	-2,407.37	44.08%
5413 - Communications	1,746.87	5,243.00	-3,496.13	33.32%	1,746.87	5,243.00	-3,496.13	33.32%	1,746.87	5,243.00	-3,496.13	33.32%
5414 - Utilities	4,168.50	4,000.00	168.50	104.21%	4,168.50	4,000.00	168.50	104.21%	4,168.50	4,000.00	168.50	104.21%
5415 - Membership Dues	938.92	3,000.00	-2,061.08	31.3%	938.92	3,000.00	-2,061.08	31.3%	938.92	3,000.00	-2,061.08	31.3%
5416 - Admin Fixed Assets	468.72	12,000.00	-11,531.28	3.91%	468.72	12,000.00	-11,531.28	3.91%	468.72	12,000.00	-11,531.28	3.91%
5417 - Admin Contract Labor A&I	1,644.30	5,000.00	-3,355.70	32.89%	1,644.30	5,000.00	-3,355.70	32.89%	1,644.30	5,000.00	-3,355.70	32.89%
5418 - Computer Consultant	1,333.47	2,500.00	-1,166.53	53.34%	1,333.47	2,500.00	-1,166.53	53.34%	1,333.47	2,500.00	-1,166.53	53.34%
5425 - Employee Education/Subsription	1,523.20	6,000.00	-4,476.80	25.39%	1,523.20	6,000.00	-4,476.80	25.39%	1,523.20	6,000.00	-4,476.80	25.39%
5426 - Director Fees	107.90	1,000.00	-892.10	10.79%	107.90	1,000.00	-892.10	10.79%	107.90	1,000.00	-892.10	10.79%
5427 - Director Mileage	71.07	2,500.00	-2,428.93	2.84%	71.07	2,500.00	-2,428.93	2.84%	71.07	2,500.00	-2,428.93	2.84%
5430 - Travel	513.30	1,500.00	-986.70	34.22%	513.30	1,500.00	-986.70	34.22%	513.30	1,500.00	-986.70	34.22%
5431 - Public Information	0.00	6,300.00	-6,300.00	0.0%	0.00	6,300.00	-6,300.00	0.0%	0.00	6,300.00	-6,300.00	0.0%
5441 - Audit	21,745.50	24,745.00	-2,999.50	87.88%	21,745.50	24,745.00	-2,999.50	87.88%	21,745.50	24,745.00	-2,999.50	87.88%
5443 - Liab & Property Ins	300.92	10,600.00	-10,299.08	2.84%	300.92	10,600.00	-10,299.08	2.84%	300.92	10,600.00	-10,299.08	2.84%
5491 - Admin Contract Labor AA I	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.0%

# Cachuma Operation & Maintenance Board

## Statement of Revenues and Expenditures

Budget vs. Actuals July 2016 - Jun 2017

	Fisheries			Operations			TOTAL		
	Jul - Oct 16	Budget	% of Budget	Jul - Oct 16	Budget	% of Budget	Jul - Oct 16	Budget	% of Budget
<b>Total 5400 - GENERAL &amp; ADMIN - FISHERIES</b>	45,475.87	120,781.00	37.65%	0.00	5,000.00	26.86%	45,475.87	120,781.00	37.65%
5499 - ADMIN LABOR-FISHERIES	61,114.44	202,112.00	30.24%	0.00	0.00	0.00	61,114.44	202,112.00	30.24%
5510 - Integrated Reg. Water Mgt Plan	0.00	0.00		1,343.00	5,000.00	26.86%	1,343.00	5,000.00	26.86%
<b>6000 - SPECIAL PROJECTS</b>									
6062 - SCADA	0.00	20,000.00	6.14%	1,226.90	20,000.00	6.14%	1,226.90	20,000.00	6.14%
6090 - COMB Office Building	0.00	150,000.00	0.0%	0.00	150,000.00	0.0%	0.00	150,000.00	0.0%
6096 - SCC Structure Rehabilitation	0.00	240,000.00	0.0%	0.00	240,000.00	0.0%	0.00	240,000.00	0.0%
6097 - GIS and Mapping	0.00	10,000.00	19.25%	1,925.00	10,000.00	19.25%	1,925.00	10,000.00	19.25%
6100 - Watershed Sanitary Survey	0.00	35,481.20	90.63%	32,156.21	35,481.20	90.63%	32,156.21	35,481.20	90.63%
6100-1a - Watershed Sanitary Survey-C/O	0.00	-35,481.20	0.0%	0.00	-35,481.20	0.0%	0.00	-35,481.20	0.0%
6105 - ROW Management Program	0.00	20,000.00	7.2%	1,440.00	20,000.00	7.2%	1,440.00	20,000.00	7.2%
6109 - NP Jet Flow Control Valve	0.00	50,000.00	0.0%	0.00	50,000.00	0.0%	0.00	50,000.00	0.0%
6111 - Mission Crk Pipe Temp Repair	0.00	50,000.00	0.0%	0.00	50,000.00	0.0%	0.00	50,000.00	0.0%
6118 - Repair Lateral 3 Structure	0.00	100,000.00	13.08%	13,079.00	100,000.00	13.08%	13,079.00	100,000.00	13.08%
6120 - Emergency Pumping Fac Project	0.00	1,846,250.00	30.2%	557,475.16	1,846,250.00	30.2%	557,475.16	1,846,250.00	30.2%
6130 - NP Slope Stabilization	0.00	82,668.20	10.86%	8,973.75	82,668.20	10.86%	8,973.75	82,668.20	10.86%
6130-1 - NP Slope Stabil C/O Funds FY 16	0.00	-82,668.20	0.0%	0.00	-82,668.20	0.0%	0.00	-82,668.20	0.0%
6131 - Lauro Diversion Valve Install	0.00	75,000.00	0.0%	0.00	75,000.00	0.0%	0.00	75,000.00	0.0%
<b>Total 6000 - SPECIAL PROJECTS</b>	0.00	2,561,250.00	24.06%	616,276.02	2,561,250.00	24.06%	616,276.02	2,561,250.00	24.06%
<b>6200 - FISHERIES ACTIVITIES</b>									
6201 - FMP Implementation	2,292.71	58,800.00	3.9%	0.00	58,800.00	3.9%	2,292.71	58,800.00	3.9%
6202 - GIS and Mapping	125.00	10,000.00	1.25%	0.00	10,000.00	1.25%	125.00	10,000.00	1.25%
6203 - Grants Technical Support	0.00	0.00	0.0%	0.00	0.00	0.0%	0.00	0.00	0.0%
6204 - SYR Hydrology Technical Support	0.00	8,000.00	0.0%	0.00	8,000.00	0.0%	0.00	8,000.00	0.0%
6205 - USGS Stream Gauge Program	19,525.00	77,000.00	25.36%	0.00	77,000.00	25.36%	19,525.00	77,000.00	25.36%
6206 - Tri County Fish Team Funding	0.00	5,000.00	0.0%	0.00	5,000.00	0.0%	0.00	5,000.00	0.0%
6207 - Oak Tree Restoration Program	927.55	80,000.00	1.16%	0.00	80,000.00	1.16%	927.55	80,000.00	1.16%
<b>Total 6200 - FISHERIES ACTIVITIES</b>	22,870.26	238,800.00	9.58%	0.00	238,800.00	9.58%	22,870.26	238,800.00	9.58%
<b>6300 - HABITAT ENHANCEMENT</b>									
6303 - Tributary Projects Support	0.00	20,000.00	0.0%	0.00	20,000.00	0.0%	0.00	20,000.00	0.0%
6312 - Quiota Creek Crossing 0 (a&b)	277,905.64	840,000.00	33.08%	0.00	840,000.00	33.08%	277,905.64	840,000.00	33.08%
6314 - Quiota Creek Crossing 4	401,928.62	1,120,000.00	35.89%	0.00	1,120,000.00	35.89%	401,928.62	1,120,000.00	35.89%
6315 - Quiota Creek Crossing 8	0.00	24,200.00	0.0%	0.00	24,200.00	0.0%	0.00	24,200.00	0.0%
6316 - Quiota Creek Crossing 5	0.00	30,000.00	0.0%	0.00	30,000.00	0.0%	0.00	30,000.00	0.0%
6317 - Salsipuedes Fish Ladder Repair	0.00	10,000.00	0.0%	0.00	10,000.00	0.0%	0.00	10,000.00	0.0%
<b>Total 6300 - HABITAT ENHANCEMENT</b>	679,834.26	2,044,200.00	33.26%	0.00	2,044,200.00	33.26%	679,834.26	2,044,200.00	33.26%
<b>7007 - INTEREST EXPENSE-EPPP</b>	0.00	0.00		21,376.80	0.00		21,376.80	0.00	
<b>Total Expense</b>	1,038,940.07	3,297,012.00	31.51%	1,229,107.90	4,417,789.00	27.82%	2,268,047.97	7,714,801.00	29.4%
<b>Net Income</b>	<b>-745,454.07</b>	<b>1,991,107.00</b>	<b>-37.44%</b>	<b>489,115.49</b>	<b>0.00</b>	<b>100.0%</b>	<b>-256,338.58</b>	<b>1,991,107.00</b>	<b>-12.87%</b>



Local Agency Investment Fund  
P.O. Box 942809  
Sacramento, CA 94209-0001  
(916) 653-3001

[www.treasurer.ca.gov/pmia-laif/laif.asp](http://www.treasurer.ca.gov/pmia-laif/laif.asp)  
November 07,  
2016

CACHUMA OPERATION AND MAINTENANCE BOARD

GENERAL MANAGER  
3301 LAUREL CANYON ROAD  
SANTA BARBARA, CA 93105-2017

PMIA Average Monthly Yields

Account Number:

Tran Type Definitions

October 2016 Statement

Effective Date	Transaction Date	Tran Type	Confirm Number	Authorized Caller	Amount
10/14/2016	10/13/2016	QRD	1516563	SYSTEM	2,754.20

Account Summary

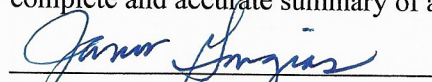
Total Deposit:	2,754.20	Beginning Balance:	1,810,111.35
Total Withdrawal:	0.00	Ending Balance:	1,812,865.55

**MEMO TO:** Board of Directors  
Cachuma Operation & Maintenance Board

**FROM:** Janet Gingras, Secretary

**SUBJECT:** COMB INVESTMENT POLICY

The above statement of investment activity for the month of October, 2016, complies with legal requirements for investment policy of government agencies, AB 1073. I hereby certify that it constitutes a complete and accurate summary of all LAIF investments of this agency for the period indicated.

  
Secretary

# AMERICAN RIVIERA BANK

P.O. Box 329, Santa Barbara, California 93102  
805-965-5942 www.americanrivierabank.com

PAGE 1

CACHUMA OPERATION AND MAINTENANCE BOARD  
RENEWAL ACCOUNT  
3301 LAUREL CANYON RD  
SANTA BARBARA CA 93105-2017

## ACCOUNT ANALYSIS CHECKING

ACCOUNT NO  
STATEMENT DATE 10/31/2016  
LAST STATEMENT DATE 09/30/2016

1	STATEMENT PERIOD		
PREVIOUS BALANCE	34,832.81	# OF DAYS-STMT PERIOD	31
1 DEPOSITS/CREDITS	28,254.80	AVERAGE BALANCE	53,061.71
0 CHECKS/WITHDRAWALS	0.00	YTD INTEREST	0.00
ENDING BALANCE	63,087.61		
TOTAL SRV CHG TODAY	0.00		

## DEPOSITS

DATE	DESCRIPTION	AMOUNT
10/12/16	MERCHANT CAPTURE DEPOSIT	28,254.80 ✓

## DAILY BALANCE SUMMARY

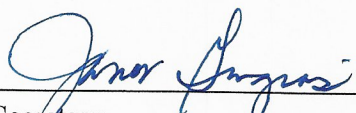
DATE	AMOUNT	DATE	AMOUNT
10/12/2016	63,087.61		

**MEMO TO:** Board of Directors  
Cachuma Operation & Maintenance Board

**FROM:** Janet Gingras, Secretary

**SUBJECT:** COMB INVESTMENT POLICY

The above statement of investment activity for the month of October, 2016, complies with legal requirements for investment policy of government agencies, AB 1073. I hereby certify that it constitutes a complete and accurate summary of all American Riviera Bank investments of this agency for the period indicated.

  
Secretary

# AMERICAN RIVIERA BANK

P.O. Box 329, Santa Barbara, California 93102  
 805-965-5942 www.americanrivierabank.com

PAGE 1

CACHUMA OPERATION AND MAINTENANCE BOARD  
 WARREN ACCT TRUST FUND  
 3301 LAUREL CANYON RD  
 SANTA BARBARA CA 93105-2017

ACCOUNT ANALYSIS CHECKING

ACCOUNT NO  
 STATEMENT DATE 10/31/2016  
 LAST STATEMENT DATE 09/30/2016

1	STATEMENT PERIOD		
PREVIOUS BALANCE	540,560.52	# OF DAYS-STMT PERIOD	31
1 DEPOSITS/CREDITS	173,032.00	AVERAGE BALANCE	618,704.00
0 CHECKS/WITHDRAWALS	0.00	YTD INTEREST	0.00
ENDING BALANCE	713,592.52		
TOTAL SRV CHG TODAY	0.00		

DEPOSITS

DATE	DESCRIPTION	AMOUNT
10/18/16	MERCHANT CAPTURE DEPOSIT	173,032.00 ✓

DAILY BALANCE SUMMARY


DATE	AMOUNT	DATE	AMOUNT
10/18/2016	713,592.52		

**MEMO TO:** Board of Directors  
 Cachuma Operation & Maintenance Board

**FROM:** Janet Gingras, Secretary

**SUBJECT:** COMB INVESTMENT POLICY

The above statement of investment activity for the month of October, 2016, complies with legal requirements for investment policy of government agencies, AB 1073. I hereby certify that it constitutes a complete and accurate summary of all American Riviera Bank investments of this agency for the period indicated.

  
 Secretary

Cachuma Operation & Maintenance Board  
**Paid Claims**  
 As of October 31, 2016

Date	Num	Name	Memo	Amount
<b>1050 - GENERAL FUND</b>				
10/05/2016	24839	ACWA-Joint Powers Insurance Authority	Workers Comp Program 7/1-9/30/16	-9,617.00
10/05/2016	24840	ACWA/Joint Powers Insurance Authority	Auto/Gen Liab Program 10/1/16-10/1/14	-62,130.00
10/05/2016	24841	AECOM Technical Services, Inc.	Task Order No.38-System Isolation Protocol (Ops Div)	-1,729.75
10/05/2016	24842	Alonzo Orozco	Dec mtg fees	-143.28
10/05/2016	24843	Aqua-Flo Supply	Supplies/blow-off parts/marketing paint (Ops Div)	-306.61
10/05/2016	24844	Association of Ca Water Agencies/JPIA	Nov Health Benefits coverage	-27,181.84
10/05/2016	24845	AT&T	Sep charges	-474.25
10/05/2016	24846	Business Card	Office supplies/Training/Domain name renewal/ AAI ad/Laptop rechargeable battery/Water pump	-3,537.44
10/05/2016	24847	Cathy Murillo	Sep mtg fees	-132.48
10/05/2016	24848	City of Santa-Barbara	Trash/Recycle-Sep 2016	-218.67
10/05/2016	24849	City of Santa Barbara-Central Stores	Gloves/ear plugs/vests/masks/flag (Ops Div)	-268.70
10/05/2016	24850	Culligan of Sylmar	Monthly RO system-Oct	-25.95
10/05/2016	24851	Daniel Razo	Reimb straw wattle-QC Xng 4 (Fish Div)	-160.06
10/05/2016	24852	Draganchuk Alarm Systems	Alarm monitoring 10/1-12/31/16/service call - panel battery (Ops Div)	-117.50
10/05/2016	24853	ECHO Communications	Monthly answering service	-62.00
10/05/2016	24854	Federal Express	Mailings-CDFW/HDR (Fish Div)	-109.00
10/05/2016	24855	Frontier Communications	Main office/outlying stations/SCADA	-591.83
10/05/2016	24856	Harrison Hardware	Oak tree mat-supp (Fish Div)	-116.43
10/05/2016	24857	Harwood White	Sep mtg fees	-264.95
10/05/2016	24858	Home Depot Credit Services	Lights/light bulb changer kit/USA marking paint (Ops Div)	-70.36
10/05/2016	24859	Ian's Tire & Auto Repair	Tires/balancing-Chev Silverado 1500 (Ops Div)	-753.03
10/05/2016	24860	ICF Jones & Stokes, Inc.	BO/FMP Compliance-Aug (Fish Div)	-1,505.00
10/05/2016	24861	Lauren W. Hanson	Sep mtg fees	-266.80
10/05/2016	24862	MarBorg Industries	Portable toilets-outlying stations	-328.37
10/05/2016	24863	Musick, Peeler & Garrett LLP	General Counsel-Aug	-3,312.00
10/05/2016	24864	Nargan Fire & Safety, Inc.	Fire extinguisher annual service/inspection/training	-625.44
10/05/2016	24865	Nestle Pure Life Direct	Sep-5 gal disp. (PPE criteria)	-67.30
10/05/2016	24866	O'Reilly Automotive, Inc.	Oil/towels/battery/veh mtce supplies	-164.09
10/05/2016	24867	Orchard Business/SYNCB	Hornet/wasp spray/poly sheet/batteries/sandbags (Ops Div)	-124.22
10/05/2016	24868	Pitney Bowes Global Financial Services LL	Lease agmt-postage meter (Oct-Jan)	-443.88
10/05/2016	24869	Polly Holcombe	Sep mtg fees	-143.28
10/05/2016	24870	Praxair Distribution, Inc	Cylinder rental (acetylene for welder)	-68.59
10/05/2016	24871	Prudential Overall Supply	Mats/scrapers-Sep	-100.56
10/05/2016	24872	Southern California Edison	Main office/outlying stations	-1,537.34
10/05/2016	24873	Tim Robinson	Reimb-water truck repair (Fish Div)	-1,542.12
10/05/2016	24874	Tri-Co Reprographics	Copies-QC Xng 0, 4 (Fish Div)	-296.58
10/05/2016	24875	Trenchalk Network Services, Inc.	IT services/switch replacement	-2,835.15
10/05/2016	24876	Underground Service Alert of So. Calif.	54 Ticket charges	-81.00
10/05/2016	24877	W. Douglas Morgan	Sep mtg fees	-555.20
10/07/2016	24878	PG&E CFM/PPC Department	Agreement-Quiota Crk Xng 0a-Contract (Fish Div)	-7,679.62
10/11/2016	24879	County of Santa--Barbara	Green waste-Sep tickets (Ops Div)	-100.80
10/11/2016	24880	County of SB-North County Office	Remaining Bal Grading permit fee-Xng 0a (Fish Div)	-3,018.54
10/11/2016	24881	County of SB Planning & Development	Land Use Permit Xng 0-Sep staff labor (Fish Div)	-2,461.43
10/11/2016	24882	Cox Communications Santa Barbara	Business internet-Sep	-195.00
10/11/2016	24883	Frontier Communications	SCADA	-574.34
10/11/2016	24884	HDR Engineering, Inc.	Engineering Design-Phase   COMB Projects Aug-Sep srvc (Ops Div)	-8,374.21
10/11/2016	24885	Kimberly Cherry	Reimb-Mileage/Parking Wage/Hour Seminar	-118.92



Cachuma Operation & Maintenance Board  
**Paid Claims**  
 As of October 31, 2016

<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
10/11/2016	24886	Nargan Fire & Safety, Inc.	2.5 Gal water fire extinguishers	-1,080.00
10/11/2016	24887	Paychex, Inc.	9/9, 9/23 payrolls/taxes/deliveries	-322.08
10/11/2016	24888	Peter Lapidus Construction, Inc.	Pay Req #1-Xng 4 (Fish Div)	-78,850.00
10/11/2016	24889	Salmonid Restoration Federation	2016 SRF 2nd Steelhead Summit (TR/SE/SV/DR) (Fish Div)	-475.00
10/11/2016	24890	Southern California Edison	Main office/outlying stations	-48.62
10/11/2016	24891	Tri-Co Reprographics	Copies-QC Xng 0a (Fish Div)	-17.06
10/11/2016	24892	Wright Express Fleet Services	Fleet fuel	-2,051.82
10/13/2016	24893	A-OK Power Equipment-SB	Chaps-PPE (Ops Div)	-107.95
10/13/2016	24894	All Around Landscape Supply	Netting-erosion control (Ops Div)	-767.06
10/13/2016	24895	American Fisheries Society	Member dues 2017 (Fish Div)	-90.00
10/13/2016	24896	Smarden-Hatcher Co.	Couplers-Asegra meter (Ops Div)	-76.50
10/13/2016	24897	Southern California Edison	Foothill Rd	-23.39
10/13/2016	24898	Verizon Wireless	Cellular/Modem's/USB's	-591.66
10/13/2016	24899	American Riviera Bank (ARB)	Principal/Interest pymt #3-Oct	-10,354.21
10/13/2016	24900	American Riviera Bank (ARB)	Principal/Interest pymt #3-Oct	-28,123.75
10/20/2016	24901	Calif Dept of Forestry & Fire Protection	Brush clearing-Lauro/Glen Anne/Ortega (Ops Div)	-2,972.06
10/20/2016	24902	Coastal Copy, LP	Copies mtce agmts	-466.97
10/20/2016	24903	Cushman Contracting Corp.	Emerg Pumping System: Pay Req#29-Phase II	-124,000.00
10/20/2016	24904	Flowers & Associates, Inc.	Engineering services-Lat 3A Abandonment-Aug (Ops Div)	-3,913.50
10/20/2016	24905	HDR Engineering, Inc.	Engineering services-EPFP Aug/Sep	-18,961.01
10/20/2016	24906	Koppl Pipeline Services, Inc.	Site evaluation-NP leaking valve (Ops Div)	-358.00
10/20/2016	24907	Peter Lapidus Construction, Inc.	Ortega Res Project/Underdrain repair/potholing/ Asphalt swale/brush clearing (Ops Div)	-56,780.00
10/20/2016	24908	PG&E	Telcolote Tunnel/North Portal electricity	-406.69
10/20/2016	24909	Premiere Global Services	Conf calls-Sep	-51.03
10/20/2016	24910	Santa Barbara News Press	Admin Asst I ad	-476.20
10/20/2016	24911	Summers Engineering, Inc.	Watershed Sanitary Survey 2016-5th progress billing (Ops Div)	-16,329.39
10/20/2016	24912	Wells Fargo Vendor Fin Serv	Copier lease agmt	-489.24
10/20/2016	24913	Wells Fargo Vendor Fin Serv	Copier property tax	-55.70
10/20/2016	24914	SWRCB	Permit Registration Docs-Quiota Creek Xng 0a and 4 (Fish Div)	-403.00
10/24/2016	24915	County of SB-North County Office	Building permit fee-Xng 0a (Fish Div)	-639.37
10/25/2016	24916	Bureau of Reclamation	1st Period Entitlement 10/1/16-4/1/17	-461,447.85
Total 1050 · GENERAL FUND				<u>-955,260.02</u>

**TOTAL**

**-955,260.02**

**APPROVED FOR PAYMENT**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Director  
 Director  
 Director

FINANCE COMMITTEE

# CACHUMA OPERATION & MAINTENANCE BOARD

## Operations Committee Meeting

3301 Laurel Canyon Road  
Santa Barbara, CA 93105

**Thursday, November 17, 2016**  
**10:00 a.m.**

### AGENDA

1. Call to Order
2. Public Comment (Public may address the Committee on any subject matter not on the agenda and within the Committee's jurisdiction)
3. Lauro Stop Valve Replacement Project (*for information and possible recommendation*)
4. Lateral 1 Meter Replacement Project: Lash Construction Inc. – Change Order Request (*for information and possible recommendation*)
5. Emergency Pumping Facilities Project (EPFP) – Alternatives for Long-Term Pump Station Operations (*for information and possible recommendation*)
6. Infrastructure Improvement Plan (IIP) Projects (*for information only*)
  - A. Repair of Lateral Structure No. 3 – Upper Reach
  - B. AVAR Valve / Blow-Off Replacement / Relocation
  - C. Water Efficiency and Metering Analysis
  - D. North Portal Slope Stabilization
  - E. Lauro Reservoir Tunnel – Concrete Pipe Supports
7. Construction Projects within USBR Right-of-Way (*for information only*)
8. Adjournment

# CACHUMA OPERATION & MAINTENANCE BOARD

## BOARD MEMORANDUM

Date:	November 28, 2016
Submitted by:	Dave Stewart
Approved by:	Janet Gingras

---

**SUBJECT:**                    **Lauro Stop Valve Replacement Project**

---

**SUMMARY:**

The Lauro Stop Valve, a 42" Butterfly valve located in the upper maintenance yard of the COMB property and adjacent to Lauro Reservoir outlet works tunnel, is primarily used to direct flow into Lauro Reservoir via the 42" flume inlet. The valve also serves as an isolation point, allowing COMB operators the ability to bypass the reservoir and supply water directly to Cater Water Treatment Plant (CWTP) in the event of an emergency.

During the 2015 annual valve exercise, COMB staff discovered the valve to be inoperable. Subsequent inspection of the valve's internal components revealed a broken sheer pin inside the valve's gear reduction unit. A replacement sheer pin was purchased as an operable solution, but ultimately failed. Staff determined replacement of the valve was necessary. In an effort to avoid possible project delay, COMB purchased the replacement valve which has been delivered and is stored on site.

The Lauro Stop Valve Installation Project went out for bid on October 18, 2016. HDR Engineering, Inc., provided the technical specifications used in the bid process. Bids on the project were solicited from five (5) local, qualified contractors (*Specialty Construction, Inc., Tierra Contracting, Inc., Lash Construction, Inc., Blois Construction, Inc., and Cushman Contracting Corporation*). Of those, three (3) attended the mandatory pre-Bid job walk (*Tierra Contracting, Inc., Blois Construction Inc., and Cushman Contracting Corporation*). Two (2) contractors submitted responsive bids: Blois Construction, Inc., totaling \$96,470, and Cushman Contracting Corporation (CCC), totaling \$70,750. Staff is seeking authorization to enter into a contract with the lowest responsive and responsible bidder, CCC, in the amount of \$70,750.

This scope of work will require extensive coordination between COMB and the Member Agencies. The contract allows for a 24-hour shutdown which will affect the Goleta Water District (GWD), City of Santa Barbara (City), Montecito Water District (MWD) and Carpinteria Valley Water District (CVWD). A notice-to-proceed will be given once coordination for the 24-hour shutdown schedule has been agreed to by all Member Agencies.

**FISCAL IMPACTS:**

Funds for the installation of the replacement valve are included in the current fiscal year approved budget.

**LEGAL CONCURRENCE:**

General Counsel reviewed the bid documents prior to going to bid and will review all contract language prior to execution.

**COMMITTEE STATUS:**

The Operations Committee reviewed the bid ranking for the Lauro Stop Valve Installation project and forwards to the Board with a recommendation to approve the lowest responsible and responsive bidder; and authorize the General Manager to execute a contract with Cushman Contracting Corporation in an amount not-to-exceed \$70,750.

**RECOMMENDATION:**

The Board of Directors approve acceptance of the bid for the Lauro Stop Valve Installation project from the lowest responsible, responsive bidder, Cushman Contracting Corporation, and authorize the General Manager to execute a contract in an amount not-to-exceed \$70,750 with a provision that the Notice-To-Proceed (NTP) will only be issued upon the Member Agency's mutually coordinated shutdown schedule.



# CACHUMA OPERATION & MAINTENANCE BOARD

## BOARD MEMORANDUM

Date:	November 28, 2016
Submitted by:	Dave Stewart
Approved by:	Janet Gingras

---

**SUBJECT:**                    **Lateral I Meter Replacement Project:**  
**Lash Construction Inc. – Change Order Request**

---

**SUMMARY:**

COMB issued Lash Construction Inc. a time and materials Professional Service Agreement (PSA) for the Lateral 1 Meter Replacement Project on June 20, 2016, with a maximum not-to-exceed amount of \$8,200. During installation, unforeseen conditions underground caused the replacement work to extend to four (4) days instead of the originally estimated two (2) days. Once the Lateral and piping were exposed, not only did the meter and valve require attention, it was determined that an additional thirty (30) feet of lateral piping needed replacement. Due to public safety concerns associated with the exposed trench and the cost to remobilize and coordinate an additional shutdown, replacing both the meter and piping concurrently was the best approach. The additional work to replace and repair the lateral appurtenances caused the post project change order request.

**FISCAL IMPACTS:**

The FY 2016-17 adopted budget contains funding for the change order.

**COMMITTEE STATUS:**

The Operations Committee reviewed the Lash Construction Inc. change order request on November 17<sup>th</sup> and forwards to the Board with a recommendation to approve.

**RECOMMENDATION:**

The Board approve the Lash Construction Inc. change order request in an amount not-to-exceed \$9,759.24.

**LIST OF EXHIBITS:**

1. Lash Construction Inc. Change Order Request, dated October 31, 2016
2. Photographs depicting project



General Engineering Contractor

Office: 721 Carpinteria Street  
Mailing Address: P.O. Box 4640  
Santa Barbara, California 93140  
(805) 963-3553, FAX (805) 965-8189  
License No. 373001-A

# PROPOSAL

TO:

COMB  
3301 Laurel Canyon Road  
Santa Barbara, CA 93105

Attn: Dave Stewart, Operations Manager

RE: Request for Change Order

REF: Time and Material

DATE: October 31, 2016

SUBJECT: Valve & Meter Replacement

LOCATION: Ortega Hill Rd

Gentlemen: In accordance with your request we are pleased to submit the following proposal:

DESCRIPTION OF WORK	UNIT PRICE	TOTAL
<b><u>T&amp;M Tickets for the complete project</u></b>		
<b>T&amp;M Ticket No. 11564 - work performed Wed, 7/20/16</b> Mobilization, excavate, expose existing valve, etc, chip manhole struct around pipe		\$4,733.33
<b>T&amp;M Ticket No. 11565 - work performed Thrusday 7/21/16</b> Cont. breaking openings in manhole structure, remove old meter and piping, install new 10" valve & meter and pipe spools		\$5,320.23
<b>T&amp;M Ticket No. 11566 - work performed Friday 7/22/16</b> Patch manhole openings; wrap pipe in plastic; start backfill of pipe		\$5,349.80
<b>T&amp;M Ticket No. 11567 - work performed Monday 7/25/16</b> Backfill, clean up area, haul off rubble, de-mobilize		<u>\$2,555.88</u>
<b>LESS CONTRACT AMOUNT OF WORK</b>		<u>(\$8,200.00)</u>
	<b>Total:</b>	<b><u>\$9,759.24</u></b>

We sincerely appreciate the opportunity to submit this proposal, subject to the terms on the reverse side. Should this proposal meet with your approval, please sign the White Copy and return to our office for processing and scheduling. Thank you.

The above proposal is hereby accepted:

FIRM: \_\_\_\_\_

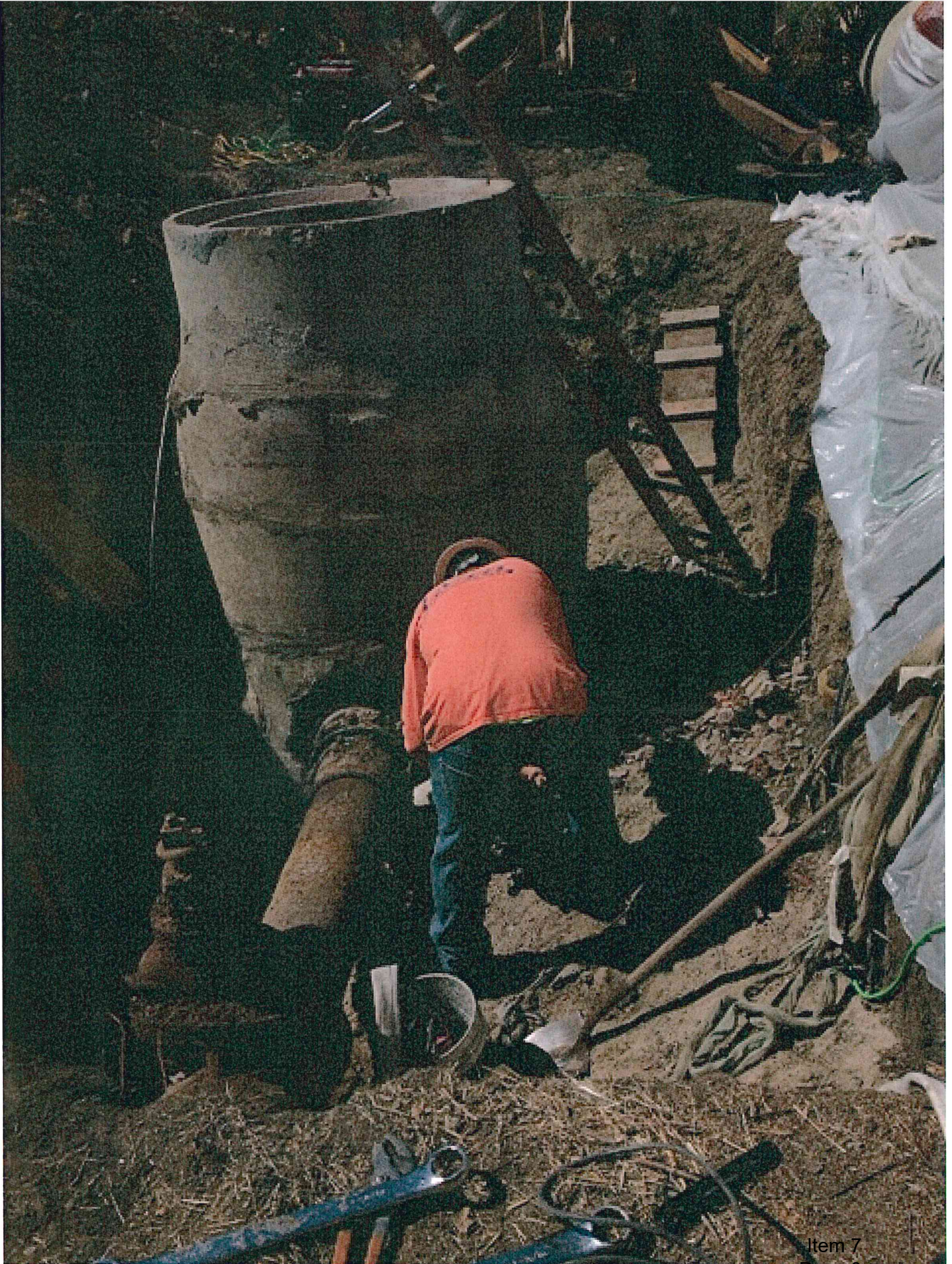
BY: \_\_\_\_\_

DATE: \_\_\_\_\_

LASH CONSTRUCTION, INC.

BY \_\_\_\_\_











# CACHUMA OPERATION & MAINTENANCE BOARD

## BOARD MEMORANDUM

Date:	November 28, 2016
Submitted by:	Janet Gingras

---

**SUBJECT:     **Emergency Pumping Facilities Long-Term Alternatives**  
                  **HDR Engineering, Inc. – Submerged Pipeline Project****

---

### **SUMMARY**

Over the past few months, COMB staff and HDR Engineering, Inc. have been working on a conceptual design plan for long-term alternatives for the Emergency Pumping Facility Project. A presentation was made by Dan Ellison, HDR, to the Member Agency General Managers and technical staff for discussion, input and comment. A similar presentation was provided to the Operations Committee and to the Board of Directors for information.

As previously depicted in the conceptual design presentation, the project consists of submerging two sections of pipeline on the bottom of the lake while the lake level is low. There are various reasons why submerging the pipelines provides many benefits which include a decreased risk of water supply outages, reduction of long term operating costs, elimination of potential damage to the pipe, public safety factors, and enhancing the natural beauty of the lake.

Recently, CCWA formulated a steering committee which included representatives from Santa Barbara County Water Agency, Santa Barbara County Parks Department, U.S. Bureau of Reclamation, Goleta Water District, the City of Santa Barbara and Cater Treatment Plant, Montecito Water District, Carpinteria Valley Water District, COMB and CCWA. The purpose of the steering committee meeting was to discuss alternative methods of connecting the existing CCWA bypass pipe to the Emergency Pumping Facility if, in the event, the lake could no longer function as a conveyance facility. The first meeting took place on Thursday, October 13<sup>th</sup> and a second meeting was held on Monday, November 14<sup>th</sup>, which also included a representative from the SYRWC Parent District.

The discussion and resultant consensus from the steering committee meeting was that COMB should be the lead agency for implementation of the pipeline project since COMB was currently in the process of preliminary project preparation tasks with the Emergency Pumping Facility (EPF) Project Engineer, HDR and was best positioned to implement the project.

For review and consideration, attached is a proposal for professional engineering services submitted by HDR in support of the EPF long-term alternative project. As the project engineer for the EPF, HDR has been working with staff on the preliminary conceptual design of this project and is uniquely qualified to deliver the necessary project management, engineering and design services.

The proposal identifies five task groups which include project management, preliminary pipeline engineering, hydraulic and transient analysis, and geotechnical analysis, pipeline engineering and bid-phase engineering services. For purposes of identifying a confirmed approach to the project, staff recommends phasing the preliminary engineering tasks by first focusing on the completion of task groups 100, 200 and 300. The hydraulic, transient, and geotechnical analysis efforts will identify information

specifically useful in continuing with task groups 400 and 500, pipeline engineering and bid-phase services as the next phase of this proposal. COMB will coordinate a meeting with the Member Agency General Managers and technical staff to review and advance the discussion on options associated with the part two pipeline.

The current fiscal year approved budget for the EPF contains funding for demobilization if the lake were to rise sufficiently to relocate the barge system back to the site 1 location or off the lake. The suggested approach to fund this recommended phase of services is to utilize a portion of this budget item. The environmental processes of securing permitting and regulatory compliance documents will be conducted internally by COMB staff. Once information has been acquired from the initial phases of engineering services work (tasks 100, 200, 300) and project specifics have been finalized, staff will forward the next phase of proposed engineering services to the Committee and Board for review and approval.

**FISCAL IMPACTS:**

The funding for phase one of the HDR proposed engineering services is contained in the FY 2016-17 adopted budget.

**ENVIRONMENTAL COMPLIANCE:**

COMB staff will be securing permitting and environmental regulatory compliance documents for the project.

**COMMITTEE STATUS:**

The Operations Committee reviewed the HDR Proposal for Engineering Services to design permanent EPF pipelines, phase one (Estimate A), and forwards to the Board with a recommendation to approve.

**RECOMMENDATION:**

The Board of Directors approve phase one (Estimate A) of the HDR Proposal for Engineering Services to design permanent EPF pipelines and authorize the General Manager to sign a Professional Services Agreement for an amount not-to-exceed \$108,048.

**LIST OF EXHIBITS:**

1. HDR Proposal for Professional Engineering Services
2. Project Description – Lake Cachuma Submerged Pipeline Project



November 15, 2016

Ms. Janet Gingras  
General Manager  
Cachuma Operations & Maintenance Board

Sent via email: [JGingras@cachuma-board.org](mailto:JGingras@cachuma-board.org)

Subject: **Proposal for Engineering Services to Design Permanent EPF Pipelines** - Part 1 and Part 2

Dear Ms. Gingras,

HDR proposes to prepare drawings and specifications for the construction of the permanent EPF Pipelines at Lake Cachuma, as described in the Project Description (Attachment 1). Permanent installation of these pipelines provides many benefits, and swift completion of the design may allow COMB to procure grant funding. As COMB's engineer for the Emergency Pumping Facility (EPF), HDR has been working with COMB on the preliminary design of these facilities, and is uniquely qualified to deliver the needed documents. HDR's team will include well-qualified subconsultants to assist with hydraulic transient analysis and geotechnical engineering. Permit procurement and environmental clearance will be handled by COMB staff.

HDR proposes to phase the work, so that changes of direction may occur, as the details regarding grant funding and permit requirements emerge. This letter provides a proposed Scope of Work, Estimate of Fee, and Conceptual Schedule. It is proposed that work begin immediately, allowing for advertisement, bid, and award by spring, with construction next summer.

## Scope of Work

HDR will perform the following tasks.

### Task Group 100 – Project Management and Preliminary Pipeline Engineering

- 101 **Project Initiation and Administration.** Organize/facilitate a project team kickoff meeting. Assemble and distribute relevant data to team. Develop and distribute a project management manual, including a quality management plan. Participate in Project Approach and Resource Review (PARR) and zero-percent review meetings. Execute subagreements and coordinate work of geotechnical and hydraulic analysis consultants.
- 102 **Field Investigations.** With COMB staff and geotechnical team members, walk the proposed alignments, taking notes and photos.
- 102A **Tunnel Adit Connection Investigation.** Coordinate excavation at the north portal of the Tecolote Tunnel and observe physical conditions. This task is needed to assess the feasibility of making a connection to the bulkhead closure of the tunnel adit.

- 103 **Agency Meetings.** Participate in meetings with member agencies and regulatory agencies to present and discuss project.
- 104 **Other meetings.** Attend Board, committee, and general managers meetings, upon COMB request.
- 105 **Miscellaneous Reports and Correspondence.** Prepare monthly progress reports for COMB. Participate in or lead ad hoc conference calls and email correspondence. Prepare memoranda and letters communicating project needs and status.
- 106 **Design memorandum.** Develop a memorandum that documents the criteria, hydraulic analysis, concept, alignment, construction access, construction impacts, and general features of the proposed pipelines. Include a preliminary opinion of cost. Provide draft and final copies of report.

### Task Group 200 – Hydraulics and Transient Analysis

- 201 **Hydraulic Analysis Cases.** Refine the hydraulic schematic shown in the Project Description. Define hydraulic analysis cases and develop parameters for transient analysis.
- 202 **Steady-state Hydraulics.** Analyze steady state hydraulics for select conditions, using pump curves from EPF project and other data.
- 203 **Transient Hydraulic Analysis.** HDR will engage the services of Northwest Hydraulics Consultants (NHC) to analyze transient hydraulic conditions resulting from the sudden interruption of power to the pumping barge. Of particular interest is the volume of air that would be introduced into the pipeline. NHC proposes to construct a hydraulic transient analysis model of the system using the TransAM hydraulic transient analysis software.

NHC's detailed scope of services is found in Attachment 2.

### Task Group 300 – Geotechnical Analysis

HDR will engage the services of Fugro Consultants, Inc. to sample and test soils along the pipeline alignments in order to characterize the conditions and determine criteria for pipeline design. Fugro's services for the project will consist of characterizing the soils in the on-shore pipeline segments for use in evaluating the general soil conditions (lake bed sediments, alluvium, or bedrock) for trenching and construction and providing unit weight data for the sediment or native soil/rock materials. Data from the study may also be needed to provide input to the design of on-shore anchoring systems such as screw anchors, mini piles, or driven elements. Fugro's detailed scope of services is found in Attachment 3 and consists of:

- 301 **Data Review, Pre-Field Planning, and Coordination.** This includes a review of available geologic maps, historical photographs, and comparison of current bathymetry survey data with historical topographic data. It also includes site reconnaissance and planning of exploratory work.
- 302 **Subsurface Exploration.** Fugro proposes to use a series of hand excavated, and hand-augered holes, along with track-mounted hollow-stem drilling equipment to collect samples for analysis.
- 303 **Laboratory Testing.** Fugro will perform laboratory testing, including tests to determine moisture/density relationships, grain-size, plasticity, and shear strength.
- 304 **Geotechnical Evaluation and Reporting.** Fugro's findings and recommendations will be summarized in a written report, including results of laboratory tests.



### Task Group 400 - Pipeline Engineering

HDR will prepare construction documents for public advertisement, bid, and award of this project.

- 401 **Drawings.** Prepare approximately 52 drawings<sup>1</sup>, as follows:
- Cover sheet: Location, drawing index.
  - General notes and symbols.
  - Sheet Index (2 sheets: 1 for each pipeline)
  - Pipeline Plan and Profile (43 sheets: 23 sheets for Part 1 Pipeline and 20 sheets for Part 2 Pipeline)
  - Adit Connection Details (1 sheet)
  - Pipeline Details (4 sheets – 2 for each pipeline)
- 402 **Specifications.** Prepare technical specifications in 6-digit, CSI format. Edit COMB general and special conditions.
- 403 **Cost Estimate.** Prepare engineer's opinion of probable cost at 90% completion stage.
- 404 **Progress Submittals.** Provide progress submittals at 75 percent and 100 percent completion.
- 405 **Quality Control Review.** Provide independent quality control review of plans, specs and estimate at the 90 percent progress stage.

### Task Group 500 – Bid-Phase Engineering Services

- 501 **Advertisement.** Upon Board authorization, HDR will contact 3 plan rooms for distributing the construction documents. HDR will also send construction documents directly to contractors who have recently bid COMB projects. Task includes time for answering miscellaneous phone and email messages.
- 502 **Prebid Meeting.** HDR will attend the bidders conference, which will include a meeting at COMB headquarters and a tour of existing facilities at the lake.
- 503 **Bid Addenda.** HDR will prepare two bid addenda, providing formal answers to bidder questions.
- 504 **Evaluation of Bids / Recommendation of Award.** HDR will tabulate and compare bids and will evaluate the qualifications of the two lowest bidders, including: (a) obtaining a Dun & Bradstreet report; (b) verifying state license, and (c) calling references. HDR will prepare a letter recommending award of contract.

### Fee Estimates

Two Engineering Fee Estimates are enclosed and summarized below. It is recommended that Task Groups 100 through 300 be authorized now, assuming both pipelines are constructed. If public bidding is not required, or if the Part 2 pipeline is not installed permanently, the engineering fee for Task Group 400 could be reduced.

- Fee Estimate A assumes both pipelines will be designed and permitted as one project, with one construction contract
- Fee Estimate B assumes that only the Part 1 Pipeline will be designed and permitted at this time

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<sup>1</sup> For EPF Pipeline Part 1 only, 29 drawings are estimated

**Fee Estimate Summary**

	<b>Estimate A Both Pipelines</b>	<b>Estimate B Part 1 Pipeline Only</b>
Task Group 100 – Preliminary Engineering	\$49,330	\$43,341
Task Group 200 – Hydraulic & Transient Analysis	\$25,970	\$25,970
Task Group 300 – Geotechnical Analysis	\$32,748	\$27,843
<b>Subtotal – Phase 1 Budget</b>	<b>\$108,048</b>	<b>\$97,154</b>
Task Group 400 – Final Pipeline Design	\$111,926	\$79,064
Task Group 500 – Bid-Phase Services	\$10,148	\$10,148
<b>Subtotal – Phase 2 Budget</b>	<b>\$122,074</b>	<b>\$89,212</b>
<b>Total FEE</b>	<b>\$230,122</b>	<b>\$186,366</b>

The decision regarding whether one or two pipelines are constructed should be made relatively soon, if the project is to adhere to the schedule shown below. If only the Part 1 pipeline is authorized, the Part 2 pipeline may be added later, but additional costs will be incurred for both design and construction.

**Schedule**

Because the lake level is currently very low, a rare opportunity exists to construct much of this pipeline without the need for barge-mounted equipment. Burial of the pipeline in exposed lake bed sediment is also much more cost-effective than adding concrete collars for ballast. A fast-tracked project schedule is thus a priority. The overall project schedule will be significantly influenced by the financing, permitting, and CEQA/NEPA processes, the durations of which are currently not known. Completion of final design for both pipelines is expected to take about 2.5 months after authorization.

Activity	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17
Phase 1 - Prelim Engineering	█	█									
Permit Procurement	█	█	█	█	█						
Phase 2 Final Design		█	█	█	█						
Advertise			█	█	█						
Evaluate Bids & Award				█	█	█					
Mobilize					█	█	█	█	█		
Part 1 Pipeline						█	█	█	█	█	
Service Cutover								█	█	█	
Part 2 Pipeline									█	█	█
Demobilize											█
Project Complete											█

**Assumptions and Exclusions**

- Project Packaging.** This scope of work and fee estimates assume construction of single project with one construction contract. If the pipelines are designed, permitted, and constructed as two projects, the engineering fee would be significantly higher.
- Meetings.** The approximate number of meetings is as shown in the fee estimate or described in the scope of work. Meetings will generally be held in Santa Barbara or Goleta.
- Miscellaneous Correspondence and Reports.** The fee estimate allocates 6 hours per week (4 for the HDR PM and 4 hours per week for other HDR staff) for miscellaneous correspondence and reports in response to COMB staff requests and project needs.
- Tunnel Adit Excavation.** Excavation at the tunnel adit will be performed by Cushman Contracting Corporation, as a change order to their existing contract. The fee estimate includes help with negotiating the change order.

5. **Deliverables.** Work products will be delivered in digital format (MSWord, PDF, ACAD) via email.
6. **Native American Monitor.** The fee estimate currently does not include the cost of a Native American Monitor during the geotechnical investigation or tunnel adit excavation. If a monitor is needed, COMB will make the needed arrangements.
7. **Permit Acquisition.** The schedule for permit acquisition and CEQA/NEPA documentation is currently not defined. The schedule shown here is subject to revision.
8. **Construction Procurement.** This proposal assumes that the traditional design-bid-build method of procuring construction services will be used. Alternatively, services may be procured using a change order to COMB's existing EPF DBOM contract, in which case, the required fee may be slightly reduced.
9. **Construction Phase Services.** A proposal for construction-phase engineering services will be provided when the design is near completion and permit conditions are better defined.

### Terms and Conditions

HDR will perform these services on a time-and-materials basis, in accordance with the terms and conditions of a mutually-acceptable agreement. The proposed fee will not be exceeded, unless authorized in writing by COMB.

HDR appreciates the opportunity to work with COMB on this very important project. If there are any questions regarding this proposal, please do not hesitate to contact Dan Ellison.

**Sincerely,**

HDR Engineering, Inc.



Kip Field  
*Vice President*



Dan Ellison, PE  
*Project Manager*

- Attachment 1 – Project Description
- Attachment 2 – NHC Proposal
- Attachment 3 – Fugro Proposal
- Attachment 4 – Fee Estimate A (Both Pipelines)
- Attachment 5 – Fee Estimate B (Part 1 Pipeline Only)

# Project Description

## Lake Cachuma Submerged Pipelines

This document describes the purpose, necessity, background and basic design criteria for a pipeline project proposed at Lake Cachuma, to be constructed by the Cachuma Operations and Maintenance Board (COMB). The project consists of installing one submerged pipeline from the Tecolote Tunnel inlet tower to the site 2 location of the Emergency Pumping Facility (EPF) and a second pipeline from the EPF to CCWA's existing bypass pipeline near Bradbury Dam. This project will improve the reliability of water supply from the lake and from the State Water Project to the South Coast of Santa Barbara County. Both pipelines are necessitated by the current, severe, 5-year drought, which has reduced lake volume to 7 percent of capacity.

The two proposed pipelines consist of:

- The "Part 1 Pipeline" is a 36-inch diameter pipeline which runs from the Tecolote Tunnel Inlet Tower to the Emergency Pumping Facility. The existing, temporary, partially floating 10,100-ft pipeline would be replaced by a more permanent pipeline with approximately half the pipeline buried in trenches and the other half lying on the lake bed, ballasted by concrete collars.
- The "Part 2 Pipeline" is a 36-inch diameter pipeline which would run from the existing, temporary Emergency Pumping Facility to Bradbury Dam where it will connect to an existing State Water inlet pipeline owned by Central Coast Water Authority (CCWA). This 9,500-ft pipeline would make use of surplus material from the EPF project and would also be partially buried and partial lying on lake bed.

The alternatives to these facilities are temporary pipelines installed along the shoreline and floating in the lake. A temporary pipeline is currently installed at the lake between the Inlet Tower and the EPF, while the need for a pipeline from the EPF to the CCWA pipeline is projected for mid-2018.

### SUMMARY OF BENEFITS

The project will improve water supply reliability for the 250,000 residents on the South Coast of Santa Barbara County. Lake Cachuma provides approximately 80 percent of the water for the South Coast communities of Goleta, Santa Barbara, Montecito and Carpinteria.

The benefits of the proposed permanent pipeline are:

1. The risks of water supply outages to the South Coast will be substantially reduced
  - a. There will no longer be a need to interrupt water deliveries to move an existing floating pump station from location to location, as the lake level rises and falls
  - b. The chance of damage to critical supply pipelines will be substantially reduced
  - c. The chance that contamination of the lake will endanger water supply will be eliminated; a permanent means of lake bypass is provided
  - d. The lake bypass system also reduces the chance that a malfunction of the existing pumping barge will interrupt water supply
  - e. Should the tunnel inlet tower be damaged in an earthquake, the proposed Part 1 Pipeline may provide an alternative means of water supply directly to the tunnel
2. The long-term costs of operating these pipeline and pumping facilities will be reduced

- a. The need to remove, store, and possibly reinstall portions of the pipelines and supporting piles is eliminated
  - b. The cost of relocating the floating pump station from site to site is eliminated
  - c. The need to occasionally demolish the entire facility and then reconstruct it at a later date is eliminated
  - d. By avoiding the need to re-pump water delivered by CCWA, energy will be saved
3. Public safety will be improved
- a. By eliminating the existing floating pipeline and mooring piles, hazards to boaters on the lake are removed
  - b. By simultaneously flowing water from both CCWA and Lake Cachuma, these pipelines can be used to increased water supply to the South Coast, during major fires and other emergencies
4. The lake will be returned to a more natural state, enhancing public enjoyment
- a. Permanently removing the floating pipelines and piles eliminates a major eyesore and impediment to boaters and fishermen
  - b. Installing the Part 2 Pipeline in a trench eliminates a future obstacle along the lakeshore, as well as another eyesore
  - c. There will not be a need to stockpile miles of pipeline segments and hundreds of mooring piles next to the lake, when not in use

A frequent need for these pipelines is foreseen over the next 50 years, due changes in climate and changes in how water from the lake will be allocated. The consensus of climate scientists is that frequent and severe droughts can be expected, and the experience of the last 5 years will often recur. Additionally, a new biological opinion and other factors are expected to alter how water is allocated, resulting in frequently low lake levels.

## URGENCY

This project is “shovel-ready”. Construction can be started in approximately three months (as soon as permits are in hand). By moving swiftly, COMB can take advantage of extremely low lake levels, which will facilitate construction. Quick completion of this project also avoids the costs and risks associated with maintaining the pipeline in its current state. Depending on the weather conditions, construction can be completed about six (6) months after mobilization.

## Purpose and Necessity

When the Cachuma Project was constructed 58 years ago, the north portal inlet to the Tecolote Tunnel was placed nearly 3.5 miles upstream from Bradbury Dam. This reduced the amount of tunneling required to connect the reservoir to water agencies on the South Coast of Santa Barbara County, but creates difficulties when water recedes from the inlet tower. As is currently the case, a pumping station and pipeline are required to convey water from the reservoir to the tunnel inlet tower.

Reportedly the need for such pumping and pipeline facilities was recognized during planning of the original project, but facilities were not included in the original design to accommodate this. Twice in the history of the reservoir, the shoreline has receded away from the inlet tower, and emergency facilities have been constructed to convey water to the inlet tower for use in the South Coast cities / communities of Goleta, Santa Barbara, Montecito and Carpinteria.

Since its construction, Lake Cachuma has been the largest source of water for these South Coast communities. With completion of the “Coastal Branch” of the State Water Project (SWP) in 1997, these communities’ dependence on this local water source was reduced, but not their reliance on the Cachuma

reservoir facilities. SWP water purchased by South Coast agencies is conveyed to the reservoir and discharged to the lake near Bradbury Dam through facilities owned and operated by the Central Coast Water Authority (CCWA). This water is then delivered to the South Coast using the same reservoir facilities used to extract and transport reservoir water, specifically the inlet tower, Tecolote Tunnel, and currently the emergency pumping and pipeline facilities connecting these facilities to the lake.

In 2014, the latest incarnation of emergency water conveyance facilities, the Emergency Pumping Facility (EPF), was constructed. The EPF consists of a 600 HP floating pump station and 36-inch diameter floating pipeline (Figure 1<sup>1</sup>). The pumping barge is tethered to on-shore electrical equipment from which it receives power from the local utility, Pacific Gas and Electric. In 2016, the pumping barge and on-shore facilities were moved to their current location (“Site 2”) next to the public campground, and the pipeline was extended to roughly 10,100 feet in length. The pumping barge had functioned in its previous location (“Site 1”) for about one year, but continued shrinkage of the lake necessitated its relocation. The floating pipeline is held in position by a series of steel piles driven vertically into the lake bed (Figure 2). These piles resist the wind and wave forces that would otherwise dislocate and damage both the pipeline and the pumping barge. These mooring piles were an economical way of quickly installing the pipeline and also allow for a wide range of lake levels.

As of November 1, 2016, the water elevation was at 646.75 feet (14,267 AF), which is 7 percent of reservoir capacity. Around December, 2016, the 12,000-acre-ft “minimum pool” level of 643 feet is expected to be reached, at which point the only water withdrawn from the lake for South Coast usage will be SWP water delivered to the lake. Without significant inflow, the lake level will continue to recede (although more slowly), due to evaporation.

If lake shrinkage continues for another year or more, it will be necessary to extend the pipeline further down the lake to connect to the pipeline owned by CCWA which conveys SWP water to the lake. The pumping barge might also be relocated to a third position, near Bradbury Dam. This “Part 2 Pipeline” can be a temporary facility (like the current pipeline) or permanent, as proposed by this Project Description.

The EPF pumping barge and pipeline were designed and constructed as temporary emergency facilities. If the EPF’s pipeline is not made permanent, several actions will be necessary as the lake level rises, to maintain water supply to the South Coast, and to protect equipment, boaters on the lake, and the environment:

- When the water elevation is between 658 and 670 feet, the pumping barge will need to be relocated back to “Site 1”. This is to prevent the pipeline from becoming unmoored when it rises above the top of the Site 2 piles. After relocation of the pumping barge, approximately 7000 feet of pipeline and associated piles would be removed and temporarily stored near the lake.
- When water reaches elevation 676 feet, the pumping facility will be placed in “standby” mode, as gravity flows to the inlet tower resume, but the facility would remain in place for possible future use.
- Before the water level reaches elevation 700 feet, the remaining approximately 3000 feet of pipeline and associated piles would be removed and temporarily stored near the lake. This is to prevent the pipeline from becoming unmoored, as it rises above the top of Site 1 piles.
- Before the water level reaches elevation 738 feet, the on-shore electrical equipment and other facilities at Site 1 need to be removed to prevent their submergence.

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<sup>1</sup> Figures are found in Appendix A.

As currently constructed, it is likely that the EPF facilities will remain at the lake for many years, either in operation, in standby mode, or in storage. The lake is currently at unprecedented low levels and many wet months will be required to restore it to normal levels. During the “miracle” rains of Spring 1991, an extraordinary 47,000 AF was restored to the lake in March and April. If this were to happen this coming March/April, the lake might rise from the “minimum pool” level of 12,000 AF to 59,000 AF (Elev. ~ 691), still less than 30 percent capacity. This would allow gravity flow to resume, but perhaps only for a short time. The pumping facility would not be removed from the lake. If two “Miracle March” inflow events occurred adding 94,000 AF to the lake, the level would rise to Elevation 719, allowing gravity flow through Gate 4 and unmooring the pipeline, but leaving the Site 1 on-shore facilities still well above the water. Even at this elevation, it is doubtful that the facility would be fully demobilized. At least 3 years of average runoff are needed before the reservoir is full.<sup>2</sup>

It is very possible that changes in lake levels would necessitate the repeated removal and reinstallation of portions of the temporary pipeline and piles, along with the associated relocation of the pumping barge to various sites. It is also very possible that the need for the EPF could return shortly after it has been entirely removed, dismantled, and scrapped. The current need for the EPF arose less than 3 years after the reservoir had been fully filled and spilled water.

The need for an EPF is expected to arise more frequently in the future. How the lake is operated and water is allocated is expected to change, with more water allocated to the Hilton Creek fishery and other downstream uses. Climate change is also expected to produce more frequent and more prolonged droughts than have historically occurred. The historical precedent of needing pumping facilities just twice in 58 years of operation is not a good guideline for what the future may bring. As a consequence, COMB and its Member Agencies have determined that more permanent pipeline facilities are needed for reliable long-term use.

## Project Overview

This project involves a more permanent installation of pipeline facilities at Lake Cachuma, allowing for continued, intermittent operations for the next 50 years. The pipeline will be made more permanent by securing it on or below the lake bed, which eliminates the need to occasionally remove and reinstall it. In addition to improving the reliability of operations, a more permanent, submerged pipeline provides other benefits:

- It allows the lake to be fully returned to recreational use. The pipe and piles will no longer pose obstacles and potential hazards to boaters.
- Submergence / burial of the pipeline also protects it from damage from boaters, vandals, and long-term degradation from sunlight.
- The need to interrupt service in order to relocate the pumping barge is eliminated. The on-shore facilities at Site 2 are wholly above the high-water level—there is no need to move or relocate them in the short term.
- The lake is returned to a more-natural state. The visual impairment of the floating pipeline and piles is eliminated. The Site 1 on-shore facilities can also be permanently removed.

The lake is currently at unprecedented low levels. Not since the reservoir was first filled has the water level been this low. By December, roughly half of the existing pipeline will be out of the water, and most of the proposed alignment for a Part 2 pipeline will be similarly exposed. This presents a rare opportunity

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<sup>2</sup> Per a 1995 Bureau of Reclamation Report, the average annual yield of the basin is 66,000 acre-feet and average evaporative losses are 16,000 acre-ft. Reservoir capacity is approximately 208,000 acre-feet.



to do much of the work on land, which reduces costs and enables pipeline burial, which provides a better solution than alternative methods (Figure 3).

For a reliable, 50-year pipeline, thicker-walled pipe is required for the Part 1 Pipeline. The existing pipe, if submerged, could temporarily collapse due to transient hydraulic conditions caused by a sudden power outage at the pumping barge. To prevent this, material with a dimension ratio (DR) of 17 to 19 material is needed. The current pipeline is made from thinner (DR26) material, which was satisfactory for a floating pipeline, but is not recommended for a submerged pump station discharge line.

The acquisition of the thicker-walled pipe for the pump station frees up roughly 10,000 feet of 36-inch high-density polyethylene (HDPE) pipe which is quite suitable for the Part 2 Pipeline. The Part 2 Pipeline is not subject to similar transient conditions, so the thinner wall pipe works at this other location.

Installation of the Part 2 Pipeline as part of this project has several important advantages:

- By reusing the existing pump station discharge pipe, the cost of the Part 2 pipeline is dramatically reduced
- Economies of scale apply to the concurrent engineering, permitting and construction of both pipelines. Notably, the mobilization of construction equipment to the lake bed and the launching of construction barges on the lake are relatively costly.
- Installing the pipeline as part of this project reduces risks of interruption of the South Coast water supply. Supply to the South Coast is currently vulnerable from: (1) malfunction of the pumping barge, (2) insufficient water in the lake to support pumping,<sup>3</sup> (3) contamination of the lake from various causes<sup>4</sup>
- During emergencies such as wild fires, the Part 2 Pipeline could be used in conjunction with the EPF pumping barge to temporarily increase flows the South Coast
- Installing the pipeline improves operational flexibility for the South Coast water treatment plants; water may be supplied from CCWA, the lake, or both (blended), depending on supply availability and water quality
- A permanently installed Part 2 pipeline reduces transient surge pressures in the pump station discharge pipeline, reducing the chance of damage to the Part 1 Pipeline and also lessening the number of concrete collars needed to offset buoyancy in the submerged pipeline
- If SWP water is conveyed directly to the Tecolote Tunnel, evaporative losses associated with lake conveyance are eliminated, as well as the energy costs associated with pumping from the lake

## Project Components

Two pipelines will be constructed, the Part 1 Pipeline and the Part 2 Pipeline. Each will have reaches that will be constructed on exposed lake bed and below the water. On the exposed lake bed, the pipelines will be buried within trenches. In the water areas, the pipelines will be submerged using concrete collars, as described later. The basic design criteria for the two pipelines are summarized in Table 1.

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<sup>3</sup> For example, in August 2016, a malfunctioning valve on the penstock created a risk that nearly all remaining water might be inadvertently drained from the lake

<sup>4</sup> As the reservoir body gets smaller, the risk of contamination increases. Algae blooms are more probable and the ability to dilute other contaminants decreases.



**Table 1. Lake Cachuma Submerged Pipelines Design Criteria**

	Part 1 Pipeline		Part 2 Pipeline	
Alignment	Tunnel Inlet Tower to EPF Site 2 (Figure 4)		EPF Site 2 to CCWA Bypass Pipe Discharge at Bradbury Dam (Figure 5)	
Overall length	10,100 feet		~ 9500 feet	
Outside diameter	36 inches		36 inches	
Maximum flow rate	30 mgd (46 cfs)		14 mgd (22.5 cfs)	
Maximum hydraulic grade line	720 feet (44 ft head + 676 ft discharge)		720 feet (crest of Bradbury Dam spillway)	
Reaches	Trenched	Sunken	Trenched	Sunken
Reach length	~ 4640 feet	~ 5460 feet	~7500 feet	~ 2000 feet
Minimum pipe elevation	640 feet	619 feet	660 feet	618 feet
Maximum internal pressure	35 psi (720-640 feet)	44 psi (720 ft–619 ft)	45 psi (765-660 ft)	63 psi (765 ft – 618 ft)
Maximum external differential pressure	16 psi (676 ft–640 ft)	25 psi (676 ft–619 ft)	7 psi (676 ft–660 ft)	0 psi (Note 6)
Minimum wall thickness, HDPE 4710, AWWA C906	1.9 inches DR19	2.1 inches DR17	1.4 inches DR26	1.4 inches DR26
<b>Table notes:</b>				
1. Elevations are based on “tower” datum (NGVD 1929). Conversion is: NGVD29 + 2.38 ft = NAVD88				
2. Maximum lake level during EPF pumping operations = 676 feet				
3. Portions of pipelines installed in trench depends on the lake level at time of installation				
4. Internal long-term pressure ratings: DR 17 = 125 psi; DR 19 = 111 psi; DR 26 = 80 psi				
5. External short-term pressure ratings: DR 17 = 28 psi; DR 19 = 21 psi				
6. External pressure on submerged Part 2 Pipeline will be confirmed with transient analysis				

### Pipeline Ballasting

HDPE pipe is preferred for underwater installations because it is very flexible and can conform to the variations in lake bed elevations. With fully-fused joints, the pipe also lends itself to applications where it is fused on land, then pulled into location. Although other pipeline materials can be similarly joined together, they are less flexible and have other less-desirable characteristics.<sup>5</sup>

Because HDPE has a specific gravity of 0.96, when fully filled with water, it is slightly buoyant. To sink it and keep it submerged, ballasting must be provided. The amount of ballasting depends on the pipe size, wall thickness, water currents, and the amount of air that is inside the pipe. Because the water current at the bottom of the reservoir is negligible, the recommended ballasting is 25 percent of the weight of the water displaced by the pipe ( $W_{DW}$ ).<sup>6</sup> The ballasting must also be greater than the buoyancy force, with an appropriate margin of safety.<sup>7</sup>

As mentioned earlier, air can be sucked into the Part 1 Pipeline following a sudden cessation of pumping, such as when a power outage occurs. If the Part 2 Pipeline is connected to the Part 1 Pipeline, water within the Part 2 Pipeline will act as a very long “surge tank”, minimizing the amount of air that might be

<sup>5</sup> PVC pipe is more susceptible to cracking and cracks can propagate hundreds of feet in fused pipe. Ductile iron is susceptible to corrosion. Concrete pipes are hard to handle and less flexible.

<sup>6</sup> Reference: Chapter 10, Marine Installations, HDPE Pipeline Design Manual

<sup>7</sup> For trench burial, a higher margin of safety will be used than for sunken burial (1.5 vs 1.2). With a sunken burial, a temporary uplifting of the pipe is tolerable.

pulled into the pipe. Additionally, even under steady-state flow conditions, some amount of dissolved air will come out of solution and accumulate in high points within the pipe. Dissolution of air occurs when water temperatures increase or when pressures decrease.

Table 2 shows the preliminary ballasting requirements.

**Table 2. Pipeline Ballasting Requirements**

	Part 1 Pipeline		Part 2 Pipeline	
	Trenched	Sunken	Trenched	Sunken
Pipe Size	36-inch DR19	36-inch DR17	36-inch DR26	36-inch DR26
Weight of water displaced ( $W_{DW}$ )	441 lbs/ft	441 lbs/ft	441 lbs/ft	441 lbs/ft
Air ratio <sup>8</sup>	30%	100%	20%	20%
"K" factor <sup>9</sup>	0.25	0.776	0.176	0.176
Buoyant force, $F_B$ ( $F_B = K \times W_{DW}$ )	110 lbs/ft	335 lbs/ft	78 lbs/ft	78 lbs/ft
Ballast criterion	$1.5 \times F_B$	$1.2 \times F_B$	$0.25 \times W_{DW}$	$0.25 \times W_{DW}$
Ballast needed	165 lbs/ft	400 lbs/ft	110 lbs/ft	110 lbs/ft
Minimum cover <sup>10</sup>	2 ft	N/A	2 ft	N/A

## Trench Installations

Where feasible, the pipelines will be installed in trenches along the exposed lake bed. Burial in trenches is preferred because it minimizes the importation of materials, provides economical ballasting for the pipeline, and protects the pipeline from boater-caused damage. Trenching helps maintain the pipe at a relative consistent profile, minimizing the accumulation of air within the pipe.

In general the pipeline will be buried within silt that has been deposited in the reservoir over the last 58 years, but excavations may encroach into earlier terrace deposits. A full-time Native American observer will be present at all times during excavation. All materials that are excavated will be redeposited within the lake bed within a few feet of excavation. Exportation of material is not planned. In shallow water and muddy areas, special excavating equipment will be required, including the use of an amphibious excavator (Figure 6).

## Sunken Installations

Near Pumping Barge Site 2, both pipelines will need to be installed by floating them into location and sinking. Ballast will be provided by attaching precast concrete collars (Figure 7) and then lowering the pipe to the lake bottom. The preliminary spacing of these collars is 20 feet, based on industry guidelines, but the spacing will be confirmed during final design.

Often, such collars are attached to pipelines on shore as the pipes are fused, then the pipe "sting" is pulled into position while filled with air. Once in place, the air is released from the pipe, allowing it to sink onto the lake bed. For the two pipelines that are included in this project, an alternative method will likely be employed, where the concrete collars will be attached using a crane-mounted barge, as shown in Figure 8. Barge attachment is foreseen for the Part 1 Pipeline because the ballast weights exceed the

<sup>8</sup> Air content of Part 1 Pipeline to be confirmed. An air release valve will be provided near the transition between

<sup>9</sup> Per Table 1, Chapter 10, HDPE Pipeline Design Manual

<sup>10</sup> Buoyant weight of backfill material assumed to be 30 lbs. per cubic ft

buoyant force of an air-filled pipeline, so it is not practical to move the pipe into position with weights attached. Barge attachment may also be used for the Part 2 Pipeline, since the pipeline material is already fused and either floating on the lake or lying on exposed lake bed. Pulling this pipeline to shore to attach the collars may not be practical. In both cases, the method of attaching the concrete collars will largely be left to the discretion of the contractor.

## Connection to Tecolote Tunnel

The existing temporary pipeline discharges water to the Tecolote Tunnel Inlet Tower via a steel box that attaches to the tower (Figures 9 and 10). This box is fastened to the concrete tower using the guide rails that were installed for raising and lowering fish screens. While has been satisfactory as a temporary solution, it is a poor long-term solution, for several reasons:

- The bolts that attach the rails could be overstressed if the differential between the inside and outside water levels is too great. The condition of these 58-year-old bolts is unknown, but deterioration is expected.
- Although the box is painted, its coating system was not designed for a long-term installation
- The connection between the box and the tower is not water-tight, so water leaks out and is lost to evaporation
- The integrity and reliability of the tower itself is questionable, due to its advanced age in a corrosive environment. The tower almost certainly does not meet current seismic design standards.

As part of this project, an alternative connection directly to the tunnel will be investigated. As shown in Figure 12, the pipeline would connect to the north tunnel adit, where a structural steel bulkhead was installed. Because the pipeline would be independent of the tower and buried in approximately 10 feet of lake-deposited sediment, it would be far less vulnerable to damage from seismic shaking than the tower.

The feasibility of this alternative will be confirmed during preliminary design.

## Pipeline Appurtenances

As with virtually all water pipelines, various appurtenances will be required to control and operate these pipelines. A preliminary schematic (Figure 11) shows concepts for line valves, standpipes, and air/vacuum valves. To allow for differing lake levels, ball joints will be required at both ends of the riser pipe connecting the barge to the submerged pipeline. Figure 11 shows the pipeline connecting to the tunnel inlet tower using the steel intake box that is already attached to the tower. As discussed above, alternatively, the pipeline would be connected directly to the Tecolote Tunnel.

## Project Phasing

Because the lake level is currently very low, a rare opportunity exists to construct much of these pipelines without the need for barge-mounted equipment. A fast-tracked project schedule is thus a priority. The overall project schedule will be significantly influenced by the financing, permitting, and CEQA/NEPA processes, the durations of which are currently not known. Completion of final design for both pipelines is expected to take about 3 months after authorization.

Following a notice to proceed, and one month for mobilization, construction of the Part 1 Pipeline would be expected to take 100 days, with the new pipeline placed parallel to the existing pipeline. A short outage would be required to disconnect the existing pipeline and place the new pipeline into service. The existing pipeline would then be relocated and installed as the Part 2 Pipeline. This pipeline would be expected to take 80 days. Total construction duration is thus approximately 7 months (6 months after

mobilization. A conceptual schedule is provided below. This schedule is based on a traditional, design-bid-build procurement process, but alternative means of procuring services may be employed, including design-build. A portion of the work may also be implemented through negotiated change orders with COMB's EPF contractor, if there is insufficient time to bid the work.

### Conceptual Project Schedule

Activity	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17
Phase 1 - Prelim Engineering	█	█									
Permit Procurement	█	█	█	█	█						
Phase 2 Final Design		█	█	█	█						
Advertise			█	█	█						
Evaluate Bids & Award				█	█	█					
Mobilize					█	█	█	█	█	█	
Part 1 Pipeline						█	█	█	█	█	
Service Cutover									█	█	
Part 2 Pipeline								█	█	█	█
Demobilize											█
Project Complete											█

### Costs

The recommended budget for this project is as follows:

Part 1 Pipeline Construction	\$3,700,000
Part 2 Pipeline Construction	2,100,000
Engineering / Project Mgmt @ 10%	580,000
Permit Acquisition @ 5%	<u>290,000</u>
<b>Total Budget</b>	<b><u>\$6,670,000</u></b>

This budget is based on the construction cost estimates found on the next page.

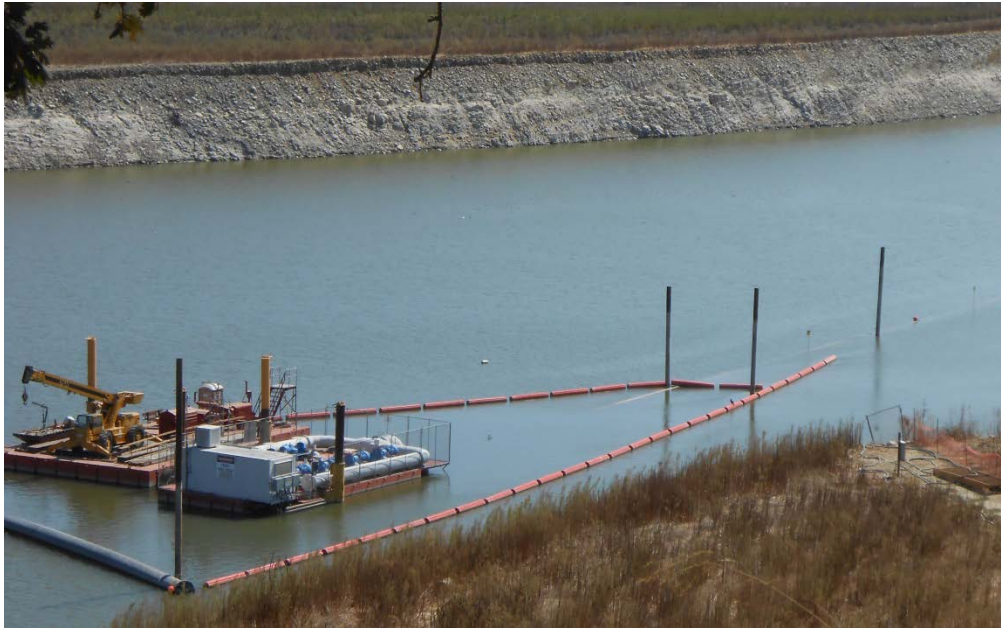
### Part 1 Pipeline Construction Cost Estimate

Item	Description	Quantity	Unit	Unit Cost	Extension
1	EQUIPMENT MOBILATION (BARGE, CRANE, AMPHIOUS EXCAVATOR, ETC)	1	LS	\$ 200,000	\$ 200,000
2	HDPE PIPE, 36-INCH, DR17, DELIVERED, FUSED	7000	FT	\$ 90	\$ 630,000
3	HDPE PIPE, 36-INCH, DR19, DELIVERED, FUSED	3100	FT	\$ 80	\$ 248,000
4	HDPE FITTINGS (5 @ 90-DEG, 2 @ 45-DEG)	1	LS	\$ 4,850	\$ 4,850
5	BALL JOINTS	2	EA	\$ 35,000	\$ 70,000
6	APPURTENANCES	1	LS	\$ 50,000	\$ 50,000
7	EXCAVATION AND BACKFILL	5156	CY	\$ 35	\$ 180,444
8	CONCRETE COLLARS	278	EA	\$ 5,000	\$ 1,390,000
9	TOWER CONNECTION	1	LS	\$ 200,000	\$ 200,000
	<i>SUBTOTAL (rounded)</i>				\$ 2,970,000
	<i>OH&amp;P</i>	10%			\$ 297,000
	<i>CONTINGENCY</i>	15%			\$ 445,500
	<b>TOTAL CONSTRUCTION</b>				<b>\$ 3,700,000</b>

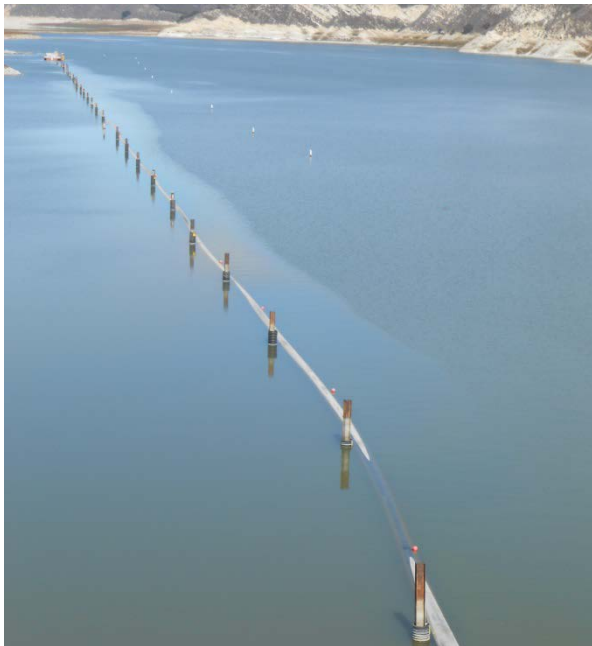
### Part 2 Pipeline Construction Cost Estimate

Item	Description	Quantity	Unit	Unit Cost	Extension
1	EQUIPMENT MOBILATION (MOST COSTS INCLUDED IN EPF PIPELINE)	1	LS	\$ 50,000	\$ 50,000
2	HDPE PIPE, 36-INCH, DR25, SURPLUS	1	LS	\$ 462,000	\$ 462,000
3	HDPE FITTINGS (5 @ 90-DEG, 2 @ 45-DEG)	1	LS	\$ 4,850	\$ 4,850
4	MOTOR-OPERATED VALVES	2	EA	\$ 100,000	\$ 200,000
5	STANDPIPE	1	EA	\$ 100,000	\$ 100,000
6	EXCAVATION AND BACKFILL	8333	CY	\$ 35	\$ 291,667
7	CONCRETE COLLARS	105	EA	\$ 5,250	\$ 551,250
	<i>SUBTOTAL (rounded)</i>				\$ 1,660,000
	<i>OH&amp;P</i>	10%			\$ 166,000
	<i>CONTINGENCY</i>	15%			\$ 249,000
	<b>TOTAL CONSTRUCTION</b>				<b>\$ 2,100,000</b>

## Appendix A – Figures



**Figure 1. EPF Pumping Barge at Site 2.** On the left side of the pumping barge is a barge-mounted maintenance crane. The mooring piles for the pipeline are also shown.



**Figure 2. Mooring of existing pipeline using steel piles.** Piles are spaced at 100 feet. Photo on left was taken when the barge was at Site 1 and the lake was approximately 20 percent full. Photo on right shows the same view in September 2016, with the lake at 7 percent full and the barge moved down the lake to Site 2.

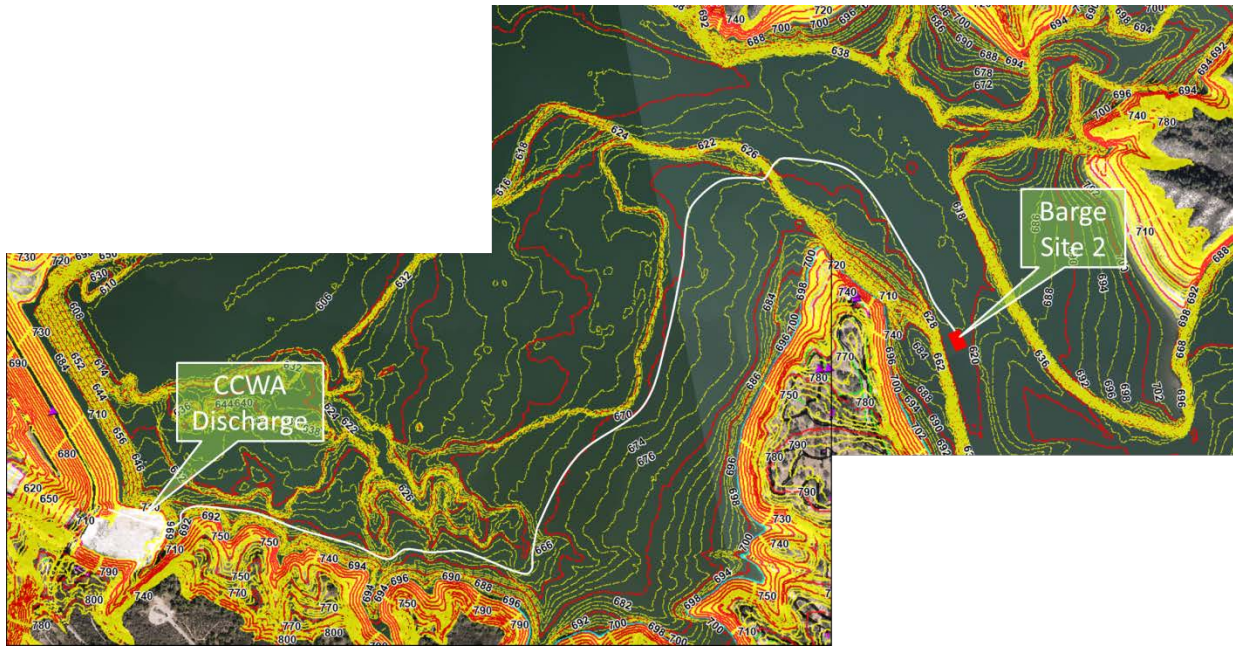




**Figure 3. Portion of proposed alignment for Part 2 Pipeline.** Much of this pipeline could be currently constructed on relatively dry lake bed.



**Figure 4. Drawing showing existing Pipeline, EPF Site 1 and PFSite 2.** The final location of Site 2 is several hundred feet north of the location shown here, near the tip of the peninsula.



**Figure 5. Preliminary alignment of Part 2 Pipeline.**



**Figure 6. Example of Amphibious Construction Equipment.** Equipment like this is needed where water is too shallow for barges and land is too soft for conventional tracked equipment.



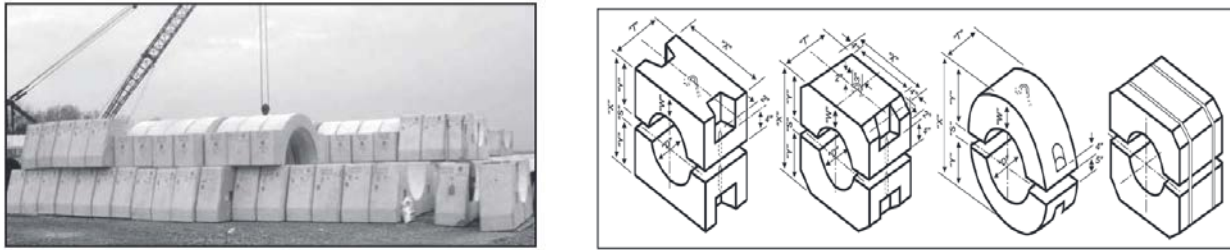


Figure 7. Examples of Concrete Collars Used to Ballast HDPE Pipes

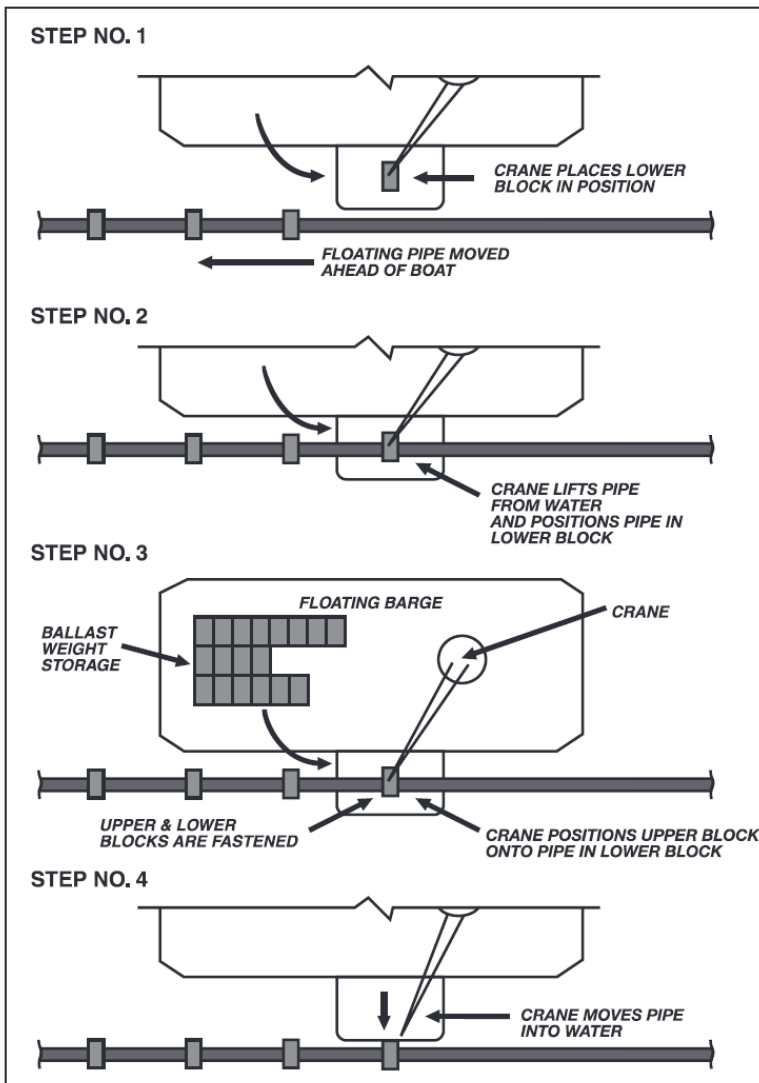


Figure 8. Illustration of Barge Attachment of Concrete Collars

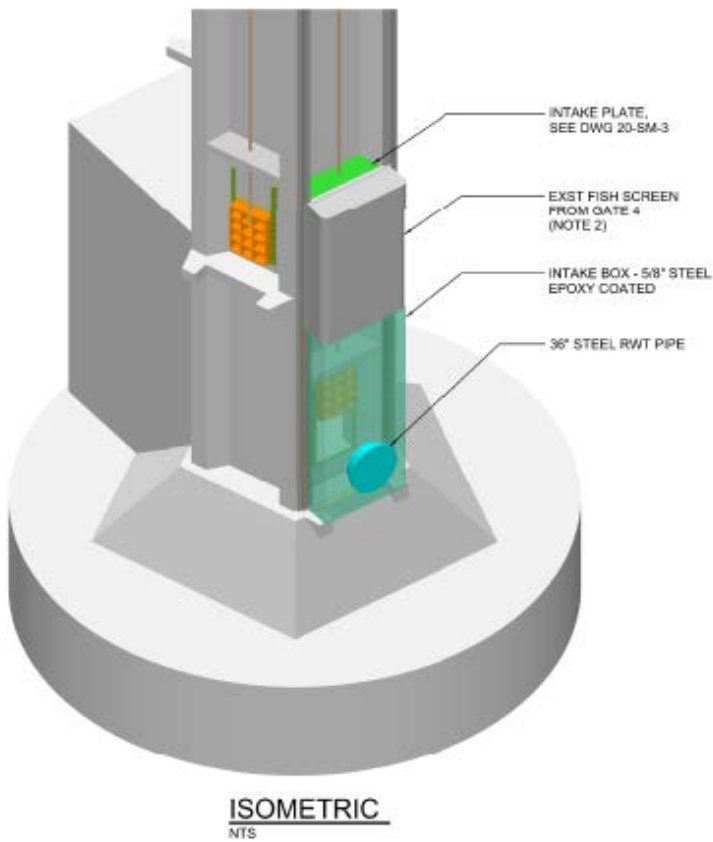


Figure 9. Illustration of Existing Temporary Tower Inlet Box

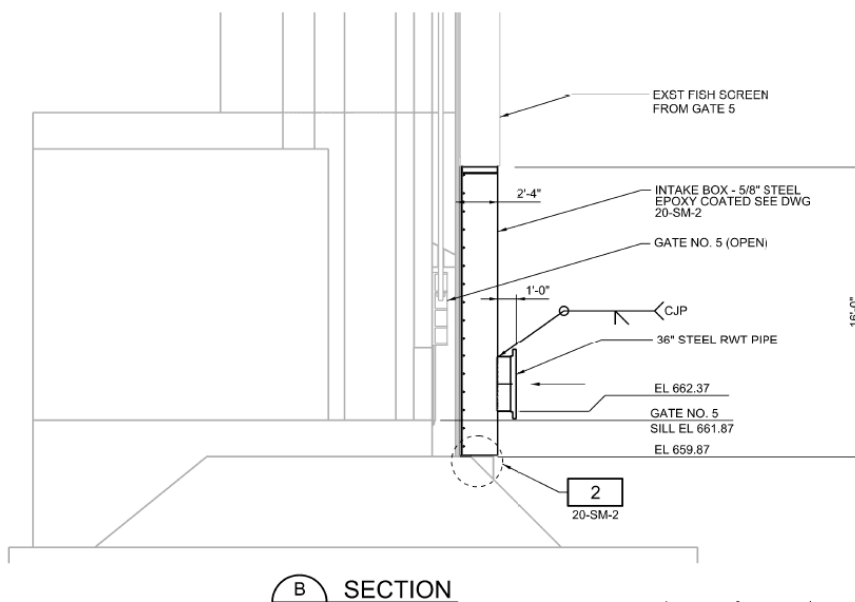


Figure 10. Construction Detail for Existing Temporary Tower Inlet Box

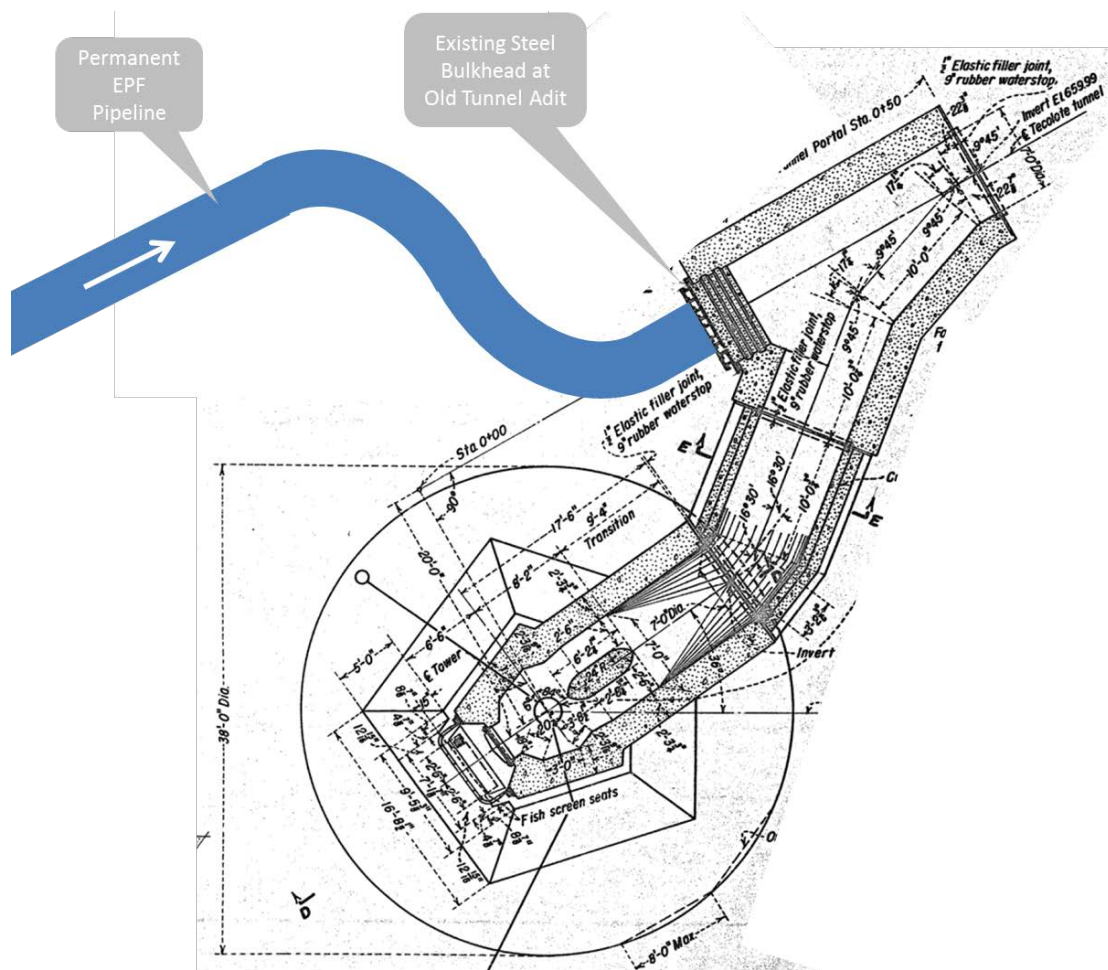


Figure 11. Proposed Pipeline Connection to Tunnel Adit

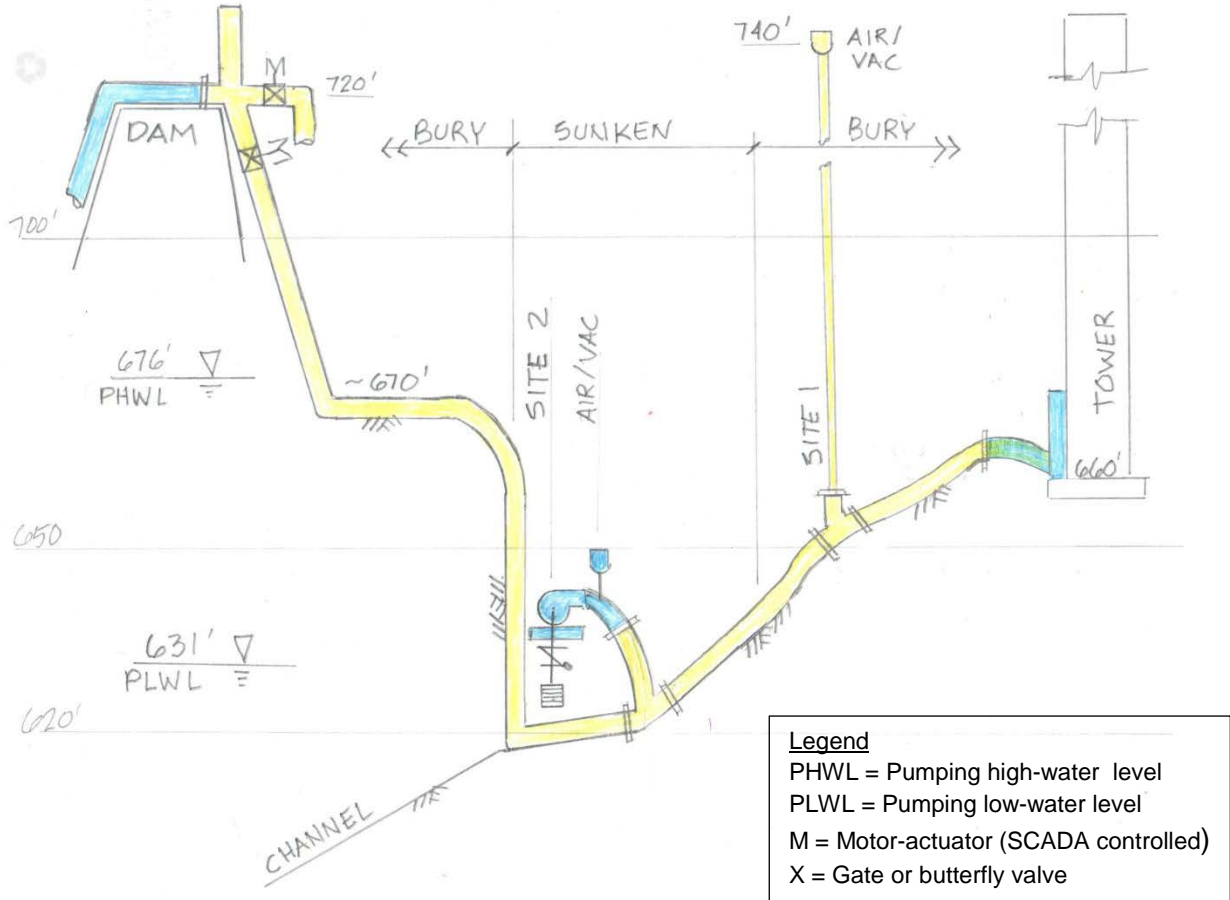


Figure 12. Pipeline Schematic



September 19, 2016

HDR  
701 East Santa Clara Street, Suite 36  
Ventura, CA 93001-5972

**Attention:** Mr. Dan Ellison, P.E., S.E.  
Senior Professional Associate

**Subject:** Proposal to Perform Pressure Surge Analysis for the  
Lake Cachuma Emergency Pump Station

Dear Mr. Ellison:

Northwest Hydraulic Consultants (NHC) is pleased to submit the following scope of work and budget to perform a pressure surge analysis of the Lake Cachuma Emergency Pump Station (LCEPS) for the Cachuma Operation and Maintenance Board (COMB). This proposal includes our understanding of the facilities associated with the project, our technical approach, and the assumptions we used to develop the scope of work and budget.

## Project Understanding

When reservoir levels are low, the LCEPS conveys raw water from Lake Cachuma to the North Portal Intake Tower (Base El. 660 ft) and into the Tecolote Tunnel, which connects the lake to South Coast pipelines in Santa Barbara County, via an approximately 10,100 ft (1.9 mile) long, 36-inch diameter fusion welded high density polyethylene (HDPE) pipeline (DR 26). Although originally designed as a floating pipeline, COMB plans to anchor the pipeline to the lake bottom while still allowing the pump station to float.

The floating pump station is equipped with seven (7) Grundfos split case (horizontal shaft) centrifugal pumps that are operated on variable frequency drives. Four (4) pumps are installed on one barge and connect to a 30-inch header. A second barge comprises three (3) pumps, which are connected to a second 30-inch header. The 30-inch header pipes join at a 36-inch tee that is installed on a third barge and a fourth barge is installed at the other end of the pump station for storage. All four barges are fastened together and comprise the floating pump station. A 2-inch diameter manual air release valve is installed on the crown of the 36-inch diameter tee. Two 36-inch mitered 45-degree bends followed by at least 15 ft of 36-inch steel pipe connect the pump station to the 36-inch HDPE pipeline.

For the surge analysis, the design flow rate for the barge pump station will be 30 MGD and the high and low lake water surface elevations that define the range of operation for the pump station will be 675 ft and 631 ft, respectively. The high and low water surface elevations in the North Portal Intake Tower are 664 ft and 670 ft, respectively.

Based on the supplied performance curve, each pump has a rated flow of 5000 gpm at 61.11 ft of TDH (80.35 percent efficiency) when operating at full speed (1780 rpm). A pump receives water from the lake through a fish screen. A 16-inch diameter Pratt double disc check valve is installed between the fish screen and





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the pump to help keep the pump primed. The check valve connects to the suction side of the pump via a vertical segment of 16-inch pipe, followed by a mitered 90-degree bend and then a 16- to 12-inch diameter flexible reducer. On the discharge side of each pump there is a short segment of 10-inch diameter pipe and then a 10-inch diameter Pratt rubber seated butterfly valve just before the pump discharge line connects to one of the pump station's 30-inch diameter headers. All of the piping at the barge pump station is Schedule 10 steel pipe with a minimum wall thickness of 0.25 inches. An 8-inch diameter combination air relief and vacuum valve (Valmatic VMC-108S/38) is installed at the upstream end of each 30-inch diameter header.

Of primary interest will be the pressure transients created by the operation (i.e., pump power failure and start up) of the pumps at the LCEPS and their effect on the HDPE pipeline when it is anchored to the lake bottom.

- Pump power failure is likely to cause the worst-case pressure transients at the pump station and in the pipeline. A loss of power to the pumps will create a pressure drop wave that will propagate out from the LCEPS into the pipeline toward the intake tower. If the downsurge wave drops the pressure sufficiently low in the pipeline to create vapor pressure, vapor cavities will form in the pipeline and fluid column separation will occur. Re-pressurization of the pipeline will collapse the vapor cavities and could create very high magnitude positive pressure spikes that could damage the pipeline and piping at the pump station. The pipeline may also be damaged by large magnitude negative pressures resulting from the initial pressure drop wave and or large magnitude high pressure created by a reflected water hammer wave. The combination air valves at the pump station will likely open following a pump power failure event and may slam closed upon re-pressurization of the pipeline and create additional water hammer pressure waves that could damage the piping and the valve floats.
- If the flow into the pipeline is accelerated too quickly upon pump startup, adverse pressure transients could be created that may over-pressurize the pipeline and piping at the pump station.

Introduction of air to the pipeline will increase buoyancy and make the pipeline difficult to anchor to the lake bottom. Therefore, if surge control measures are required for the pipeline, it is desired that the surge protection measures be selected to not introduce air to the pipeline. For example, check valves that introduce lake water (in place of air) to the pipeline will be considered should the results of the analysis show that the pipeline is in need of protection against adverse negative pressures or vapor pressure following pump power failure. The analysis will also be performed with the existing 8-inch diameter combination air valves at the pump station closed off to determine whether or not the pipeline can withstand waterhammer created by pump power failure without these combination air valves in place.

The objectives of the hydraulic transient analysis will be 1) to predict the maximum and minimum HGL envelope for the pipeline (when it is anchored to the lake bottom) following pump power failure and pump startup, 2) to recommend surge control (that does not introduce air to the pipeline), if necessary, to protect the pipeline (when it is anchored to the lake bottom) from adverse pressure transients created by the floating pump station, and 3) to develop recommendations for safely starting the pumps (when the pipeline is anchored to the lake bottom).

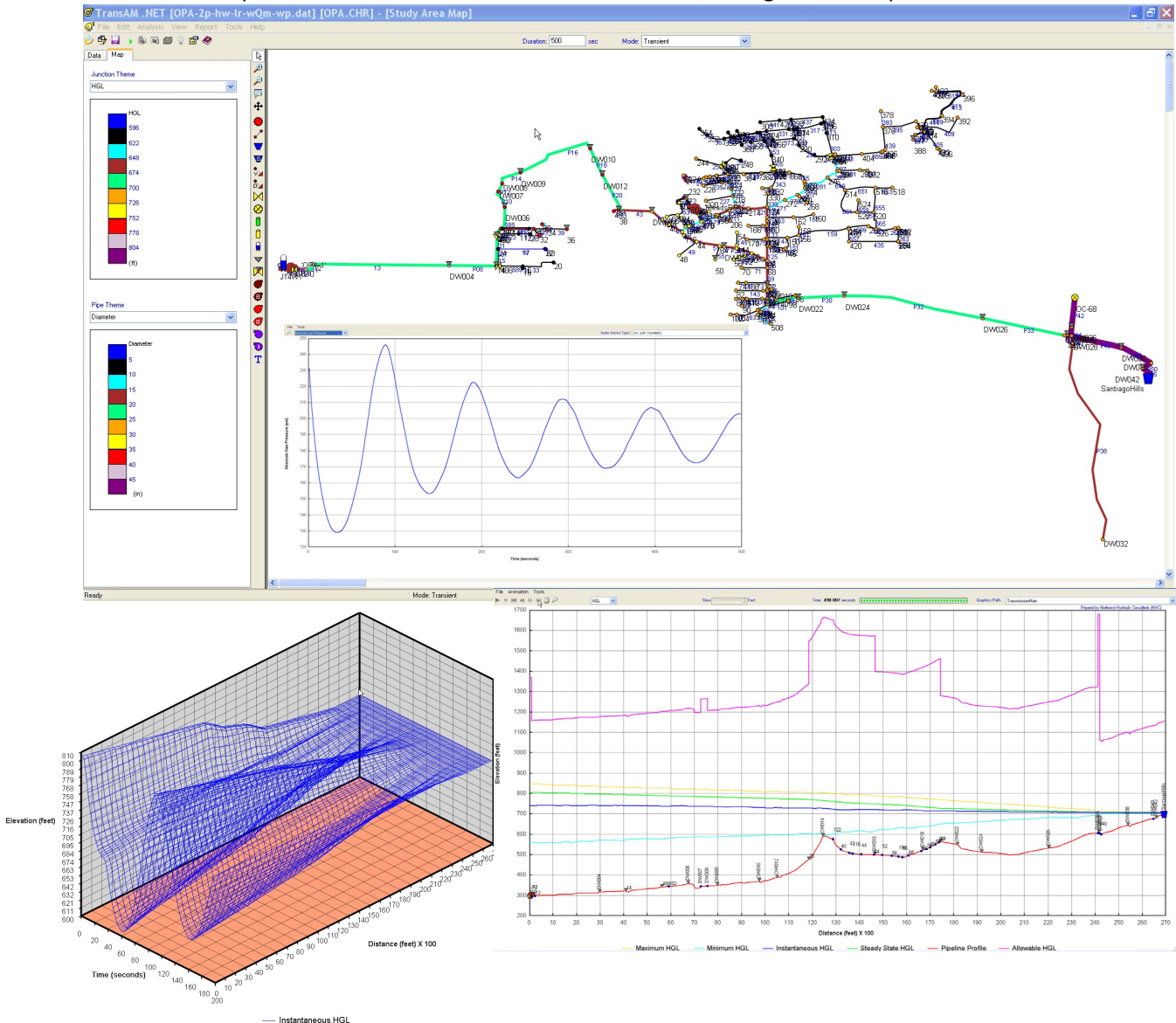


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Note that a pressure surge analysis of the operation of the barge pump station through the floating pipeline is beyond the scope of this proposal.

## Technical Approach

NHC proposes to construct a hydraulic transient analysis model of the system using the TransAM hydraulic transient analysis software. This Method of Characteristics (MOC) based computer model has been used by NHC to perform hydraulic transient analyses of pipeline systems with diameters as large as 22 ft and flow rates up to 1485 cfs. NHC has used TransAM to perform hydraulic transient analyses for the United States Bureau of Reclamation, Metropolitan Water District of Southern California, Calleguas Municipal Water District,



TransAM Transient Analysis Software



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Irvine Ranch Water District, San Diego County Water Authority, NASA/Jet Propulsion Laboratory, Los Angeles Department of Water and Power, the Southern Nevada Water Authority, Brushy Creek Regional Utility Authority, Eastern Municipal Water District, Spokane County, King County, City of San Diego, City of Fresno, City of Stockton, City of Lodi, City of Dallas, City of Elk Grove, Hampton Roads Sanitation District (Virginia), Town of Cary (North Carolina) and many other water and wastewater agencies. TransAM has been extensively verified by comparison of computed transient pressures and flows with those measured in the field (e.g., Axworthy and Chabot, 2004<sup>1</sup>) and laboratory (e.g., Axworthy, et al., 2000<sup>2</sup>), and predicted by codes developed by others. TransAM is one of the first transient analysis software products to fully exploit the parallel processing capabilities of the multi-core processor and has been used to analyze hundreds of pipelines and distribution systems. The resulting fast computer execution time makes this transient analysis software ideal for performing analyses of large and complex pipeline systems.

## Scope of Work

This scope of work was developed assuming that a face-to-face meeting would not be required and that the pressure surge analysis would be performed once with the information supplied by HDR. It was also assumed that the floating pump station would be moored at the location shown in the supplied 2016 alignment and elevation drawings for the pipeline. Each task necessary to complete the pressure surge analysis work for the project is discussed below.

### **Task 1 – Surge Analysis**

- 1.1 Review the existing documentation associated with the project (e.g., alignment and elevation drawings, etc.) for the pipeline and plan and elevation drawings for the floating pump station. Extract lengths, diameters, elevations, material type and pressure class from alignment/plan and elevation drawings for the pipeline (when anchored to the lake bottom) and floating pump station. Gather additional data from manufacturing literature associated with the pumps and valves, etc. Determine polar moment of inertia of the pumps and motors if not available from the manufacturer. Calculate friction factors and acoustic wavespeed for the pipeline. Develop pump characteristics for the hydraulic transient analysis computer model using the manufacturer's performance curve for the pumps that was supplied by HDR. Setup a hydraulic transient analysis computer model of the floating pump station (when moored in the location shown on the 2016 drawings) and pipeline (when anchored to the lake bottom).
- 1.2 Define the critical operating scenarios for the pipeline and floating pump station. Establish hydraulic grade line (HGL) elevations for the pipeline under steady state operation and static conditions at the floating pump station for operation of the pumps.
- 1.3 NHC will use the above initial HGL elevations to perform pressure surge analysis simulations for the operation of the pumps through the pipeline (when anchored to the lake bottom and with the

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<sup>1</sup> Axworthy, D.H. and Chabot, N. (2004). "Pressure transients in a Canadian sewage force main." Canadian Journal of Civil Engineering, NRC, Canada, 31, 1039-1050.

<sup>2</sup> Axworthy, D.H., Ghidaoui, M.S., and McInnis, D.A. (2000). "Extended thermodynamics derivation of energy dissipation in unsteady pipe flow." Journal of Hydraulic Engineering, ASCE, 126(4), 276-287.

combination air valves at the pump station closed off). Simulations will include pump power failure and pump startup for the critical operating scenarios defined in Task 1.2.

- 1.4 Evaluate the results (i.e., predicted maximum and minimum pressures) of the Task 1.3 simulations and determine whether or not surge control measures are required to protect the floating pump station and pipeline (when anchored to the lake bottom) from adverse pressure transients (e.g., over-pressurization, vapor cavity formation, and large magnitude negative pressures) created by the loss of power and startup of the pumps at the floating pump station (when moored in the location shown on the 2016 drawings).
- 1.5 If surge protection is deemed necessary in Task 1.4, NHC will determine surge control alternatives [e.g., diameter and location of check valves, diameter and set point pressure of surge/pressure relief valves, size of flywheel (if practical), volume and dimensions of pressurized/non-pressurized surge tank (if practical), etc.] for the system. The surge control measures will be designed to ensure that the maximum pressures do not exceed the maximum allowable pressures for the pipeline and to eliminate the possibility of vapor cavity formation and large magnitude negative pressures in the pipeline following pump power failure and pump startup. The results of the pressure surge analysis with the recommended surge protection improvements in place and recommendations for safely starting the pumps will be provided.

### ***Task 2 – Reporting***

- 2.1 A technical memo will be prepared that will include (1) a description of the pressure surge analysis modeling approach, (2) a description of the physical facilities, including a schematic showing the hydraulic transient analysis model, (3) component data and assumptions used for the analysis, (4) the results of the pressure surge analyses, including graphical plots of the maximum and minimum HGL envelopes and maximum allowable pressure along the pipeline, and plots of pressure head at the floating pump station and at significant locations on the pipeline (when it is anchored to the lake bottom), etc., and (5) the recommended surge protection measures for the system. Movies of pertinent pressure surge analysis simulations may be included at no additional cost to help illustrate the results of the analysis and effectiveness of the surge control recommendations.
- 2.2 Quality Assurance/Quality Control review. Following quality assurance review, NHC will provide the first draft of the technical memo in portable document format (i.e., PDF) to HDR.
- 2.3 Upon receipt of a consolidated set of comments from HDR and the COMB, NHC will address the comments and will prepare a second draft technical memo in portable document format for HDR and COMB.
- 2.4 Upon receipt of final comments from HDR and the COMB, NHC will address the comments and prepare two (2) bound copies of the final technical memo including CD-ROMs with movies and an electronic version (i.e., PDF) of the final technical memo.

### ***Task 3 – Administration***

- 3.1 Project management duties and preparation of monthly invoices.



Mr. Dan Ellison, HDR  
September 19, 2016  
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## Budget, Schedule and Data Requirements

Table 1 provides our cost proposal for completing the tasks described above. NHC's fee schedule is also enclosed. We will submit monthly invoices for work conducted in the previous month. The draft TM will be completed within about 6 weeks of receiving an executed task order (per the HDR-NHC Master Subconsultant Agreement for Professional Services dated February 9, 2012), notice to proceed, and the requested data. The final technical memo will be provided within one week of receiving a consolidated set of comments on the draft technical memo from HDR and the COMB. A list of data required to perform the pressure surge analysis and several questions follows:

1. What is the horsepower of the motors (submittal sheets show both 100 hp and 125 hp)?
2. Is the HDPE pipeline PE3408 or PE4710?
3. Please provide the inside diameter of the 36-inch HDPE pipeline.
4. Please provide the material type and thickness for the lining on the steel piping at the pump station.
5. If available, please provide the polar moment of inertia ( $WR^2$ ) for the pumps and motors.
6. The number of duty, standby and spare pumps at the pump station.
7. The maximum number of duty, standby and/or spare pumps that can operate simultaneously at the pump station.
8. Are the butterfly valves on the discharge side of the pumps manually operated?
9. Are the butterfly valves on the discharge side of the pumps opened to start up the pumps and closed to shut down the pumps?
10. What is the approximate elevation difference between the centerline of the pumps and the lake water level? Looks to be about 6.8 ft on one of the drawings. Please confirm that this is correct and suitable for use in the surge analysis for the range of lake water levels provided.
11. Please define the elevation profile of the 36-inch pipeline from the pump station to the first point of anchorage on the bottom of the lake.

## Closure

The Principal-in-Charge and Project Manager will be available immediately after selection to complete project management tasks necessary to start the project. NHC will commit the key individuals to be available to begin work with a notice to proceed from HDR and will also commit these individuals to the level of involvement necessary to maintain the project schedule.





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If you have any questions or need further information, please do not hesitate to contact me at (626) 440-0080 or by email at [dAxworthy@nhcweb.com](mailto:dAxworthy@nhcweb.com). We look forward to working with HDR on this interesting project.

Yours truly,  
Northwest Hydraulic Consultants Inc.

A handwritten signature in blue ink that reads "David H. Axworthy". The signature is written in a cursive style with a large initial 'D' and a stylized 'A'.

David H. Axworthy, Ph.D., P.E.  
Principal

Sub-Task Number	Key Task Descriptions	nhc Hours by Classification					nhc Labor Cost	nhc Direct Cost	Subtotal
		pic	pm	se	je	ad			
1.1	Data Gathering & Transient Model Setup		2	8	16		\$3,230	\$50	\$3,280
1.2	Steady State Simulations		1	3	1		\$789		\$789
1.3	Pressure Surge Analysis Simulations		4	16	4		\$3,761		\$3,761
1.4	Evaluation of Simulations		4	8			\$2,163		\$2,163
1.5	Surge Protection Recommendations		4	8			\$2,163		\$2,163
2.1	Draft Tech Memo Preparation		4	12	4		\$3,155	\$50	\$3,205
2.2	QA/QC	2					\$475		\$475
2.3	Second Draft Tech Memo Preparation		4	2			\$1,254	\$25	\$1,279
2.4	Final Tech Memo Preparation		2	1		2	\$850	\$200	\$1,050
3.1	Administration	1	2				\$713	\$50	\$763
Task Totals		3	27	58	25	2	\$18,552	\$375	\$18,927

Hourly Rates (2016)	
pic - principal-in-charge (Ed Wallace)	\$237.62
pm - project manager (David Axworthy)	\$237.62
se - senior engineer (Nami Tanaka)	\$151.55
je - junior engineer (Jonathan Frame)	\$96.42
ad - sr. document production specialist (Mary Nissim)	\$111.36

**Table 1 Cost Proposal**

**SCHEDULE OF STANDARD CHARGES**  
(Effective 1 Dec 2015)

<u>LABOR</u>	<u>FEE RATE</u> <u>(\$/hr)</u>
Principal	237.62
Sr. Project Engineer	219.91
Sr. Engineer 1	182.19
Sr. Engineer/Scientist 2	151.55
Engineer 1	133.90
Engineer 2	126.97
Scientist 2	109.75
Jr. Engineer	96.42
GIS Specialist	125.66
Sr. Engineering Technician	127.30
Sr. Laboratory Technician	94.88
GIS Analyst	78.30
Jr Engineering Technician	64.20
Sr. Contract Administrator	165.05
Sr. Document Production Specialist	111.36
Document Production Specialist	75.02
<b>Handling Charges, Fees</b>	
Markup on Subconsultants	10%
Markup on Reimbursables	10%
Markup on Travel/Subsistence	10%
<b>Reproduction</b>	
Photocopies:	
B&W 8½ x 11	\$0.10
B&W 11 x 17	\$0.15
Color 8½ x 11	\$1.00
Color 11 x 17	\$2.00
<b>Plotting</b>	
Plots, bond, 11 x 17	\$2.00
Plots, bond, D size	\$4.00
Plots, oversize (running foot)	\$2.00

Refer to separate schedules for field and laboratory equipment charges.



## FUGRO CONSULTANTS, INC.

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October 11, 2016  
Proposal No. 04.621690138

HDR  
701 East Santa Clara Street, Suite 36  
Ventura, California 93001

Attention: Mr. Dan Ellison

Subject: Proposal for Geotechnical Services, Lake Cachuma Submerged Pipelines Project, Cachuma Operations and Maintenance Board, Santa Barbara County, California

Dear Mr. Ellison:

Fugro is pleased to present this proposal for geotechnical services associated with the Permanent Emergency Pumping Facility (EFP) Pipeline and the new CCWA-Connection pipeline project being planned by the Cachuma Operations and Maintenance Board (COMB). We understand that the project is being proposed to make the temporary EFP permanent. To accomplish that, we understand that a new, larger wall-thickness HDPE pipe is required to connect the current pumping location at Site 2 to the Tecelote Tunnel Inlet Tower and to connect the current pumping location at Site 2 to the existing Central Coast Water Authority (CCWA) pipeline that currently terminates near Bradbury Dam. As proposed, the two pipelines will each have overall alignment lengths of about 10,000 feet and will have reaches in areas of current exposed lake bed soils (on-shore) and areas that are currently below lake level (marine).

On-shore pipeline lengths are 4,640 feet for EFP Site 2-Tunnel Intake Tower pipeline and about 7,500 feet for the CCWA-Connection pipeline. The project team anticipates the on-shore reaches will be constructed using cut and cover construction methods. However, we understand the on-shore pipe anchoring may be used if cut and cover installation is not practical. The marine reaches will be constructed by laying the pipe on the lake bottom and ballasting the pipeline with pre-cast concrete collars. The marine reaches for both pipelines will occur near the current Site 2 pumping location. We understand that both pipelines will be 36 inches in diameter. We have assumed the invert depth for the on-shore reaches would be about 6 feet (i.e. provide about 3 feet of soil cover over the top of pipe).

### **PURPOSE**

On the basis of correspondence with you, we understand that Fugro's services for the project will consist of characterizing the soils in the on-shore pipeline segments for use in evaluating the general soil conditions (lake bed sediments, alluvium, or bedrock) for trenching and construction and providing unit weight data for the sediment or native soil/rock materials. Data from the study may also be needed to provide input to the design of on-shore anchoring systems such as screw anchors, mini piles, or driven elements.

### **SCOPE OF WORK**

The proposed work scope consists of data review, field exploration, laboratory testing, geotechnical evaluation, reporting, and meeting attendance. We anticipate our work will consist of the following tasks.



## **Task 1 - Data Review, Pre-Field Planning, and Coordination**

Fugro will review relevant readily available geologic maps of the Lake Cachuma area and selected historic aerial photographs of this section of the Santa Ynez River prior to the construction of Bradbury Dam. We will also review and compare data from relatively recent topography of the current exposed on-shore segments and pre Bradbury Dam topography provided to us by HDR. *[Note as an optional task, Fugro can digitize the topographic data, incorporate the data into autocad or GIS, and develop contours of sediment thickness.]*

In addition, we will perform a site reconnaissance to observe the ground conditions in the on-shore reaches, evaluate site access the ability for the ground to support foot traffic and/or exploration equipment, and locate and mark proposed geologic exploration sites. Although it is unlikely existing utilities exist in the work areas, we will contact Underground Service Alert and COMB staff for utility clearance prior to performing any digging or drilling work for the project. Fugro will not be responsible for mislocated or unlocated utilities. We have assumed that no encroachment permits or drilling permits from Santa Barbara County Environmental Health will be required for the geologic exploration work.

## **Task 2 - Subsurface Exploration**

We propose a field exploration program to evaluate the subsurface conditions along the on-shore segment of the Site 2-Tecelote Intake Tower segment and along the CCWA-Connector segment. Because the conditions along the two pipeline alignments are not known and the ground may not be capable of supporting mechanical drilling equipment, we propose an exploration program consisting of hand excavated drill holes or test pits and/or mechanical drilling using light weight track-mounted hollow-stem drilling equipment. For this effort, we propose to provide up to two days of hand auger drilling activity and one day of mechanical track-mounted hollow-stem auger drilling. However, we will work with HDR to adapt the exploration as appropriate for the ground conditions but within the budget parameters assumed in the proposal. In general, for those assumptions, it may be possible to excavate 6 to 10 shallow hand excavated drill holes and 5 to 6 mechanical drill holes.

We will perform the field work in phases with the hand excavation drilling performed as the first phase of work. Hand excavation drilling locations will be determined from the site reconnaissance and through interaction/consultation with HDR. We propose to advance the hand-excavated drill holes to depths of about 10 feet, but the holes will be terminated shallower if we encounter refusal or caving ground conditions *[note that we will attempt to manage caving ground conditions by possibly using small segments of PVC pipe as drill casing or with the use of drilling slurry]*. We will collect soil samples at selected depths using a 2-7/8-inch I.D. modified California ring sampler or a Standard Penetration Test (SPT) sampler, and from drill cuttings. We propose to fill the drill holes with excavated soil materials when completed.

Using observations from our reconnaissance and observations made during the hand auger phase of the exploration program, we will evaluate whether mechanical drilling is possible, and if so work with HDR to finalize the locations of those drill holes. If the mechanical drilling is not possible, we will with utilize the budget established for mechanical drilling to perform additional hand auger excavations or not utilize the fee for that work.

Assuming that mechanical drilling will be feasible at selected locations, we proposed to advance the drill holes to depths of about 10 to 20 feet. However, the drill holes will be terminated at shallower depths if refusal to drilling is encountered. We will collect samples at selected depths using a modified California liner sampler, classify and log the soil conditions encountered, and evaluate the depth to groundwater, if present.





Upon completion, we proposed to fill the drill holes with excavated soils. Excess soils will be dispersed on the ground adjacent to the drill holes.

We note that the scope of our exploration services does not include any environmental assessments for the presence or absence of hazardous/toxic materials in the soil, surface water, groundwater, or atmosphere.

### **Task 3 - Laboratory Testing**

Fugro will perform laboratory testing on selected earth materials sampled in the drill holes to estimate engineering parameters. The actual testing program will be based on the findings from the field exploration; however, the testing program is expected to consist of moisture/density relationships, grain-size, plasticity, and shear strength.

### **Task 4 - Geotechnical Evaluation and Reporting**

Fugro will summarize subsurface soil and groundwater conditions at the exploration locations and provide geologic and geotechnical input to the design of the proposed on-shore pipeline segments and provide preliminary design criteria for possible pipe anchors.

Factual data, including the drill hole logs and geotechnical laboratory data will be presented in a written report that will summarize:

- Soil and groundwater conditions encountered in the drill holes;
- Anticipated excavation conditions and considerations for temporary excavations
- Estimates of total and effective unit weights for bulk, insitu, and compacted materials; and
- Evaluation of pipeline uplift resistance for screw anchors, micro piles, and driven elements (capacity estimates will be made with consideration of the overall explored depth).

We will summarize our findings, input and recommendations in a written report. In addition to the findings and recommendations, the report will provide factual data consisting of logs of the drill holes, results of laboratory tests, and miscellaneous graphics. Unless otherwise directed, we will provide a copy of the report to HDR in Portable Document Format (pdf) via email or a file share system.

### **Optional Task 5 - Meetings**

As an optional task we have provided for the Fugro project manager to attend a kick-off meeting and an additional project design team meeting associated with the work. We have assumed the duration of the meeting will be about 2 hours (including travel time) and be held at COMB's office in Santa Barbara. We are available to attend additional meetings, as needed, as additional services.

### **FEE ESTIMATE AND SCHEDULE**

Fugro proposes to provide the services described in this proposal in accordance with our current fee schedule assuming prevailing wage rates. A copy of our current fee schedule is attached. Fees will be invoiced monthly on a time and material basis and we will not exceed that authorized amount without prior authorization from HDR. Our estimated fees are summarized in Table 1 and remain valid for a period of 90 days.



**Table 1. Fee Estimate**

Description	Estimated Fugro Man-hours	Direct Costs	Estimated Fee
Task 1 - Data Review, Pre-Field Planning, and Coordination	16	\$ 500	\$ 3,000
<i>Optional Topo Digitization and Evaluation</i>	12	1,000	2,750
Task 2 - Subsurface Exploration	44	4,000 (Hand Auger Drilling) 6,000 (Mechanical Drilling)	16,000
Task 3 - Laboratory Testing		3,500	3,500
Task 4 - Geotechnical Evaluation and Reporting	36	--	5,500
<i>Task 5 – Optional Meetings</i>	4	--	750
<b>Totals (excluding optional services):</b>	<b>96</b>	<b>\$14,000</b>	<b>\$ 28,000</b>

**CLOSURE**

We appreciate the opportunity to provide this proposal for geotechnical services on the Cachuma Lake Submerged Pipelines project. Please call if you have any questions regarding this proposal.

Sincerely,  
 FUGRO WEST, INC.

Gregory S. Denlinger, G.E.  
 Principal Engineer

Attachments: 2016 Fee Schedule



**HDR Engineering**  
**COMB - Fee Estimate B - EPF Pipeline - Part 1 Only**  
**Estimated Level of Effort and Fee**

TASK NO.	DESCRIPTION	LEVEL OF EFFORT, HOURS											FEE, DOLLARS			
		PROJ MGR	QC MGR	PROJ ENGR	ASST ENGR	CAD DESIGR	ACCTG MGR	PROJ COOR	TOTAL LABOR	LABOR	SUBS	ODC	TOTAL			
		\$305	\$300	\$135	\$115	\$150	\$155	\$90	\$173							
<b>Task Group 100 - Project Mgmt and Preliminary</b>		Client Billing Rates														
101	Project Initiation	6	4	8			12	4	34	6,330		158	6,488			
102	Field Investigations	16							16	4,880		122	5,002			
102A	Tunnel Adit investigations	16							16	4,880		122	5,002			
103	Agency meetings (3)	12		6					18	4,470		112	4,582			
104	Other meetings (3)	12		6					18	4,470		89	4,559			
105	Misc reports and correspondence	20		20				2	42	8,980		180	9,160			
106	Design memorandum	8	3	8	12	16		2	49	8,380		168	8,548			
<b>Subtotal 1</b>		<b>90</b>	<b>7</b>	<b>48</b>	<b>12</b>	<b>16</b>	<b>12</b>	<b>8</b>	<b>193</b>	<b>42,390</b>	<b>0</b>	<b>951</b>	<b>43,341</b>			
<b>Task Group 200 - Hydraulics and Transient Analysis</b>																
201	Hydraulic analysis cases	6		3					9	2,235		56	2,291			
202	Steady-state hydraulics	2		6					8	1,420		36	1,456			
203	Transient hydraulic analysis	2		2			2		8	1,370	20,820	34	22,224			
<b>Subtotal 2</b>		<b>10</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>25</b>	<b>5,025</b>	<b>20,820</b>	<b>126</b>	<b>25,970</b>			
<b>Task Group 300 - Geotechnical Analysis</b>																
301	Geotech data review, planning, and coord	1		2					3	575	3,300	14	3,889			
302	Subsurface exploration								0	0	14,080	0	14,080			
303	Lab testing								0	0	3,080	0	3,080			
304	Geotech eval and report	2		3			2		7	1,325	5,445	33	6,803			
<b>Subtotal 3</b>		<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>1,900</b>	<b>25,905</b>	<b>48</b>	<b>27,853</b>			
<b>Task Group 400 - Pipeline Engineering</b>																
401	Drawings (29)	23		116	118	118			375	54,006		1,350	55,356			
402	Specs	12		24	12			8	56	9,000		225	9,225			
403	Cost Estimate	4		12	8				24	3,760		94	3,854			
404	Submittals (75 & 100%)	6		8		8			30	4,830		121	4,951			
405	QC Review	4	12					8	24	5,540		139	5,679			
<b>Subtotal 4</b>		<b>49</b>	<b>12</b>	<b>160</b>	<b>138</b>	<b>126</b>	<b>0</b>	<b>24</b>	<b>509</b>	<b>77,136</b>	<b>0</b>	<b>1,928</b>	<b>79,064</b>			
<b>Task Group 500 - Bid-Phase Services</b>																
501	Advertisement	2		3				2	7	1,195		30	1,225			
502	Prebid meeting	6		8					14	2,910		73	2,983			
503	Addenda (2)	8		8				2	18	3,700		93	3,793			
504	Eval of Bids / Recommendation	3		4	4			2	13	2,095		52	2,147			
<b>Subtotal 5</b>		<b>19</b>	<b>0</b>	<b>23</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>52</b>	<b>9,900</b>	<b>0</b>	<b>248</b>	<b>10,148</b>			
<b>TOTAL, hours</b>		<b>171</b>	<b>19</b>	<b>247</b>	<b>154</b>	<b>142</b>	<b>16</b>	<b>40</b>	<b>789</b>	<b>136,351</b>	<b>46,725</b>	<b>3,300</b>	<b>186,375</b>			
<b>TOTAL, dollars</b>													<b>186,375</b>			



Mission Statement:

*“To provide a reliable source of water to our member agencies in an efficient and cost effective manner for the betterment of life in our communities.”*

November 28, 2016

**General Manager Report**

The following summary provides the Board with information and an overview of progress on current COMB activities.

*Santa Ynez River Flood Forecasting Model Workshop/Training Exercise*

The Santa Barbara County Flood Control District hosted an informational workshop on Thursday, November 3<sup>rd</sup> which included participants from the Santa Barbara County Water Agency, U. S. Bureau of Reclamation, the County Parks Department and Cachuma Operation and Maintenance Board. The purpose of the workshop was to introduce current participants, identify roles and responsibilities that would take place when Cachuma Lake Reservoir operations, including releases, are occurring. Complex hydraulic modeling combined with complicated release requirements governed by a number of downstream water rights and regulatory permitting make it essential that all concerned parties are able to respond when significant watershed runoff occurs. Reservoir operations are ultimately the responsibility of the Bureau.

The County Flood Control will initiate a Santa Ynez River Model run for every storm anticipated to trigger flow with close communications directly to Reclamation. Exchange of model data information and Bradbury Dam operations will occur hourly during a storm event. With consideration of the pumping barge operations, close monitoring and advanced forewarning of a rising reservoir elevation will be provided to COMB from the County modeling system, although operations of the reservoir remain with Reclamation. Complex rules and requirements dictate release discharges, along with the objective of emerging from the winter season with as full a reservoir as possible.

*CCWA Steering Committee Meeting*

A second steering committee meeting was held on November 14<sup>th</sup> hosted by CCWA and included attendance by representatives from the County Water Agency, the Bureau of Reclamation, SYRWC Parent District, the South Coast Water Agencies, HDR Engineering, CCWA and COMB. The purpose of this second meeting was to continue the discussion on the project to submerge secured pipelines in the lake connecting the Intake Tower to the Emergency Pumping Facility (EPF) and continuing the pipeline project to connect to the State Water bypass pipe near the dam. An analysis on costs related to a temporary versus permanent installation of the pipeline section between the Emergency Pumping Facility and the State Water bypass pipe at the dam was presented by HDR.

In addition, the consensus was that COMB should take the lead in managing the entire project since the conceptual design had been discussed with the COMB Member Agency General Managers and technical staff and preliminary tasks were under development through the Project Engineer for the EPF. The environmental process is to be conducted through COMB staff with outreach to Reclamation. A project description has been developed by HDR and presented to Reclamation for discretionary drought funding consideration. The steering committee will meet over the next several weeks to advance the discussion on approach and alternatives for the project(s).



Financial

- Proposition 84 IRWMP Grant Funding

The remaining Proposition 84 IRWMP grant funding retention for the Emergency Pumping Facility Project was received by COMB through the County and subsequently distributed to Goleta Water District and the City of Santa Barbara for reimbursement of costs according to previous Board authorized allocations. The withheld retention totaled \$51,892.10 and was distributed 53% and 47% respectively. This withheld retention concludes the reimbursements available from Proposition 84 IRWMP grant funds.

- Fiscal Year 2015-16 Financial Audit

The Fiscal Year 2015-16 financial audit will be presented by our auditors, Bartlett Pringle Wolf, LLP, at the Administrative Committee meeting which is slated to be scheduled during the first week in December. Unexpended Funds from fiscal year 2015-16 have been identified and will be presented to the Committee for review and consideration. The financial audit will be presented to the Board of Directors at the regular December Board meeting.

Operations Division Activities

- Drought Emergency Pumping Facility Project (EPFP)

The EPFP is currently operating in approximately 31' of lake depth with average flows of 12 mgd for the month of November and two to three pumps performing at approximately 90% capacity. As of November 21<sup>st</sup>, lake storage was 14,455 AF with a corresponding elevation of 647.04'. The pumping system continues to perform and operate as originally designed.

See Attachment (A) for Emergency Pumping Facility Project expenditure detail.

Fisheries Division Activities

- Reporting

Fisheries Division staff submitted the Long Pool Fish Rescue/Removal report to Reclamation on November 17<sup>th</sup> detailing activities performed during the two day seining effort that occurred within the Long Pool in late October. Staff also reported findings to Reclamation regarding fish rescues within Lower Hilton Creek during the beginning of the WR 89-18 Release (HC Fish Rescue/Relocation Prior to WR 89-18), and fish rescues within the LSYR mainstem at the completion of the WR 89-18 Release (Post WR 89-18 Activities Report). The 2016 WR 89-18 Release Monitoring Report has been completed and a draft version has been submitted to Reclamation.

- Hilton Creek

On November 18<sup>th</sup>, Fisheries Division staff assisted Reclamation in monitoring flows to Hilton Creek during installation of a second pump in the stilling basin. With the Hilton Creek water tanks full, Reclamation turned off the primary pump while releasing water from the tanks. Flow rates and water quality conditions were carefully monitored by staff to ensure no interruption of flow to the creek. Once the second pump was installed, a series of flow tests were conducted and the water tanks were transitioned off once it was determined operations from the pumps were returned to the original flow rate.

- Equipment

The Fisheries Division staff will be removing trapping equipment from the LSYR mainstem which had been installed for WR 89-18 release monitoring. Both trapping locations (downstream of the Stilling Basin and the tail-out of the Long Pool) are currently dry. The equipment will be removed and readied for normal seasonal operations. In addition, water quality instrumentation will be removed within the LSYR mainstem and tributaries prior to the storm season.

- Surveys

Annual beaver dam surveys will begin in December within the LSYR mainstem and tributaries. Staff will be walking the entire mainstem (where access is allowed) and within the El Jaro/Salsipuedes drainage. Despite the ongoing drought, beaver dams are still present throughout most of the historic beaver monitoring locations.

- Oak Tree Inventory

The annual oak tree inventory will begin in December, verifying the status and success rate of the trees planted since the beginning of the program. Annual surveys are conducted during the late fall and early winter to best document oak tree survival after the dry season.

- Personnel

The Fisheries Division is soliciting 1-2 seasonal positions through the Environmental Science and Biology Departments of U.C.S.B. Applications are due on December 8<sup>th</sup> with interviews expected to be completed by the end of the calendar year. New hires will be trained at the Fillmore Fish Hatchery prior to the start of the migrant trapping season.

Respectfully Submitted,

*Janet Gingras*

General Manager

# EMERGENCY PUMPING FACILITY PROJECT FY 2016/2017

Attachment A

AS OF: 10/31/2016

**FY 16/17 APPROVED BUDGET**

Emergency Pumping Facility Project

ACCT #6120

**\$ 1,846,250.00 Total Budget Approved FY 16/17**

FY 16/17 EMERGENCY PUMPING FACILITY PROJECT				
CONSULTANTS	BUDGET	EXPENDED	BALANCE	Description
Cushman Contracting	1,746,250.00	524,183.90	1,222,066.10	Construction - Phase II/Operations
HDR Engineering	100,000.00	26,177.03	73,822.97	Contract Management tasks
Musick, Peeler & Garrett	-	69.00	(69.00)	Legal costs
American Riviera Bank	-	7,045.23	(7,045.23)	Loan fees/Interest (CVWD/GWD/MWD)
Misc	-	-	-	Materials, supplies, Permits, etc.
<b>Totals</b>	<b>\$ 1,846,250.00</b>	<b>\$ 557,475.16</b>	<b>\$ 1,288,774.84</b>	

FY 15/16 EMERGENCY PUMPING FACILITY PROJECT				
CONSULTANTS	BUDGET	EXPENDED	BALANCE	Description
Cushman Contracting	2,219,250.00	1,954,734.86	264,515.14	Construction - Phase II/Operations
HDR Engineering	100,000.00	80,942.54	19,057.46	Contract Management tasks
PGE (Site 2)	150,000.00	107,880.35	42,119.65	PGE reconducting costs (6 mo's) (Eng)
PGE	240,000.00	-	240,000.00	PGE electrical costs (6 mo's)
Musick, Peeler & Garrett	-	13,662.00	(13,662.00)	Legal costs
American Riviera Bank	-	82,144.46	(82,144.46)	Loan fees/Interest (CVWD/GWD/MWD)
Misc	-	1,518.75	(1,518.75)	Materials, supplies, Permits, etc.
<b>Totals</b>	<b>\$ 2,709,250.00</b>	<b>\$ 2,240,882.96</b>	<b>\$ 468,367.04</b>	

FY 14/15 EMERGENCY PUMPING FACILITY PROJECT				
CONSULTANTS	BUDGET	EXPENDED*	BALANCE	Description
Cushman Contracting	3,818,000.00	3,842,509.46	(24,509.46)	Construction - Phase II/Operations
HDR Engineering	150,000.00	71,618.52	78,381.48	Contract Management tasks
Musick, Peeler & Garrett	-	22,609.00	(22,609.00)	Legal costs
PGE Construction	125,000.00	111,907.00	13,093.00	
PGE Monthly Costs	32,565.00	9,631.02	22,933.98	Electricity charges
PGE Monthly Costs	-	2,500.00	(2,500.00)	Deposit-pump station location #2 eng.
RMC Water & Environment	-	999.81	(999.81)	Prop 84, Grant Application support
Rodney Hunt-Fontaine	-	540.00	(540.00)	Stems/guides-cast/engineering
SY Band of Chumash	-	1,914.30	(1,914.30)	Field monitoring
Bank of Santa Barbara	-	60,120.92	(60,120.92)	Loan fees/Interest (CVWD/GWD/MWD)
Misc	-	1,214.97	(1,214.97)	Materials, supplies, Permits, etc.
<b>Totals</b>	<b>\$ 4,125,565.00</b>	<b>\$ 4,125,565.00</b>	<b>\$ 0.00</b>	

*\*Participating Member Units were assessed Actual Expenditures only.*

FY 13/14 DROUGHT CONTINGENCY-EMERGENCY PUMPING FACILITY PROJECT				
CONSULTANTS	BUDGET	EXPENDED	BALANCE	Description
Environ Strategy	60,000.00	9,191.50	50,808.50	Project Management Services
HDR Engineering	198,748.00	178,645.48	20,102.52	Develop proj def; assist w/RFO-RFP, etc
MPG - Environmental/Legal	50,000.00	80,622.32	(30,622.32)	Environmental / Legal fees
Permits	8,045.25	8,045.25	-	CDFW-\$4,912.25 / RWQCB-\$3,133
PG&E	7,000.00	7,000.00	-	On-going project electrical charges
Smith, Watts & Martinez	20,000.00	20,000.00	-	Lobbyist-drought relief funding
SYRWCD ID#1 (Stetson)	5,000.00	4,025.17	974.83	Work authorized by RW/TR
Miscellaneous	33,206.75	119.72	33,087.03	Non-Contract Incidental charges
Cushman Contracting	350,000.00	350,000.00	-	Phase I designs/mobilization/site prep
HDR Engineering	50,000.00	-	50,000.00	Project Management fees
Contractor	54,000.00	-	54,000.00	Evaluation of NP gates, stems, guides
Rodney Hunt-Fontaine	150,000.00	152,272.44	(2,272.44)	Stems for gates 1-5
PG&E	-	107,370.37	(107,370.37)	Electrical Installation contract
<b>Totals</b>	<b>\$ 986,000.00</b>	<b>\$ 917,292.25</b>	<b>\$ 68,707.75</b>	

COMBINED FY 13/14; 14/15; 15/16 & 16/17 Totals			
	BUDGET	EXPENDED	BALANCE
	<b>\$ 9,667,065.00</b>	<b>\$ 7,841,215.37</b>	<b>\$ 1,825,849.63</b>

## CACHUMA OPERATION AND MAINTENANCE BOARD

### MEMORANDUM

**DATE:** November 28, 2016  
**TO:** Janet Gingras, General Manager  
**FROM:** Dave Stewart, Operations Division Manager  
**RE: MONTHLY OPERATIONS DIVISION REPORT**

#### Operations

The Annual Work Plan sets forth all activities necessary to ensure system reliability. Consistent with the Plan, Operation and Maintenance staff performs routine maintenance on the distribution and storage system. Staff continually endeavors to improve the system, address deficiencies and identify items to be included in the Infrastructure Improvement Program (IIP).

#### Lake Cachuma Operations

The total flow from Lake Cachuma into the Tecolote Tunnel for October was 1432.1 acre-feet, for an average daily flow of 46.19 acre-feet. Lake elevation was 646.68 feet at the beginning of the month and 646.71 feet at the end. Storage change increased 19 acre-feet. CCWA wheeled 1397.1 acre-feet of water to Cachuma Project facilities.

#### Operation and Maintenance Activities

COMB Staff regularly performs the following duties:

- Weekly Safety meetings
- Weekly Rodent Bait (all reservoirs)
- Weekly Toe Drain and Piezometer reads at Ortega (L23)
- Dam inspection and reports (all reservoirs)
- Structure maintenance per Work Plan
- USA Dig Alert – Responded as necessary to alerts
- Pesticide report to County of Santa Barbara
- Operational tests of generators at the North Portal and Lauro Yard
- Inspection of fire extinguishers
- Read anodes and rectifier data
- Water samples taken at Lake Cachuma
- Clean up, inspection, and tool inventory of all vehicles
- Clean up and organize service yard and all buildings

### *Weekly Safety Meetings:*

The primary purpose of the weekly safety meetings is to continue educating staff on safe practices in the field and on-site. In the safety meetings, staff is urged to ask questions regarding the topic being discussed and to think of related examples. The discussion also includes how the incident could have been prevented. Regular safety meetings help staff to constantly be aware of safety practices while on the job. The following topics were reviewed this past month:

- ✓ Falls
- ✓ Emphasis On Confined Space
- ✓ Hard Hat Safety
- ✓ OSHA 10

### COMB Operations Staff specifically took part in the following activities and / or events:

- Representatives from Water Systems Optimization, Inc. (WSO) came to Santa Barbara on October 25<sup>th</sup> and 26<sup>th</sup> and conducted two full days of site visits, thoroughly inspecting all COMB facilities in regards to the Water Efficiency & Metering Analysis Project. Staff has since compiled and transmitted various sets of data requested by WSO to assist them as they work diligently to assess the specific capabilities and needs of the system.
- North Reach Air Vent flushing and maintenance was completed November 10<sup>th</sup>. All were found in good working order.
- North Reach Blow-Off maintenance began November 14<sup>th</sup>.
- Operations Staff attended a two-day Cal OSHA 10 training seminar hosted by ACWA/JPIA.
- Staff was physically on-site at the Brown Property, overseeing the potholing of the South Coast Conduit (SCC) at two (2) locations within the project boundaries.
- XL Boiler & Machinery inspected and certified that all COMB pressure vessels are OSHA compliant.
- An initial meeting with USBR took place November 22<sup>nd</sup> in regards to the 2018 Tecolote Tunnel Inspection walk-through.
- Staff continued oversight of the installation of a new water main located on Hot Springs Road in Montecito.
- Staff continued efforts to remove the pampas grass in and around Laurel Reservoir.
- Operations staff is constantly inspecting all sites, reservoirs, and the South Coast Conduit for items to potentially add to the IIP as future projects.

### Current IIP projects include:

- Air Vacuum Air Release (AVAR) Valve and Blow-off Structure Rehabilitation & Replacement
- Lauro Stop Valve Replacement
- Development of Protocols for System Isolation
- 2016 Watershed Sanitary Survey Update
- North Portal Access Road
- North Portal Jet Flow Control Valve
- Lauro Tunnel Pipe Supports



**PICTURES**

**Lauro Reservoir Pampas Grass Removal**





**Blow-Off Structure: Post-Maintenance**



Air Vent: Post-Maintenance



Parts Replaced during Air Vent Maintenance



# CACHUMA OPERATION & MAINTENANCE BOARD

## BOARD MEMORANDUM

Date:	November 28, 2016
Submitted by:	Tim Robinson
Approved by:	Janet Gingras

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**SUBJECT:** Quiota Creek Crossing 0A Fish Passage Improvement Project, Update

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**SUMMARY:**

***Project Description:*** A 55-foot prefabricated bottomless arched culvert is planned to replace the current concrete low flow crossing at Quiota Creek Crossing 0A. The project will remove a fish passage barrier and open up unimpeded juvenile and adult fish passage for the endangered southern steelhead to NMFS designated critical habitat upstream.

***Project Location:*** The nearest town is Santa Ynez. Quiota Creek Crossing 0A is located off of Hwy 246 via Refugio Road 2 miles south of Hwy 246 on private property. No access is permitted to the public.

***Contractor:*** Peter Lapidus Construction (PLC); the construction contract who won the competitive bid, was issued a Notice to Proceed on 10/13/16 for \$315,970.

***Design Engineer:*** Michael Garelo, HDR Fisheries Design Center.

***Resident Engineer:*** Gino Filippin, Filippin Engineering.

***County Oversight:*** David Vyeniolo, Mark Matson and Dana Eady (North County Planning and Development).

***Project Status and Timetable (as of the Board meeting date):***

Status	Time
Notice to Proceed	10/13/2016
Construction start	10/13/2016
Contract Time (approximate to complete all work)	2 months
Completion Date (estimated)	12/15/2016
Number of construction work days (WD*) (expected)	44
Elapsed Time (WD)	29
Remaining Time (WDs to complete all work)	15
Time Elapsed to Date (%)	66%
*WD: Working Days.	

***Work Performed to Date:*** PLC has completed all clearing and grubbing, removed the concrete low flow crossing and culvert, excavated and poured both foundations, installed the bridge on 11/3/16, installed all the rock slope projection, completely backfilled the arch, and completed all instream work. ConTech fabricated the arch-bridge system at Bethlehem Construction in Wasco, CA, and delivered the product in



good condition on time. The pre-project condition (Figure 1) and current construction efforts (Figures 2-7) are presented as the Exhibits.

**Work Projected for Next Month:** Complete the road work, install the bridge rail, seal/stain/graffiti-proof the bridge, and revegetate the site. All work is expected to be completed by 12/15/16.

**FINANCIAL IMPACT:**

A summary of the estimate and current project expenses is as follows.

	<b>Amount</b>	
<b>Revenues:</b>		
CDFW grant	\$671,635	
COMB services match	\$68,139	
COMB operating expenses match	\$34,130	
Landowner construction match	\$50,000	
	<b>Total:</b>	<b>\$823,904</b>
<b>Estimated Costs:</b>		
COMB operating expenses (match)	\$34,130	
Construction Engineer's Estimate	\$526,010	
ConTech bridge fabrication estimate	\$140,000	
	<b>Total:</b>	<b>\$700,140</b>
<b>Contracted Construction:</b>		
Construction Contract (PLC):	\$315,970	
ConTech Contract Amount:	\$132,038	
Change Order 1 (veg relocation, extra rebar+concrete, extra strapping) (approved):	\$31,446	
Change Order 2?:	\$0	
	<b>Adjusted Construction Contract Amount:</b>	<b>\$479,454</b>
<b>Amount</b>		
<b>Total Expenditure:</b>	<b>FY17</b>	<b>FY16</b>
PLC - Invoice 1:	\$177,760	
PLC - CO-1 (approved):	\$31,446	
ConTech Bridge (deposit):	\$44,013	
ConTech Bridge (final + tat):	\$87,618	
Geotechnical Services (Fugro) - Invoice 1:	\$2,903	
Resident Engineer - AECOM (fabrication) - Invoice 1:	\$4,294	
Resident Engineer - Gino Filippin (site construction) - Invoice 1:	\$3,383	
Materials Testing - Krazan (Bethlehem) - Invoice 1:		
Materials Testing - Fugro (site construction) - Invoice 1:		
COMB Legal Counsel Bid Packet + Contract review:		
Manzanita Nursery (mitigation oak trees) - Invoice 1:		
Tri-Co Reproduction - all invoices:	\$464	
SB County Permit Fees (all):	\$11,957	\$5,297
CDFW 1600 Permit Fee:		\$4,912
CDFW EIR/EIS CEQA Filing Fee:	\$3,070	
	<b>Total Paid:</b>	<b>\$366,907 \$10,210</b>
% Estimated Costs to Total Expenditures:	52.4%	
Estimated Costs minus Total Expenditures:	\$333,233	
Revenues minus Total Expenditures:	\$456,997	



**LEGAL CONCURRENCE:**

COMB legal counsel has reviewed and approved the project.

**ENVIRONMENTAL COMPLIANCE:**

All permits have been obtained and are being followed.

**COMMITTEE STATUS:**

The Fisheries Committee has reviewed and recommended to the Board to approve the project.

**RECOMMENDATION:**

For Board information only.

**LIST OF EXHIBITS:**

Construction photos:



**Figure 1:** Pre-project condition looking upstream.



**Figure 2:** Bridge foundation construction.



**Figure 3:** Completed bridge foundations.





**Figure 4:** Bridge installation.



**Figure 5:** Back filling of the arch.



**Figure 6:** Installation of the rock slope protection.



**Figure 7:** Completed stream work.



# CACHUMA OPERATION & MAINTENANCE BOARD

## BOARD MEMORANDUM

Date:	November 28, 2016
Submitted by:	Tim Robinson
Approved by:	Janet Gingras

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**SUBJECT:** Quiota Creek Crossing 4 Fish Passage Improvement Project, Update

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**SUMMARY:**

**Project Description:** A 54-foot prefabricated bottomless arched culvert with four wing walls is planned to replace the current concrete low flow crossing at Quiota Creek Crossing 4. The project will remove a fish passage barrier and open up unimpeded juvenile and adult fish passage for the endangered southern steelhead to NMFS designated critical habitat upstream. The project will also improve road safety and accessibility for the landowners and the public along S. Refugio Road.

**Project Location:** The nearest town is Santa Ynez. Quiota Creek Crossing 4 is located off of Hwy 246 via Refugio Road 4.5 miles south of Hwy 246. The road is closed at the project site.

**Contractor:** Peter Lapidus Construction (PLC); the construction contract who won the competitive bid, was issued a Notice to Proceed on 9/30/16 for \$695,629.

**Design Engineer:** Michael Garelo, HDR Fisheries Design Center.

**Resident Engineer:** Gino Filippin, Filippin Engineering.

**County Engineers:** Ron Bensel, Steven Manuel, Eric Pearson, Bert Johnson, and Jemmi Irabon.

**Project Status and Timetable (as of the Board meeting date):**

Status	Time
Notice to Proceed	9/30/2016
Construction start	10/3/2016
Refugio Road closure	10/3/2016
Contract Time (approximate to complete all work)	2.5 months
Completion Date and Refugio Road reopened	12/15/2016
Number of construction work days (WD*) (expected)	54
Elapsed Time (WD)	38
Remaining Time (WDs to complete all work)	16
Time Elapsed to Date (%)	70%
*WD: Working Days.	

**Work Performed to Date:** PLC completed all clearing and grubbing, removal of the concrete low flow crossing and culvert, excavation and pouring of both foundations, installed the bridge on 11/1/16, installed

all rock slope protection, completed all stream work and partly backfilled the arch. The pre-project condition (Figure 1) and current construction efforts (Figures 2-8) are presented as the Exhibits.

**Work Projected for Next Month:** Complete the backfilling of the arch, install the bridge rails and guardrails, seal/stain/graffiti-proof the bridge, the complete road building, and revegetate the site. All work is expected to be completed by 12/15/16.

**FINANCIAL IMPACT:**

A summary of the estimate and current project expenses is as follows.

	<b>Amount</b>	
<b>Revenues:</b>		
CDFW grant	\$938,295	
COMB services match	\$68,420	
COMB operating expenses match	\$43,059	
COMB construction match	\$50,000	
<b>Total:</b>	<b>\$1,099,774</b>	
<b>Estimated Costs:</b>		
COMB operating expenses (match)	\$43,059	
Construction Engineer's Estimate	\$732,545	
Contech bridge fabrication estimate	\$200,000	
<b>Total:</b>	<b>\$975,604</b>	
<b>Contracted Construction:</b>		
Construction Contract (PLC)	\$695,629	
ConTech Contract Amount	\$195,278	
Change Order 1 (root wade + additional toe of slope rock + grading) (approved):	\$38,520	
Change Order 2?:	\$0	
<b>Adjusted Construction Contract Amount:</b>	<b>\$929,427</b>	
	<b>Amount</b>	
<b>Total Expenditure:</b>	<b>FY17</b>	<b>FY16</b>
PLC - Invoice 1:	\$83,000	
PLC - Invoice 2:	\$194,866	
PLC - CO-1 (approved):	\$38,520	
ConTech Bridge (deposit):	\$65,093	
ConTech Bridge (final + tax):	\$129,582	
Geotechnical Services (Fugro) - Invoice 1:	\$1,632	
Resident Engineer - AECOM (fabrication) - Invoice 1:		
Resident Engineer - Gino Filippin (site construction) - Invoice 1:	\$6,057	
Materials Testing - Krazan (Bethlehem) - Invoice 1:		
Materials Testing - Fugro (site construction) - Invoice 1:	\$3,071	
COMB Legal Counsel Bid Packet + Contract review:		
Manzanita Nursery (mitigation oak trees) - Invoice 1:		
Tri-Co Reproduction - all invoices:	\$517	
SB County Encroachment Permit Fee:	\$20,303	\$10,000
CDFW 1600 Permit Fee:		\$4,912
<b>Total Paid:</b>	<b>\$542,641</b>	<b>\$14,912</b>
% Estimated Costs to Total Expenditures:	55.6%	
Estimated Costs minus Total Expenditures:	\$432,963	
Revenues minus Total Expenditures:	\$557,133	



**LEGAL CONCURRENCE:**

COMB legal counsel has reviewed and approved the project.

**ENVIRONMENTAL COMPLIANCE:**

All permits have been obtained and are being followed.

**COMMITTEE STATUS:**

The Fisheries Committee has reviewed and recommended to the Board to approve the project.

**RECOMMENDATION:**

For Board information only.

**LIST OF EXHIBITS:**

Construction photos:



**Figure 1:** Pre-project condition looking upstream.



**Figure 2:** Bridge delivery.



**Figure 3:** Bridge installation.





**Figure 4:** Backfilling the arched bridge.



**Figure 5:** Rock slope protection installation.





**Figure 6:** Stream work, toe of slope rocks downstream of the bridge.



**Figure 7:** Upstream root wade placement.



**Figure 8:** Backfilling of the arches with road compaction.



# CACHUMA OPERATION AND MAINTENANCE BOARD

## BOARD MEMORANDUM

**DATE:** November 28, 2016  
**TO:** Janet Gingras, General Manager  
**FROM:** Tim Robinson, Fisheries Division Manager  
**RE:** **MONTHLY FISHERIES DIVISION REPORT**

### HIGHLIGHTS:

- Water delivery to Hilton Creek continues to be conducted by USBR through a submersible pump in the Stilling Basin that is pumping water to the Lower Release Point of Hilton Creek through the Hilton Creek Watering System with acceptable water quality conditions for the Hilton Creek *O. mykiss* population. On 11/8/16, USBR installed a second submersible backup pump in the Stilling Basin but did not connect those pumps to the Hilton Creek Water Tanks.
- The Long Pool downstream of the Stilling Basin and Bradbury Dam continues to dry out due to the ongoing drought and no dam releases. A fish rescue was conducted on 10/20/16 and 10/26/16 with no *O. mykiss* captures, only a variety of non-native fish.
- Quiota Creek Crossing 4 and Crossing 0A bridges were installed on 11/1/16 and 11/3/16, respectively. Both projects are expected to be completed by the middle of December.

In compliance with the 2000 Cachuma Project Biological Opinion (BiOp) (NMFS, 2000) and as described in the 2004 Lower Santa Ynez River Fish Management Plan (SYRTAC, 2000) and the Monitoring Program in the 2000 Revised Biological Assessment (BA), the Cachuma Project Biology Staff (CPBS) conducts routine monitoring of steelhead/rainbow trout and their habitat on the Lower Santa Ynez River (LSYR) below Bradbury Dam. The following is a list of activities carried out by CPBS since the last COMB Board Fisheries Division Report that has been broken out by categories.

### LSYR Steelhead Monitoring Elements:

**Lake Profiles:** Lake Cachuma water quality measurements (temperature, dissolved oxygen concentration solids and turbidity) at one meter intervals from the surface to the bottom of the lake (Lake Profile) are taken once a month, normally from April through December at the Hilton Creek Watering System (HCWS) intake barge. This is considered to be near the deepest point in the lake and allows for monitoring of lake stratification, water quality conditions at the intake level for the HCWS and lake-turnover. Due to the drought and the need to carefully monitor Lake Cachuma, lake profiles are being taken monthly throughout the year.

**Cachuma Lake Oak Tree Restoration Program:** COMB staff, with guidance from a hired professional arborist, continues to implement the Program and has successfully conducted all management actions as required. An update of the project is provided in a separate Board memo.



**Hilton Creek Releases from a Submersible Pump placed in the Stilling Basin to the Lower Release Point:** U. S Bureau of Reclamation (USBR) continues to provide flows to Hilton Creek through an USBR installed small submersible pump on the south side of the Stilling Basin that is connected to the Chute Release Point of the Hilton Creek Watering System and allows water to be pumped directly to the Lower Release Point of Hilton Creek. The system continues to successfully provide just enough water to sustain the remaining population of *Oncorhynchus mykiss* (*O. mykiss*) in Hilton Creek. A second backup submersible pump was installed by USBR on 11/8/16 but that delivered water still does not go through the Hilton Creek water tanks. Water quality conditions in Hilton Creek are being monitored at several locations and reported weekly to the Adaptive Management Committee.

### **Tributary Project Updates:**

**Quiota Creek Crossing 0A:** COMB received a 2014 CDFW-FRGP Grant for \$671,635 with a landowner construction match of \$50,000. The COMB Board approved the project through Resolution 612 on 5/23/16. The project broke ground on 10/13/16 and the bridge was successfully installed on 11/3/16. A separate Board memo has been prepared with further detail.

**Quiota Creek Crossing 4:** COMB was awarded a 2015 CDFW-FRGP Grant on 3/30/15 for \$938,295 with a COMB construction match of \$50,000. The project broke ground on 10/3/16 and the bridge was successfully installed on 11/1/16. A separate Board memo has been prepared with further detail.

**Quiota Creek Crossing 5:** As discussed and recommended by the COMB Board on 3/7/16, staff submitted a 2016 CDFW-FRGP Grant on 3/11/16 for \$893,287 with a COMB construction match of \$50,000. If funded, the project would most likely be built in the fall of 2017 pending design approval and permit acquisition.

**Quiota Creek Crossing 8:** This project and the required Cooperative Agreement with the County was discussed at the 5/4/16 Fisheries Committee meeting with approval by the Board on 5/23/16 to move forward with the project and the Cooperative Agreement. The County Board of Supervisors approved the Cooperative Agreement on 7/12/16. With a fully executed Cooperative Agreement, the County submitted a CalTrans grant application to fund the project and CalTrans and approved the funding for a full bridge replacement. The next steps are to obtain SBCAG approval (expected on 11/17/19), go through the CalTrans process for obtaining a Project Engineer once completed this will trigger approval to begin grant expenditures (January 2017), hold a field review meeting with CalTrans (January 2017), and then begin environmental review, permitting, design, flood area certificates, and Right of Way in February 2017. Pending the above, the project would be built in fall 2017 or 2018.

**Salsipuedes Creek – Jalama Road Fish Ladder:** There has been no action on the suggested repairs to this project

**El Jaro Creek – Cross Creek Ranch Fish Passage Facility:** There has been no action on the suggested repairs to this project

### **Hilton Creek Watering System (HCWS) Repairs and Upgrades plus the Hilton Creek Emergency Backup System (HCEBS)**

The HCWS and HCEBS are owned, operated and maintained by USBR. The HCEBS was completed at the end of January 2016. An additional contract modification (Mod-005) is in process

to have the contractor install security fencing and lighting for the HCEBS. With this system fully operational, USBR can now work on identified repairs to the HCWS which will be scheduled at some point. No work or maintenance has been conducted by USBR on either of these water delivery systems this past month.

### Surcharge Water Accounting

The following table summarizes the amount of Surcharge water used to date from each of the three accounts at the end of last month (Table 1). All numbers come from USBR's Daily Operations Report. The start time for the use of the Surcharge Water Accounts was 5/27/11, or the last day of full surcharge. As of May 2012, all of the Fish Rearing Account waters have been used and USBR is now using Project Yield to meet BiOp target flows. A WR 89-18 release began on 7/15/13 and ended on 12/2/13, another began on 8/18/14 and ended on 11/11/14, another began on 8/3/15 and ended on 9/26/15, and the 2016 WR 89-18 release started on 7/12/16. During these releases, no Fish Rearing releases are debited as WR 89-18 releases are used conjunctively with fish flows under the Cachuma Project Settlement Agreement. The Adaptive Management Committee (AMC) called for two releases from the Adaptive Management Account (AMA), 35 acre-feet in October 2012 and 114 acre-feet in June 2013. What remains of the AMA is 351 acre-feet. There have been no releases from the Fish Passage Supplementation Account (FPSA). Determination of critical drought and the associated accounting and possible usage of the AMA and FPSA have not been finalized and approved by NMFS hence is not reflected in Table 1. No fish water during October was debited to any account due to extraction from the Stilling Basin below the dam and release to Hilton Creek below the dam.

**Table 1:** Summary of the surcharge water accounting and use of Project Yield.

Accounts*	Allocation	Amount Used**	Amount Remaining
Units:	(acre-feet)	(acre-feet)	(acre-feet)
<b>Fish Passage Supplementation</b>	3,200	0	3,200
<b>Adaptive Management</b>	500	149	351
<b>Fish Rearing***</b>	5,484	5,484	0
<b>Project Yield</b>		15,022	
<b>Total:</b>	9,184	20,655	3,551
* Originally was 9,200 af, 8,942 af in 2008 and 9,184 af in 2013.			
** Values as of 10/31/16.			
*** This water is for meeting required target flows. This is not an official account and is what remains after subtracting the other two accounts.			

### Reporting / Outreach / Training

**Reporting:** Staff continues to work on the Annual Monitoring Reports. Staff has been providing information to USBR as requested in support of the recent Adaptive Management Committee meetings, Reconsultation, and operations requests.

**Outreach and Training:** Staff continues to work with Quiota Creek and Salsipuedes Creek watershed landowners, interested parties within the Santa Ynez Valley and the County on a variety of fisheries related issues. Staff attended the SRF sponsored Southern Steelhead Summit in San Luis Obispo on 10/27-28/16 and gave a talk on the drought and steelhead as well as led a field trip to some of our restoration project sites within the Santa Ynez River basin.

**Consultant Activity Summary:**

***HDR Fisheries Design Center*** (Mike Garello) – Design, reporting and oversight work for the Quiota Creek Crossings 0A, 4, 5 and 8 projects.

***ICF*** (Jean Baldrige) – BiOp compliance tasks and support.

***COM3 Consulting*** (Gerald Comati) – Quiota Creek Crossing 8 CalTrans grant application.

# CACHUMA OPERATION & MAINTENANCE BOARD

## BOARD MEMORANDUM

Date:	November 28, 2016
Submitted by:	Tim Robinson and Scott Volan
Approved by:	Janet Gingras

**SUBJECT:** Lake Cachuma Oak Tree Restoration Program

**SUMMARY:**

***Maintenance***

This memorandum on the Lake Cachuma Oak Tree Restoration Program reflects maintenance completed since January, 2016 to the present (1/1/16 – 11/16/16, Table 1). Labor and expenses for the entire fiscal year (July 2016 - June 2017) as well as water usage will be tracked separately but not reported as recommended by the COMB Board Lake Cachuma Oak Tree Committee. COMB staff continues to rely on the Fisheries Division seasonal employees to conduct the majority of oak tree work in the field. The inventory of all trees planted has been presented to the Lake Cachuma Oak Tree Committee at its 2/25/16 meeting as well as the 2015 Lakeshore Survey, which sets the mitigation number for 2015. Both the 2014 Annual Report and 2015 Lakeshore Survey have been completed and distributed to the COMB Board.

**Table 1:** Cachuma Oak Tree Program completed tasks since January, 2016.

	Jan 2016	Feb 2016**	March 2016	April 2016	May 2016	June 2016	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016
<b>Year 8 Oaks (2015-2016)</b>	New Trees	New Trees	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
	Gopher Baskets	Gopher Baskets	Weeded		Weeded	Weeded	Weeded	Weeded	Weeded	Weeded	Weeded
	Fert/Comp	Fert/Comp									
	Deer Cages	Deer Cages									
	Mulch/Irrigated	Mulch/Irrigated									
<b>Year 7 Oaks (2014-2015)</b>		Weeded	Irrigated	Irrigated		Irrigated	Irrigated	Irrigated	Irrigated	Irrigated	Irrigated
		Mulched	Mulched	Weeded		Weeded	Weeded	Weeded	Weeded	Weeded	Weeded
			Weeded			Mulched	Mulched				
<b>Year 6 Oaks (2010-2011)</b>					Irrigated						
					Weeded						
<b>Year 5 Oaks (2009-2010)</b>								Irrigated			
								Weeded			
<b>Year 4 Oaks (2008-2009)</b>			Cage maint.		Irrigated						
<b>Year 3 Oaks (2007-2008)</b>			Cage maint.		Irrigated						Irrigated
<b>Year 2 Oaks (2006-2007)</b>					Irrigated						
<b>Year 1 Oaks (2005-2006)</b>						Irrigated	Irrigated				

\*\*February work included Year 8 oak tree inventory.

The Fisheries Division continues to focus on irrigating the newer Year 7 and Year 8 trees at Bradbury Dam and Storke Flat. Two separate watering crews are being used to facilitate faster turnaround times between watering. The final fall irrigation of the Year 7 and Year 8 trees was completed the first week of November,

and crews have begun watering the older age classes of oak trees. Staff continues to hand weed and apply supplemental mulch to trees during watering activities.

**RECOMMENDATION:**

For Board information only.

**LIST OF EXHIBITS:**

N/A





## 16-17 ENTITLEMENT

### CACHUMA OPERATION AND MAINTENANCE BOARD WATER PRODUCTION AND WATER USE REPORT FOR THE MONTH OF OCTOBER 2016 AND THE WATER YEAR TO DATE

(All in rounded Acre Feet)

	MONTH					YTD
	TOTAL					TOTAL
<b>WATER PRODUCTION:</b>						
Cachuma Lake (Tec. Diversion)						1,432
Tecolote Tunnel Infiltration						43
Cachuma Lake (County Park)						2
State Water Diversion Credit						763
Bishop Ranch Diversion						0
Meter Reads						659
So. Coast Storage gain/(loss)						12
<b>Total Production</b>						<b>1,477</b>
<b>Total Deliveries</b>						<b>1,434</b>
Unaccounted-for						42
% Unaccounted-for						2.86%
	<b>GWD</b>	<b>SB CITY</b>	<b>MWD</b>	<b>CVWD</b>	<b>SYRWCD</b>	<b>TOTAL</b>
<b>WATER USE:</b>					<b>I.D. #1</b>	
M&I	0	458	166	0	2	626
Agricultural	0	0	34	0	0	34
	<b>0</b>	<b>458</b>	<b>200</b>	<b>0</b>	<b>2</b>	<b>659</b>
<b>Unaccounted Reconciliation - Cachuma:</b>						
M&I	0	16	10	0	0	26
Agriculture	0	0	2	0	0	2
Unaccounted-for: Cachuma	<b>0</b>	<b>16</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>28</b>
Unaccounted-for: SWP Report	2	0	5	7	0	14
	<b>2</b>	<b>16</b>	<b>17</b>	<b>7</b>	<b>0</b>	<b>42</b>
<b>Total Use for Month</b>	<b>2</b>	<b>474</b>	<b>217</b>	<b>7</b>	<b>2</b>	<b>701</b>
Same Mo/prev. yr	567	667	296	140	2	1,672
M&I Yr to date	0	474	176	0	2	652
Ag. Yr to date	0	0	36	0	0	36
<b>TOTAL YTD</b>	<b>0</b>	<b>474</b>	<b>212</b>	<b>0</b>	<b>2</b>	<b>687</b>
USAGE % YTD	6.5%	44.8%	62.9%	0.0%	15.5%	37.8%
<b>Previous Year/YTD</b>	<b>567</b>	<b>667</b>	<b>296</b>	<b>140</b>	<b>2</b>	<b>1,672</b>
Evaporation #	37	81	25	0	2	145
Evaporation, YTD	37	81	25	0	2	145
Entitlement ***	0	0	0	0	0	0
Carryover	561	1,239	377	0	24	2,201
Carryover Balances Spilled YTD	0	0	0	0	0	0
Surplus^^	0	0	0	0	0	0
State Water Exchange^	0	0	0	0	0	0
Transfers/Adjustment ****	0	0	0	0	0	0
Passthrough H2O**	0	0	0	0	0	0
<b>TOTAL AVAILABLE</b>	<b>561</b>	<b>1,239</b>	<b>377</b>	<b>0</b>	<b>24</b>	<b>2,201</b>
<b>REMAINING BALANCE</b>	<b>524</b>	<b>684</b>	<b>140</b>	<b>0</b>	<b>20</b>	<b>1,369</b>
Percentage Remaining	93%	55%	37%	0%	85%	62%

\*\*\* Per USBR advisory letter dated 10/21/2016 to SB County Water Agency, zero (0) af entitlement allocated.

\*\* City is operating under pass through mode declared November 2008.

State Water Deliveries to Lake Cachuma for October were: MWD 350 AF; CVWD 180 AF  
GWD 511 AF (Morehart 3 AF); City of S.B. 321 AF; and LaCumbre 35 AF; (Ratheon 0 AF).

^ Per SWP Exchange Agrmt GWD received 0 AF; MWD received 0 AF;

City of SB received 0 AF; and CVWD received 0 AF from ID#1 in October 2016.

# Per USBR email dated 12/23/2015, evap charged to unallocated water until unallocated water is exhausted.

Unallocated water was exhausted during the month of July 2016. Prorated evaporation applied.

~ Reconciliation of unaccounted water - (October 42 AF) See Unaccounted Allocation Worksheet

**Unaccounted-for Water Allocations  
OCTOBER 2016**

<b>Acre-feet (AF)</b>	
<b>Total Unaccounted-for Water:</b>	42

Lauro Reservoir Evaporation (LE):	6.0
Cater Treatment Plant Loss (CTPL):	0.6
Ortega Toe Drain Loss (OTD):	1.0
<b>Total Identified Loss:</b>	<b>7.6</b>

<b>Pipeline Loss (PL) Remaining (AF):</b>	<b>34.4</b>
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Pipeline Loss (PL) by Use Area:		
Use Area	% System Capacity	Pipeline Loss (AF)
Use Area 1	9%	3.1
Use Area 2	64%	22.0
Use Area 3	5%	1.7
Use Area 4	22%	7.6
<b>Total</b>	<b>100%</b>	<b>34.4</b>

Use Area 1			
Agency	Deliveries (AF)	DEL %	Loss (AF)
GWD	587.25	42%	1.3
City	427.34	30%	0.9
MWD	277.09	20%	0.6
CVWD	111.74	8%	0.2
<b>Total</b>	<b>1403.42</b>	<b>100%</b>	<b>3.1</b>

Use Area 3			
Agency	Deliveries (AF)	DEL %	Loss (AF)
City	163.02	30%	0.5
MWD	277.09	50%	0.9
CVWD	111.74	20%	0.3
<b>Total</b>	<b>551.85</b>	<b>100%</b>	<b>1.7</b>

Delivery & Use Amounts (AF)	
GWD Metered Deliveries	556.9
Overlap Amount	30.3
City Metered Deliveries	457.7
Sheffield Pump SIn Production	163.0
MWD Metered Deliveries	277.1
CVWD Metered Deliveries	111.7
<b>Total Lauro/Cater Use (AF):</b>	<b>846.5</b>

Use Area 2			
Agency	Deliveries (AF)	DEL %	Loss (AF)
GWD	30.31	4%	0.8
City	427.34	50%	11.1
MWD	277.09	33%	7.2
CVWD	111.74	13%	2.9
<b>Total</b>	<b>846.48</b>	<b>100%</b>	<b>22.0</b>

Use Area 4			
Agency	Deliveries (AF)	DEL %	Loss (AF)
MWD	277.09	71%	5.4
CVWD	111.74	29%	2.2
<b>Total</b>	<b>388.83</b>	<b>100%</b>	<b>7.6</b>

Lauro & Cater Loss (LE + CTPL) = 6.6 AF		
Agency	% of Loss	Loss (AF)
GWD	4%	0.2
City	50%	3.3
MWD	33%	2.2
CVWD	13%	0.9

**SUMMARY: UNACCOUNTED-FOR WATER ALLOCATIONS**

	Lauro & Cater Loss (LE + CTPL)	Ortega Toe Drain (OTD)	Use Area 1	Use Area 2	Use Area 3	Use Area 4	Total (AF)	Rounded Total (AF)
GWD	0.2	0.0	1.3	0.8	0.0	0.0	2.3	2
City	3.3	0.0	0.9	11.1	0.5	0.0	15.9	16
MWD	2.2	0.5	0.6	7.2	0.9	5.4	16.7	17
CVWD	0.9	0.5	0.2	2.9	0.3	2.2	7.0	7
<b>Total</b>	<b>6.6</b>	<b>1.0</b>	<b>3.1</b>	<b>22.0</b>	<b>1.7</b>	<b>7.6</b>	<b>42.0</b>	<b>42</b>

# CACHUMA OPERATION AND MAINTENANCE BOARD

## WATER STORAGE REPORT

MONTH: **October 2016**

### GLEN ANNIE RESERVOIR

Capacity at 385' elevation:	518	AF
Capacity at sill of intake at 334' elevation:	21	AF
Stage of Reservoir Elevation	333.00	Feet
Water in Storage	21.82	AF

### LAURO RESERVOIR

Capacity at 549' elevation:	503	AF
Capacity at top of intake screen, 520' elevation:	106.05	AF
Stage of Reservoir Elevation	549.10	Feet
Water in Storage	504.59	AF

### ORTEGA RESERVOIR

Capacity at 460' elevation:	65	AF
Capacity at outlet at elevation 440':	0	AF
Stage of Reservoir Elevation	446.00	Feet
Water in Storage	16.42	AF

### CARPINTERIA RESERVOIR

Capacity at 384' elevation:	45	AF
Capacity at outlet elevation 362':	0	AF
Stage of Reservoir Elevation	378.50	Feet
Water in Storage	31.45	AF

### TOTAL STORAGE IN RESERVOIRS

	552.45	AF
Change in Storage	11.82	AF

### CACHUMA RESERVOIR\*

Capacity at 750' elevation:	184,121	AF
Capacity at sill of tunnel 660' elevation:	24,281	AF
Stage of Reservoir Elevation	646.71	Feet
Water in Storage	14,241	AF
Surface Area	638	
Evaporation	261.3	AF
Inflow	256.0	AF
Downstream Release WR8918	0.0	AF
Fish Release (Hilton Creek)	0.0	AF
Outlet	0.0	AF
<b>Spill/Seismic Release</b>	0	AF
State Project Water	1397.1	AF
Change in Storage	19	AF
Tecolote Diversion	1,432.1	AF

**Rainfall: Month:** 1.13 **Season:** 1.13 **Percent of Normal:** 128%  
 Item 14  
 Page 4

**SUMMARY OF WATER USED**  
**CACHUMA PROJECT - CONTRACT #175R-1802**

Contract Year: 10/1/16 to: 9/30/17

Contract Entity: Carpinteria Valley Water District  
 Last updated by C.O.M.B. 10/31/16

Month	Approved Schedule Current Year		Carryover Previous Year	TOTAL WATER USED Acre-feet			WATER USED CHARGED TO CARRYOVER BALANCES Acre-feet			WATER USED CHARGED TO CURRENT ENTITLEMENT Acre-feet		
	M & I	Agr		Total	Evap	Div	Total	M & I	AG	Allocation	M & I	AG
Oct	0	0	0	0	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0
Jan	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0

Month	STORAGE WATER		CONVERSIONS		CURRENT SCHEDULE		SCHEDULE AND REVISIONS	
	M & I	Agr	M & I	Agr	M & I	AG	M & I	AG
Oct	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0
Jan	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Month	REMAINING BALANCES		
	Total	M&I	AG
Oct	0	0	0
Nov	0	0	0
Dec	0	0	0
Jan	0	0	0
Feb	0	0	0
Mar	0	0	0
Apr	0	0	0
May	0	0	0
Jun	0	0	0
Jul	0	0	0
Aug	0	0	0
Sep	0	0	0
Total	0	0	0

TOTAL 0

**SUMMARY OF WATER USED**  
**CACHUMA PROJECT - CONTRACT #175R-1802**

Contract Year: 10/1/16 to: 9/30/17

Contract Entity: **Goleta Water District**  
 Last updated by **C.O.M.B. 10/31/16**

Month	Approved Schedule Current Year		Carryover Previous Year	TOTAL WATER USED			WATER USED CHARGED TO CARRYOVER BALANCES			WATER USED CHARGED TO CURRENT ENTITLEMENT		
	M & I	Agr		Total	Evap	Div	Total	M & I	Allocation	Agr	M & I	Agr
Oct	0	0	561	0	37	0	37	0	37	0	0	0
Nov	0	0		0	0	0	0	0	0	0	0	0
Dec	0	0		0	0	0	0	0	0	0	0	0
Jan	0	0		0	0	0	0	0	0	0	0	0
Feb	0	0		0	0	0	0	0	0	0	0	0
Mar	0	0		0	0	0	0	0	0	0	0	0
Apr	0	0		0	0	0	0	0	0	0	0	0
May	0	0		0	0	0	0	0	0	0	0	0
Jun	0	0		0	0	0	0	0	0	0	0	0
Jul	0	0		0	0	0	0	0	0	0	0	0
Aug	0	0		0	0	0	0	0	0	0	0	0
Sep	0	0		0	0	0	0	0	0	0	0	0
Total	0	0	561	0	37	0	37	0	37	0	0	0

Month	STORAGE WATER		CONVERSIONS		SCHEDULES AND REVISIONS		
	M & I	Agr	M & I	Agr	M & I	AG	AG
Oct	0	0	0	0	412	149	0
Nov	0	0	0	0			0
Dec	0	0	0	0			0
Jan	0	0	0	0			0
Feb	0	0	0	0			0
Mar	0	0	0	0			0
Apr	0	0	0	0			0
May	0	0	0	0			0
Jun	0	0	0	0			0
Jul	0	0	0	0			0
Aug	0	0	0	0			0
Sep	0	0	0	0			0
Total	0	0	0	0	561	561	0

Month	REMAINING BALANCES	
	M & I	AG
Oct	524	112
Nov		
Dec		
Jan		
Feb		
Mar		
Apr		
May		
Jun		
Jul		
Aug		
Sep		
Total	524	112

TOTAL 524



**SUMMARY OF WATER USED**  
**CACHUMA PROJECT - CONTRACT #175R-1802**

Contract Year: 10/1/16 to: 9/30/17

Contract Entity: **Montecito Water District**  
 Last updated by **C.O.M.B. 10/31/16**

Month	Approved Schedule Current Year		Carryover Previous Year	TOTAL WATER USED				WATER USED CHARGED TO CARRYOVER BALANCES				WATER USED CHARGED TO CURRENT ENTITLEMENT			
	M & I	Agr		total	Evap	Div	Total	Allocation		M & I	Agr	M & I	Agr	Total	
								M & I	Agr						
Oct	176	36	212	25	212	237	197	40	0	0	0	0	0		
Nov	0	0		0	0				0	0	0	0	0		
Dec	0	0		0	0				0	0	0	0	0		
Jan	0	0		0	0				0	0	0	0	0		
Feb	0	0		0	0				0	0	0	0	0		
Mar	0	0		0	0				0	0	0	0	0		
Apr	0	0		0	0				0	0	0	0	0		
May	0	0		0	0				0	0	0	0	0		
Jun	0	0		0	0				0	0	0	0	0		
Jul	0	0		0	0				0	0	0	0	0		
Aug	0	0		0	0				0	0	0	0	0		
Sep	0	0		0	0				0	0	0	0	0		
Total	176	36	212	25	212	237	197	40	0	0	0	0	0		

Month	STORAGE WATER		CONVERSIONS		CURRENT SCHEDULE		SCHEDULE AND REVISIONS	
	M & I	Agr	M & I	Agr	M & I	Agr	M & I	Agr
Oct	-40	40	0	0	0	0	0	0
Nov								
Dec								
Jan								
Feb								
Mar								
Apr								
May								
Jun								
Jul								
Aug								
Sep								
Total	-40	40	0	0	377	377	0	0

Month	REMAINING BALANCES	
	M & I	Agr
Oct	140	0
Nov		
Dec		
Jan		
Feb		
Mar		
Apr		
May		
Jun		
Jul		
Aug		
Sep		
Total	140	0

TOTAL 140

**SUMMARY OF WATER USED**  
**CACHUMA PROJECT - CONTRACT #75R-1802**

Contract Year: 10/1/16 to: 9/30/17

Contract Entity: **City of Santa Barbara**  
 Last updated by **C.O.M.B. 10/31/16**

Month	Approved Schedule Current Year		Carryover Previous Year	WATER USE CHARGED TO CARRYOVER BALANCES TO CURRENT ENTITLEMENT				WATER USE CHARGED TO CURRENT ENTITLEMENT		
	M & I	Agr		total	Evap	Div	Total	M & I	Agr	Total
Oct	474	0	474		81	474	555	0	0	0
Nov	0	0	0		0	0				
Dec	0	0	0		0	0				
Jan	0	0	0		0	0				
Feb	0	0	0		0	0				
Mar	0	0	0		0	0				
Apr	0	0	0		0	0				
May	0	0	0		0	0				
Jun	0	0	0		0	0				
Jul	0	0	0		0	0				
Aug	0	0	0		0	0				
Sep	0	0	0		0	0				
<b>Total</b>	<b>474</b>	<b>0</b>	<b>474</b>		<b>81</b>	<b>474</b>	<b>555</b>	<b>0</b>	<b>0</b>	<b>0</b>

Month	STORAGE WATER		CONVERSIONS		CURRENT SCHEDULE		SCHEDULE AND REVISIONS	
	M & I	Agr	M & I	Agr	M & I	Agr	M & I	Agr
Oct	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0
Jan	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,239</b>	<b>1,239</b>	<b>0</b>	<b>0</b>

Month	REMAINING BALANCES	
	M & I	Agr
Oct	684	0
Nov	0	0
Dec	0	0
Jan	0	0
Feb	0	0
Mar	0	0
Apr	0	0
May	0	0
Jun	0	0
Jul	0	0
Aug	0	0
Sep	0	0
<b>Total</b>	<b>684</b>	<b>0</b>

TOTAL 684

**SUMMARY OF WATER USED**  
**CACHUMA PROJECT - CONTRACT #175R-1802**

Contract Year: 10/1/16 to: 9/30/17

Contract Entity: Santa Ynez River Water Conservation District, ID#1  
 Last updated by C.O.M.B. 10/31/16

Month	TOTAL WATER USED		WATER USE CHARGED TO CARRYOVER BALANCES				WATER USE CHARGED TO CURRENT ENTITLEMENT	
	M & I	Agr	Evap	Div	Total	M & I	Agr	Total
Oct	2	0	2	0	2	4	0	0
Nov	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0
Jan	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0
Total	2	0	2	0	2	4	0	0

**CONVERSIONS**

STORAGE WATER	AGR	M & I
M & I	0	0
AGR	0	0

**SCHEDULE AND REVISIONS**

Month	M & I	AGR	Total
Begin Bal	0	0	0
Oct	0	0	0
Nov	0	0	0
Dec	0	0	0
Jan	0	0	0
Feb	0	0	0
Mar	0	0	0
Apr	0	0	0
May	0	0	0
Jun	0	0	0
Jul	0	0	0
Aug	0	0	0
Sep	0	0	0
Total	24	0	24

**COUNTY PARKS**

Month	M & I	AGR	Total
A.F. Used	1.72	0	1.72
Oct	0	0	0
Nov	0	0	0
Dec	0	0	0
Jan	0	0	0
Feb	0	0	0
Mar	0	0	0
Apr	0	0	0
May	0	0	0
Jun	0	0	0
Jul	0	0	0
Aug	0	0	0
Sep	0	0	0
Total	20	0	20

\*NOTE:

TOTAL 20

**SUMMARY OF WATER USED**  
**CACHUMA PROJECT - CONTRACT #175R-1802**

Contract Entity: Santa Barbara Co. Water Agency  
 Last updated by C.O.M.B. 10/31/16  
 Contract Year: 10/1/16 to: 9/30/17

Month	Approved Schedule Current Year	Carryover Previous Year	TOTAL WATER USED			WATER USED CHARGED TO CARRYOVER BALANCES			WATER USED CHARGED TO CURRENT ENTITLEMENT			
			Acre-feet		Total	Div	Allocation		Agr	Acre-feet		Total
			Use %	M & I			Agr	M & I		Agr	M & I	
Oct	0	2201	37.85%	652	36	688	145	688	756	77	0	0
Nov				0	0	0	0	0				
Dec				0	0	0	0	0				
Jan				0	0	0	0	0				
Feb				0	0	0	0	0				
Mar				0	0	0	0	0				
Apr				0	0	0	0	0				
May				0	0	0	0	0				
Jun				0	0	0	0	0				
Jul				0	0	0	0	0				
Aug				0	0	0	0	0				
Sep				0	0	0	0	0				
Total	0	2201		652	36	688	145	688	756	77	0	0

**CONVERSIONS**

Month	STORAGE WATER M & I	STORAGE WATER Agr	CURRENT SCHEDULE M & I	CURRENT SCHEDULE Agr	SCHEDULE AND REVISIONS M & I	SCHEDULE AND REVISIONS Agr	REMAINING BALANCES M & I	REMAINING BALANCES Agr	Total
Oct	-40	40	0	0	2,052	149	1,256	112	0
Nov					0	0	0	0	0
Dec					0	0	0	0	0
Jan					0	0	0	0	0
Feb					0	0	0	0	0
Mar					0	0	0	0	0
Apr					0	0	0	0	0
May					0	0	0	0	0
Jun					0	0	0	0	0
Jul					0	0	0	0	0
Aug					0	0	0	0	0
Sep					0	0	0	0	0
Total	-40	40	0	0	2,201	149	1,368	112	0

Month	COUNTY PARKS A.F. Used	REMAINING BALANCES M & I	REMAINING BALANCES Agr	Total
Oct	1.72	1,256	112	1,368
Nov				
Dec				
Jan				
Feb				
Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Total	1.72	1,256	112	1,368

**TOTAL 1,368**

**COMB STATE WATER PROJECT ACCOUNTING - SOUTH COAST ONLY (Does not include SYRWCD, ID#1 or exchange water)**

MONTH	DELVRD TO LAKE	Delvd to Lake	CWND Stored	Delvd to SC	Evap	MWD Stored	Evap/Spill	Delvd to SC	S.B. Stored	Delvd to Lake	GWD Stored	Evap/Spill	Delvd to SC	Delvd to Lake	LCMWC Stored	Evap/Spill	Delvd to SC	RSYS Stored	Delvd to Lake	Delvd to SC	MLC Stored	Delvd to Lake	Delvd to SC
Bal. Frwd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
January	833	0	0	104	363	0	0	363	470	201	0	0	269	0	561	3	44	0	0	0	0	0	0
February	789	0	0	107	366	0	0	366	423	492	0	0	130.1	0	510	5	46	0	0	0	0	0	0
March	1284	170	52	118	725	11	0	363	462	444	0	0	501	0	456	9	46	5	0	5	2	0	2
April	1152	192	130	111	807	18	0	428	193	0	0	0	626	0	434	11	11	5	0	5	3	0	3
May	658	108	139	95	762	23	0	305	0	0	0	0	0	0	413	13	8	5	0	5	3	0	3
June	371	0	50	84	507	30	0	366	0	0	0	0	0	0	390	16	6	0	0	0	5	0	5
July	306	0	0	48	186	21	0	306	0	0	0	0	0	0	368	16	6	0	0	0	0	0	0
August	40	0	0	0	0	12	0	35	0	0	0	0	0	0	340	24	5	0	0	0	5	0	5
September	42	0	0	0	0	0	0	0	0	0	0	0	0	35	340	22	13	0	0	0	7	0	7
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	288	15	37	0	0	0	0	0	0
November	60	20	0	20	0	0	0	20	0	0	0	0	0	0	217	9	63	0	0	0	0	0	0
December	7	0	0	0	0	0	0	0	0	0	0	0	0	0	140	5	72	0	0	0	7	0	7
<b>Total</b>	<b>5542</b>	<b>490</b>	<b>0</b>	<b>475.7</b>	<b>14</b>	<b>870</b>	<b>0</b>	<b>1616</b>	<b>2552</b>	<b>0</b>	<b>2552</b>	<b>21</b>	<b>1526</b>	<b>35</b>	<b>140</b>	<b>149</b>	<b>355</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>32</b>	<b>0</b>	<b>32</b>

**COMB STATE WATER PROJECT ACCOUNTING - SOUTH COAST ONLY (Does not include SYRWCD, ID#1 or exchange water)**

MONTH	DELVRD TO LAKE	Delvd to Lake	CWND Stored	Delvd to SC	Evap	MWD Stored	Evap/Spill	Delvd to SC	S.B. Stored	Delvd to Lake	GWD Stored	Evap/Spill	Delvd to SC	Delvd to Lake	LCMWC Stored	Evap/Spill	Delvd to SC	RSYS Stored	Delvd to Lake	Delvd to SC	MLC Stored	Delvd to Lake	Delvd to SC
Bal. Frwd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140	0	0	0	0	0	0	0	0
January	653	54	38	16	0	0	0	367	200	136	0	0	64	0	157	3	10	0	0	0	2	0	2
February	693	0	36	0	0	0	0	366	200	131	0	0	197	0	142	9	6	0	0	0	2	0	2
March	965	0	33	0	0	0	0	367	596	525	1	10	192	0	116	11	14	0	0	0	2	0	2
April	1283	0	0	29	0	0	0	677	178	24	0	0	357	0	53	15	49	3	0	0	3	0	3
May	1309	0	0	0	0	0	0	522	155	24	28	405	111	0	0	8	44	1	0	1	3	0	3
June	1261	0	0	0	0	0	0	466	112	26	20	551	85	0	0	0	85	5	0	5	5	0	5
July	1342	100	0	100	0	0	0	541	75	28	17	534	91	52	0	39	3	3	0	3	7	0	7
August	1372	135	135	0	0	0	0	549	615	0	9	541	80	51	6	75	3	3	0	3	5	0	5
September	1310	225	246	96	4	14	10	311	1035	0	62	552.1	60	55	5	51	0	0	0	0	4	0	4
October	1400	180	291	112	7	16	5	321	1288	0	68	553.9	35	70	3	17	0	0	0	0	3	0	3
November	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>11588</b>	<b>694</b>	<b>291</b>	<b>353</b>	<b>4</b>	<b>39</b>	<b>15</b>	<b>442</b>	<b>4487</b>	<b>1288</b>	<b>102</b>	<b>686</b>	<b>3928</b>	<b>381</b>	<b>70</b>	<b>60</b>	<b>391</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>36</b>	<b>0</b>	<b>36</b>

Note - (September) GWD transferred 170.64 AF SWP water to City of SB per overlap agreement





**Santa Barbara County Parks Division,  
Cachuma Lake Recreation Area**



**Summary of Aquatic Invasive Species Vessel Inspection Program  
and Early Detection Monitoring Program: **October 2016****

**AIS INSPECTION PROGRAM LAUNCH DATA:**

Cachuma Lake Recreation Area Launch Data -- October 2016		
Inspection Data		
Total Vessels entering Park	9	
Total Vessels launched	9	
Total Vessels Quarantined	0	0%
Returning with Boat Launch Tag	0	0%
New: Removed from Quarantine	*	
Kayak/Canoe: Inspected, launched	9	100%
4-stroke Engines	*	
2-strokes, w/CARB star ratings	*	
2-strokes, NO emissions ratings	*	
Quarantine Data		
Total Vessels Quarantined	0	
Quarantined 7 days	*	
Quarantined 14 days	*	
Quarantined 30 days	0	
Quarantine Cause		
Water on vessel*	*	
Debris on hull*	*	
Plug installed*	*	
From infected county	0	
Ballast tanks*	*	
Boat longer than 24 feet*	*	
Out-of-state	0	
Unspecified*	*	
Mandatory Quarantine All Untagged Boats	0	
Demographic Data		
Quarantined from infected county	0	
Quarantined from SB County	0	
Quarantined from uninfected co	0	

Boat Launch Tags: Boats with Cachuma Lake Boat Launch Tags attach boat to trailer.

No mussel species have been located on any vessel entering Cachuma Lake as of the last day of this month.

\* These conditions are no longer being tracked.

**EARLY DETECTION MONITORING PROGRAM SUMMARY**

**Summary:** No Dreissenid mussels were detected

Inspection Site: Cachuma Lake Marina, Santa Barbara County, California

Inspection Date and Time: 2016.10.27; 10:00 – 13:00 PDT

Method: 5 PVC/Cement Sampling Stations; 54 linear feet of line

Surveyors: Rosey Bishop and Kristin Loft (SBCO Parks)

Lake elevation: Max feet: 753.00, current: 646.44; Max acre-feet: 193,305, current: 14,070;

Current capacity: 7.30%