

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

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

Monday, March 27, 2017

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 February 13, 2017 Special Board Meeting
- b. Minutes February 27, 2017 Regular Board Meeting
- c. Investment of Funds
 - Financial Reports
 - Investment Reports
- d. Review of Paid Claims

4. VERBAL REPORTS FROM BOARD COMMITTEES

Receive verbal information regarding the following committee meetings:

- Administrative Committee Meeting – March 22, 2017
- Operations Committee Meeting – March 22, 2017
- Fisheries Committee Meeting – March 24, 2017

5. PROPOSED DRAFT PROCUREMENT POLICY

For discussion and possible action by motion and roll call vote of the Board

- Draft Procurement Policy

6. LONG-TERM PUMPING FACILITY ALTERNATIVES STUDY - HDR ENGINEERING, INC. PRESENTATION

Action: Recommend approval by motion and roll call vote of the Board

7. QUIOTA CREEK CROSSINGS – FISH PASSAGE IMPROVEMENT PROJECTS

Action: Recommend approval by motion and roll call vote of the Board

- a. Crossing 0A - Storm Impact Restoration Work
- b. Crossing 8 – County of Santa Barbara Professional Services Agreement
- c. Crossing 9 – Grant Application

8. GENERAL MANAGER'S REPORT

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

- Meetings
- Cachuma Project Transferred Project Works Contract
- Operations Division
- Fisheries Division

9. OPERATIONS DIVISION REPORT

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

- Lake Cachuma Operations
- Operation and Maintenance Activities

10. 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

11. 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

12. 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

13. DIRECTORS' REQUESTS FOR AGENDA ITEMS FOR FUTURE MEETING

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

- a. [Government Code Section 54956.9(d)(4)]
Protest of Member Agency Regarding Payment of Quarterly Assessments

15. RECONVENE INTO OPEN SESSION

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

16. MEETING SCHEDULE

- **April 24, 2017 at 2:00 P.M., COMB Office**
- **Board Packages Available on COMB Website: www.cachuma-board.org**

17. 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 SPECIAL MEETING
of the
CACHUMA OPERATION & MAINTENANCE BOARD**

held at
3301 Laurel Canyon Road, Santa Barbara, CA
Monday, February 13, 2016

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:	W. Douglas Morgan	Montecito Water District
	Harwood 'Bendy' White	City of Santa Barbara
	Polly Holcombe	Carpinteria Valley Water District
	Lauren Hanson	Goleta Water District

Others Present: Janet Gingras, Tim Robinson, Dave Stewart, Dan Ellison, Edward Lyons, Adriane Passani, Kelly Dyer, Tom Fayram, and William Carter

2. Public Comment

There were no public comments.

3. Lake Cachuma: Emergency Pumping Facility (EPF) Project

Receive information for discussion and possible action regarding the Emergency Pumping Facility Project

Ms. Janet Gingras, General Manager, reviewed topics within the board memorandum and offered to field any questions from the Board. Ms. Gingras said the past few weeks have presented a few opportunities, challenges, and evolving activities to which discussions have occurred between COMB staff, the contractor, project engineer, and the Board President. She indicated the biggest challenge has been the weather; January storms didn't produce what was predicted and February storms brought more rain than anticipated, with more to come.

Mr. Tim Robinson, Fisheries Division Manager, then presented a series of slides and weather forecast models including: Lake Cachuma's current elevation/capacity (669.88ft. /17.2%), a rainfall and reservoir summary, and GFS predictive model run for the next series of storms (7-14 day).

Mr. Dan Ellison, HDR Engineering, made a presentation on the factors that went into the decision to relocate the pumping barge from site 2 to site 1 and extract site 2 piles. Mr. Ellison re-presented the decision matrix, potential scenarios and cost comparisons, which was reviewed at January's board meeting. It was further reported that due to the recent rising lake level and anticipated rain events in the near term, an emergency operation decision was made by the General Manager, after discussion with the Board President and Project Engineer, to

notify the contractor to commence with the relocation of the barge to site 1 and removal of the site 2 piles.

Following a lengthy discussion comprised of input from the Board and members of the public, Ms. Gingras requested the Board's recommendation to ratify the authorization of the full demobilization of the Emergency Pumping Facility from site 2 to site 1 as described in the DBOM Contract Agreement with Cushman Contracting Corp. (Item 18) and approve the resulting budgeted expenditure in the amount of \$241,000; authorize the General Manager to execute a change order for an additional monthly fee of \$7,000 for the duration of the time site 2 materials are stored at the lake and made available.

Director Holcombe moved to approve the recommendation, seconded by Director White.

Ms. Kelly Dyer, City of Santa Barbara, inquired as to when the barge would be back on-line, to which Mr. Ellison replied Wednesday, March 17th which was within the 48-hour requirement. Ms. Gingras added there was an elected operational outage planned by the Member Agencies to be off-line for 5 days.

Board motioned to approve with a vote of 6/0/1 as follows:

Ayes: Hanson, Holcombe, Morgan, White

Nays: None

Absent/Abstain: Walsh

4. Meeting Schedule

- Next Regular Board meeting will be held February 27, 2017 at 2:00PM
- Board packets are available on COMB Website: www.cachuma-board.org

5. COMB Adjournment

There being no further business, the meeting was adjourned at 3:18 p.m.

Respectfully submitted,

Janet Gingras, Secretary to the Board

APPROVED:

Doug Morgan, President of the Board

	<i>Approved</i>
√	<i>Unapproved</i>

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

**held at
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Monday, February 27, 2017**

1. Call to Order, Roll Call

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

Directors present:	W. Douglas Morgan	Montecito Water District
	Harwood 'Bendy' White	City of Santa Barbara
	Polly Holcombe	Carpinteria Valley Water District
	Lauren Hanson	Goleta Water District

Others present: Janet Gingras, Edward Lyons, Tim Robinson, Scott Engblom, Jackie Kern, William Carter, Dan Ellison, Tom Fayram, Kelley Dyer, Sam Goldman, Philip Walker, Adriane Passani

2. Public Comment

Mr. Philip Walker commented on the recent main spill-way issue at the Lake Oroville dam and his concerns for possible spalling on the surface slab and additional cavities caused by shrinking and/or expansion of the adobe soil. Mr. Walker also shared his concerns with the many fault lines in the area and the need to re-commission the desalination plant in the Santa Barbara area as an alternative during an earthquake disaster.

3. Consent Agenda

- a. **Minutes**
January 23, 2017 Regular Board Meeting
- b. **Investment Funds**
 - Financial Reports
 - Investment Reports
- c. **Review of Paid Claims**

General Manager highlighted annual renewals that are reflected in the January paid claims, such as the annual cathodic protection survey of the Laurel Yard pipeline structure.

Director Hansen moved to approve the consent agenda as presented, seconded by Director Morgan, which carried 6/0/1 as follows:

Ayes: Hanson, Holcombe, Morgan, White
Nays: None
Absent: Walsh

4. Verbal Reports From Board Committees

Special Operations Committee Meeting – February 22, 2017: Janet Gingras, General Manager, provided an update on critical projects affected by recent storm activity; Lauro Diversion Valve and South Coast Conduit projects.

5. Lake Cachuma: Emergency Pumping Facility (EPF) Project

Mr. Dan Ellison, HDR Engineering, Inc. presented the Emergency Pumping Facility (EPF) Project. He reviewed decisions that were made before and during the storm event for the demobilization of Site 1 operations. He provided alternatives going forward for the barge (whether to purchase, rent or discard) and estimated to have the reports ready for staff review by the end of the week regarding a long-term solution.

Director Holcombe stressed the difficulty of the decision process in the short amount of time allot when the lake is on the rise, and going forward with the unknown weather forecast that lie ahead.

Director White inquired about the existing pipe materials not suited for submerged application. Mr. Ellison responded that the current pipe is too thin and may collapse if submerged and recommended a thicker material going forward. He is awaiting an accurate report from the surge analysis. Going forward, Mr. Ellison will be presenting all logical options for the barge and secured pipeline, including a land based option.

Kelley Dyer from City of Santa Barbara commented on the projections being presented were based on a zero allocation of Cachuma and has requested from the Bureau a time estimate on the initial allocations for this year, which in turn will change the projections of the Lake levels.

Tim Fayram noted the member unit manager meeting next Wednesday where they will be discussing the issues of lake evaporation and downstream accounts in order to make projections of lake levels. (Waiting on the Bureau for downstream accounting reports in order to produce a complete analysis).

Director White requested a summary of the evaporation protocol for informational purposes.

General Manager, Ms. Gingras, noted the recommendation for Board approval from the Operations Committee to ratify the authorization of the full demobilization of the Emergency Pumping Facility and the resulting budgeted expenditures.

Director Morgan moved to approve the recommendation, seconded by Director White, which carried 6/0/1 as follows:

Ayes: Hanson, Holcombe, Morgan, White

Nays: None

Absent: Walsh

6. Resolution No. 629 Supporting Santa Barbara County's Proposal to the Governor's Drought Task Force

Ms. Gingras presented Resolution No. 629 supporting Santa Barbara County's proposal to the Governor's Drought Task Force for drought emergency crisis planning and submission of a proposed project list requesting assistance for funding.

Director Hanson moved to strike the line "*including some into a half-empty Lake Cachuma*" found in Resolution No. 629, paragraph 5.

Director Holcombe moved to approve Resolution No. 629 with one change, seconded by Director Morgan, the motion carried 6/0/1 as follows:

Ayes: Hanson, Holcombe, Morgan, White

Nayes: None

Absent: Walsh

7. Information on the Development of a Community Wildfire Protection Plan (CWPP) for San Marcos Pass and Eastern Goleta Valley Mountainous Areas

Mr. Scott Engblom, Project Biologist, presented information about wild fires in the area and how these fires impact the Lake Cachuma watershed. He spoke to the importance and benefits of the Community Wild Fire protection plan and the procedures and recommendations that are in place and the ongoing need for funding. Director White followed with his appreciation and the importance for the ongoing discussion on fire prevention. He recommended COMB staff continue the effort and contact Geo Elements for additional information regarding the developing CWPP.

8. Fish Passage Improvement Project – Quiota Creek Crossing 4 – Final Report

Mr. Robinson reviewed the Quiota Creek Crossing 4 Fish Passage Improvement Project and reported it was completed on December 21, 2016. He noted the crossing successfully held up through the recent large storms events. Mr. Robinson presented the final financial report to the Board. He discussed the requirement for submittal of record drawings and construction binders to the County of Santa Barbara, which is currently in the review process with the regulatory agencies (which may require additional encroachment permit fees).

9. General Manager Report

- Administration
- Personnel
- Financial
- Operations Division Activities
- Fisheries Division Activities

Ms. Gingras highlighted topics within her report as incorporated in the board packet, which included a preliminary budget process schedule for fiscal year 2017-18 and offered to field any comments or questions from the board.

Director Hansen inquired about the removal of the CCWA bypass line. Director Holcombe requested a place holder for the Member Agencies in regard to the budget review schedule. Ms. Kelly Dyer commented on the difficulty to project the budget due to the unknowns and requested some guidance as to whether to plan for a worse or better case scenario.

10. Operations Division Report

- Lake Cachuma Operations
- Operation and Maintenance Activities

In the absence of Mr. Stewart, General Manager, Janet Gingras, referred to the Operations Division report as included in the board packet, summarizing the division's tasks and objectives for the month and offered to address questions from the Board.

11. Fisheries Division Report

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

Mr. Robinson reviewed his report which was included in the board packet. He highlighted the increase in flow to Hilton Creek due to the recent storms, which sufficiently reached the LSYR Long Pool, but has since retreated. Mr. Robinson noted the completion of the beaver dam survey and provided an update to the tributary projects. Mr. Robinson offered to field any questions from the board.

12. Progress Report on Lake Cachuma Oak Tree Program

- Maintenance and Monitoring

Mr. Robinson gave a brief update on the status of the project, noting the need for removal of the large weeds in the area that compete with the Oak trees for water and sun. Mr. Robinson reported on the status of planting additional trees in the Lake Cachuma Park area.

13. Monthly Cachuma Project Reports

Ms. Gingras reviewed the monthly water reports, as included in the board packet.

14. Directors' Requests for Agenda Items for Future Meeting

No further requests were made.

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

The Board went into closed session at 3:46 p.m.

- 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

16. 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

The Board came out of closed session at 4:17 p.m. There were no reportable actions.

17. Meeting Schedule

- **March 27, 2017, 2:00 P.M.** at COMB Offices
- Board Packages Available on COMB Website www.cachuma-board.org

18. COMB Adjournment

There being no further business, the meeting adjourned at 4:18 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 February 28, 2017
UNAUDITED FINANCIALS

ASSETS

Current Assets

Checking/Savings

TRUST FUNDS

1210 · WARREN ACT TRUST FUND

895,869.52

1220 · RENEWAL FUND

63,087.61

Total TRUST FUNDS

958,957.13

1050 · GENERAL FUND

297,294.04

1100 · REVOLVING FUND

124,005.62

Total Checking/Savings

1,380,256.79

Accounts Receivable

1320 · Qrtly Assessments Receivable

747,374.00

1325 · Bank Loan Receivable - EPFP

77,241.69

Total Accounts Receivable

824,615.69

Other Current Assets

1010 · PETTY CASH

500.00

1200 · LAIF

815,416.43

1303 · Bradbury SOD Act Assmnts Rec

184,938.00

1304 · Lauro Dam SOD Assesmnt Rec

25,930.00

1400 · PREPAID INSURANCE

27,269.72

Total Other Current Assets

1,054,054.15

Total Current Assets

3,258,926.63

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

5,065,821.07

1920 · LT Lauro SOD Act Assess Rec

914,412.00

1922 · Deferred Outflows of Resources (GASB 68)

148,586.00

Total Other Assets

6,128,819.07

TOTAL ASSETS

9,593,655.00

COMB
Statement of Net Assets

As of February 28, 2017
UNAUDITED FINANCIALS

LIABILITIES & NET ASSETS

Liabilities

Current Liabilities

Accounts Payable

2200 · ACCOUNTS PAYABLE

550,791.75

Total Accounts Payable

550,791.75

Other Current Liabilities

Payroll-DepPrm Admin

105.00

Payroll-DepPrm FD

4.62

Payroll-DepPrm Ops

544.00

2505 · ACCRUED WAGES

37,117.79

2550 · VACATION/SICK

159,283.55

2561 · BRADBURY DAM SOD ACT

184,948.66

2563 · LAURO DAM SOD ACT

25,930.00

2565 · ACCRUED INTEREST SOD ACT

87,008.00

2567 · Loan Payable current EPFP

442,932.00

2590 · DEFERRED REVENUE

958,957.13

Total Other Current Liabilities

1,896,830.75

Total Current Liabilities

2,447,622.50

Long Term Liabilities

2602 · LT SOD Act Liability-Bradbury

5,065,811.07

2603 · LT SOD Act Liability - Lauro

914,412.00

2604 · OPEB LT Liability

907,923.00

2605 · Loan Payable - EPFP

1,430,350.88

2610 · Net Pension Liability (GASB 68)

1,160,030.00

2611 · Deferred Inflows of Resources (GASB 68)

224,052.00

Total Long Term Liabilities

9,702,578.95

Total Liabilities

12,150,201.45

NET POSITION

3000 · Opening Bal Equity

-1,357,356.05

3901 · Retained Net Assets

-631,271.21

Net Income

-567,919.19

Total Net Assets

-2,556,546.45

TOTAL LIABILITIES & NET POSITION

9,593,655.00

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

	Fisheries				Operations				TOTAL			
	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget
Income												
3000 REVENUE												
3001 · O&M Budget (Qtrly Assessments)	819,411.00	1,305,904.00	-486,493.00	62.75%	2,818,522.03	4,417,789.00	-1,599,266.97	63.8%	3,637,933.03	5,723,693.00	-2,085,759.97	63.56%
3006 · Warren Act	0.00	238,306.00	-238,306.00	0.0%	0.00				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	52,872.00	-52,872.00	0.0%
3009 · Pmts - Member Agencies - EPFP	0.00				688,950.48				688,950.48	0.00	688,950.48	100.0%
3010 · Interest Income	0.00				5,305.08				5,305.08	0.00	5,305.08	100.0%
3015 · Watershed Sanitary Survey	0.00				7,258.99				7,258.99	0.00	7,258.99	100.0%
3020 · Misc Income	0.00				200.00				200.00	0.00	200.00	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	-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	-938,295.00	0.0%
3035 · Cachuma Project Betterment Fund	77,517.78	90,000.00	-12,482.22	86.13%	0.00				77,517.78	90,000.00	-12,482.22	86.13%
3036 · Landowner Match-QC Crossing 0a	50,000.00				0.00				50,000.00	0.00	50,000.00	100.0%
Total 3000 REVENUE	946,928.78	3,297,012.00	-2,350,083.22	28.72%	3,520,236.58	4,417,789.00	-897,552.42	79.68%	4,467,165.36	7,714,801.00	-3,247,635.64	57.9%
Total Income	946,928.78	3,297,012.00	-2,350,083.22	28.72%	3,520,236.58	4,417,789.00	-897,552.42	79.68%	4,467,165.36	7,714,801.00	-3,247,635.64	57.9%
Gross Profit	946,928.78	3,297,012.00	-2,350,083.22	28.72%	3,520,236.58	4,417,789.00	-897,552.42	79.68%	4,467,165.36	7,714,801.00	-3,247,635.64	57.9%
Expense												
PAYROLL												
Gross	0.00				0.03				0.03	0.00	0.03	100.0%
Gross-FD	0.02				0.00				0.02	0.00	0.02	100.0%
Total PAYROLL	0.02				0.03				0.05	0.00	0.05	100.0%
3100 · LABOR - OPERATIONS	0.00				435,753.96	812,375.00	-376,621.04	53.64%	435,753.96	812,375.00	-376,621.04	53.64%
3200 VEH & EQUIPMENT												
3201 · Vehicle/Equip Mtce	0.00				30,572.32	30,000.00	572.32	101.91%	30,572.32	30,000.00	572.32	101.91%
3202 · Fixed Capital	0.00				3,048.74	15,000.00	-11,951.26	20.33%	3,048.74	15,000.00	-11,951.26	20.33%
3203 · Equipment Rental	0.00				934.66	5,000.00	-4,065.34	18.69%	934.66	5,000.00	-4,065.34	18.69%
3204 · Miscellaneous	0.00				2,868.98	5,000.00	-2,131.02	57.38%	2,868.98	5,000.00	-2,131.02	57.38%
Total 3200 VEH & EQUIPMENT	0.00				37,424.70	55,000.00	-17,575.30	68.05%	37,424.70	55,000.00	-17,575.30	68.05%
3300 · CONTRACT LABOR												
3301 · Conduit, Meter, Valve & Misc	0.00				24,980.84	20,000.00	4,980.84	124.9%	24,980.84	20,000.00	4,980.84	124.9%
3302 · Buildings & Roads	0.00				26,556.70	27,257.00	-700.30	97.43%	26,556.70	27,257.00	-700.30	97.43%
3302-1 · UF FY 15/16 Ortega Underdrain	0.00				0.00	-7,257.00	7,257.00	0.0%	0.00	-7,257.00	7,257.00	0.0%
3303 · Reservoirs	0.00				45,153.99	87,983.00	-42,829.01	51.32%	45,153.99	87,983.00	-42,829.01	51.32%
3303-1 · UF FY-15/16 Ortega Underdrain	0.00				0.00	-57,983.00	57,983.00	0.0%	0.00	-57,983.00	57,983.00	0.0%
3304 · Engineering, Misc Services	0.00				23,241.57	25,000.00	-1,758.43	92.97%	23,241.57	25,000.00	-1,758.43	92.97%
Total 3300 · CONTRACT LABOR	0.00				119,933.10	95,000.00	24,933.10	126.25%	119,933.10	95,000.00	24,933.10	126.25%
3400 · MATERIALS & SUPPLIES												
3401 · Conduit, Meter, Valve & Misc	0.00				1,476.20	65,000.00	-63,523.80	2.27%	1,476.20	65,000.00	-63,523.80	2.27%
3402 · Buildings & Roads	0.00				2,444.45	15,000.00	-12,555.55	16.3%	2,444.45	15,000.00	-12,555.55	16.3%
3403 · Reservoirs	0.00				1,652.07	10,000.00	-8,347.93	16.52%	1,652.07	10,000.00	-8,347.93	16.52%
Total 3400 · MATERIALS & SUPPLIES	0.00				5,572.72	90,000.00	-84,427.28	6.19%	5,572.72	90,000.00	-84,427.28	6.19%
3500 · OTHER EXPENSES												
3501 · Utilities	0.00				4,690.43	7,000.00	-2,309.57	67.01%	4,690.43	7,000.00	-2,309.57	67.01%
3502 · Uniforms	0.00				720.18	5,000.00	-4,279.82	14.4%	720.18	5,000.00	-4,279.82	14.4%
3503 · Communications	0.00				11,931.25	18,000.00	-6,068.75	66.29%	11,931.25	18,000.00	-6,068.75	66.29%
3504 · USA & Other Services	0.00				1,138.87	4,000.00	-2,861.13	28.47%	1,138.87	4,000.00	-2,861.13	28.47%
3505 · Miscellaneous	0.00				4,399.37	8,000.00	-3,600.63	54.99%	4,399.37	8,000.00	-3,600.63	54.99%
3506 · Training	0.00				1,350.76	3,000.00	-1,649.24	45.03%	1,350.76	3,000.00	-1,649.24	45.03%
Total 3500 · OTHER EXPENSES	0.00				24,230.86	45,000.00	-20,769.14	53.85%	24,230.86	45,000.00	-20,769.14	53.85%
4000 · Reconciliation Discrepancies	0.00				22.94				22.94	0.00	22.94	100.0%
4100 · LABOR - FISHERIES	428,699.76	623,119.00	-194,419.24	68.8%	0.00				428,699.76	623,119.00	-194,419.24	68.8%

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

	Fisheries				Operations				TOTAL			
	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget
4200 · VEHICLES & EQUIP - FISHERIES												
4270 · Vehicle/Equip Mtce	13,095.39	13,000.00	95.39	100.73%	0.00				13,095.39	13,000.00	95.39	100.73%
4280 · Fixed Capital	0.00	15,000.00	-15,000.00	0.0%	0.00				0.00	15,000.00	-15,000.00	0.0%
4290 · Miscellaneous	4,248.81	2,500.00	1,748.81	169.95%	0.00				4,248.81	2,500.00	1,748.81	169.95%
Total 4200 · VEHICLES & EQUIP - FISHERIES	17,344.20	30,500.00	-13,155.80	56.87%	0.00				17,344.20	30,500.00	-13,155.80	56.87%
4220 · CONTRACT LABOR - FISHERIES												
4221 · Meters & Valves	0.00	3,000.00	-3,000.00	0.0%	0.00				0.00	3,000.00	-3,000.00	0.0%
4222 · Fish Projects Maintenance	9,517.86	25,000.00	-15,482.14	38.07%	0.00				9,517.86	25,000.00	-15,482.14	38.07%
Total 4220 · CONTRACT LABOR - FISHERIES	9,517.86	28,000.00	-18,482.14	33.99%	0.00				9,517.86	28,000.00	-18,482.14	33.99%
4300 · MATERIALS/SUPPLIES - FISHERIES												
4390 · Miscellaneous	2,020.97	7,000.00	-4,979.03	28.87%	0.00				2,020.97	7,000.00	-4,979.03	28.87%
Total 4300 · MATERIALS/SUPPLIES - FISHERIES	2,020.97	7,000.00	-4,979.03	28.87%	0.00				2,020.97	7,000.00	-4,979.03	28.87%
4500 · OTHER EXPENSES - FISHERIES												
4502 · Uniforms	1,068.43	2,500.00	-1,431.57	42.74%	0.00				1,068.43	2,500.00	-1,431.57	42.74%
Total 4500 · OTHER EXPENSES - FISHERIES	1,068.43	2,500.00	-1,431.57	42.74%	0.00				1,068.43	2,500.00	-1,431.57	42.74%
4999 · GENERAL & ADMINISTRATIVE												
5000 · Director Fees												
5001 · Director Mileage	0.00				337.11	2,000.00	-1,662.89	16.86%	337.11	2,000.00	-1,662.89	16.86%
5000 · Director Fees - Other	0.00				4,825.60	11,000.00	-6,174.40	43.87%	4,825.60	11,000.00	-6,174.40	43.87%
Total 5000 · Director Fees	0.00				5,162.71	13,000.00	-7,837.29	39.71%	5,162.71	13,000.00	-7,837.29	39.71%
5100 · Legal	0.00				37,109.43	75,000.00	-37,890.57	49.48%	37,109.43	75,000.00	-37,890.57	49.48%
5101-1 · Audit	0.00				13,891.15	20,000.00	-6,108.85	69.46%	13,891.15	20,000.00	-6,108.85	69.46%
5150 · Unemployment Tax	0.00				0.00	5,000.00	-5,000.00	0.0%	0.00	5,000.00	-5,000.00	0.0%
5200 · Liability Insurance	0.00				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	0.00				5,310.64	5,000.00	310.64	106.21%	5,310.64	5,000.00	310.64	106.21%
5311 · Office Equip/Leases	0.00				5,183.12	8,000.00	-2,816.88	64.79%	5,183.12	8,000.00	-2,816.88	64.79%
5312 · Misc Admin Expenses	0.00				10,802.11	7,150.00	3,652.11	151.08%	10,802.11	7,150.00	3,652.11	151.08%
5313 · Communications	0.00				5,743.94	8,500.00	-2,756.06	67.58%	5,743.94	8,500.00	-2,756.06	67.58%
5314 · Utilities	0.00				5,279.98	9,737.00	-4,457.02	54.23%	5,279.98	9,737.00	-4,457.02	54.23%
5315 · Membership Dues	0.00				8,009.97	8,000.00	9.97	100.13%	8,009.97	8,000.00	9.97	100.13%
5316 · Admin Fixed Assets	0.00				1,933.98	3,000.00	-1,066.02	64.47%	1,933.98	3,000.00	-1,066.02	64.47%
5317 · Admin Contract Labor AAll	0.00				16,739.87	22,000.00	-5,260.13	76.09%	16,739.87	22,000.00	-5,260.13	76.09%
5318 · Computer Consultant	0.00				8,006.95	15,000.00	-6,993.05	53.38%	8,006.95	15,000.00	-6,993.05	53.38%
5325 · Emp Training/Subscriptions	0.00				1,161.06	2,000.00	-838.94	58.05%	1,161.06	2,000.00	-838.94	58.05%
5330 · Admin Travel/Conferences	0.00				873.91	2,000.00	-1,126.09	43.7%	873.91	2,000.00	-1,126.09	43.7%
5331 · Public Information	0.00				80.84	1,000.00	-919.16	8.08%	80.84	1,000.00	-919.16	8.08%
5391 · Admin Contract Labor AA I	0.00				9,671.09	19,600.00	-9,928.91	49.34%	9,671.09	19,600.00	-9,928.91	49.34%
Total 4999 · GENERAL & ADMINISTRATIVE	0.00				175,345.25	269,942.00	-94,596.75	64.96%	175,345.25	269,942.00	-94,596.75	64.96%
5299 · ADMIN LABOR	0.00				302,092.27	484,222.00	-182,129.73	62.39%	302,092.27	484,222.00	-182,129.73	62.39%
5400 · GENERAL & ADMIN - FISHERIES												
5407 · Legal - FD	7,127.70	20,000.00	-12,872.30	35.64%	0.00				7,127.70	20,000.00	-12,872.30	35.64%
5410 · Postage / Office Supplies	3,127.38	2,000.00	1,127.38	156.37%	0.00				3,127.38	2,000.00	1,127.38	156.37%
5411 · Office Equipment / Leases	2,790.84	5,218.00	-2,427.16	53.49%	0.00				2,790.84	5,218.00	-2,427.16	53.49%
5412 · Misc. Admin Expense	3,611.62	4,870.00	-1,258.38	74.16%	0.00				3,611.62	4,870.00	-1,258.38	74.16%
5413 · Communications	3,529.33	4,305.00	-775.67	81.98%	0.00				3,529.33	4,305.00	-775.67	81.98%
5414 · Utilities	2,843.04	5,243.00	-2,399.96	54.23%	0.00				2,843.04	5,243.00	-2,399.96	54.23%
5415 · Membership Dues	4,277.65	4,000.00	277.65	106.94%	0.00				4,277.65	4,000.00	277.65	106.94%
5416 · Admin Fixed Assets	1,041.38	3,000.00	-1,958.62	34.71%	0.00				1,041.38	3,000.00	-1,958.62	34.71%
5417 · Admin Contract Labor AAll	9,013.79	12,000.00	-2,986.21	75.12%	0.00				9,013.79	12,000.00	-2,986.21	75.12%
5418 · Computer Consultant	4,311.43	5,000.00	-688.57	86.23%	0.00				4,311.43	5,000.00	-688.57	86.23%
5425 · Employee Education/Subscription	1,158.47	2,500.00	-1,341.53	46.34%	0.00				1,158.47	2,500.00	-1,341.53	46.34%
5426 · Director Fees	2,598.40	6,000.00	-3,401.60	43.31%	0.00				2,598.40	6,000.00	-3,401.60	43.31%
5427 · Director Mileage	181.50	1,000.00	-818.50	18.15%	0.00				181.50	1,000.00	-818.50	18.15%

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

	Fisheries				Operations				TOTAL			
	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget	Jul '16 - Feb 17	Budget	\$ Over Budget	% of Budget
5430 · Travel	337.59	2,500.00	-2,162.41	13.5%	0.00				337.59	2,500.00	-2,162.41	13.5%
5431 · Public Information	543.53	1,500.00	-956.47	36.24%	0.00				543.53	1,500.00	-956.47	36.24%
5441 · Audt	7,479.85	6,300.00	1,179.85	118.73%	0.00				7,479.85	6,300.00	1,179.85	118.73%
5443 · Liab & Property Ins	21,745.50	24,745.00	-2,999.50	87.88%	0.00				21,745.50	24,745.00	-2,999.50	87.88%
5491 · Admin Contract Labor AA I	5,207.49	10,600.00	-5,392.51	49.13%	0.00				5,207.49	10,600.00	-5,392.51	49.13%
Total 5400 · GENERAL & ADMIN - FISHERIES	80,926.49	120,781.00	-39,854.51	67.0%	0.00				80,926.49	120,781.00	-39,854.51	67.0%
5499 · ADMIN LABOR-FISHERIES	112,273.66	202,112.00	-89,838.34	55.55%	-50.50				112,223.16	202,112.00	-89,888.84	55.53%
5510 · Integrated Reg. Water Mgt Plan	0.00				1,343.00	5,000.00	-3,657.00	26.86%	1,343.00	5,000.00	-3,657.00	26.86%
6000 · SPECIAL PROJECTS												
6062 · SCADA	0.00				2,525.92	20,000.00	-17,474.08	12.63%	2,525.92	20,000.00	-17,474.08	12.63%
6090 · COMB Office Building	0.00				97.00	150,000.00	-149,903.00	0.07%	97.00	150,000.00	-149,903.00	0.07%
6096 · SCC Structure Rehabilitation	0.00				0.00	240,000.00	-240,000.00	0.0%	0.00	240,000.00	-240,000.00	0.0%
6097 · GIS and Mapping	0.00				6,647.00	10,000.00	-3,353.00	66.47%	6,647.00	10,000.00	-3,353.00	66.47%
6100 · Watershed Sanitary Survey	0.00				35,481.20	35,481.20	0.00	100.0%	35,481.20	35,481.20	0.00	100.0%
6100-1a · Watershed Sanitary Survey-C/O	0.00				0.00	-35,481.20	35,481.20	0.0%	0.00	-35,481.20	35,481.20	0.0%
6105 · ROW Management Program	0.00				1,440.00	20,000.00	-18,560.00	7.2%	1,440.00	20,000.00	-18,560.00	7.2%
6109 · NP Jet Flow Control Valve	0.00				0.00	50,000.00	-50,000.00	0.0%	0.00	50,000.00	-50,000.00	0.0%
6111 · Mission Crk Pipe Temp Repair	0.00				0.00	50,000.00	-50,000.00	0.0%	0.00	50,000.00	-50,000.00	0.0%
6118 · Repair Lateral 3 Structure	0.00				18,804.25	100,000.00	-81,195.75	18.8%	18,804.25	100,000.00	-81,195.75	18.8%
6120 · Emergency Pumping Fac Project	0.00				1,454,267.13	2,160,374.00	-706,106.87	67.32%	1,454,267.13	2,160,374.00	-706,106.87	67.32%
6120-1 · EPPF UF FY 2015-16	0.00				0.00	-314,124.00	314,124.00	0.0%	0.00	-314,124.00	314,124.00	0.0%
6130 · NP Slope Stabilization	0.00				8,973.75	82,668.20	-73,694.45	10.86%	8,973.75	82,668.20	-73,694.45	10.86%
6130-1 · NP Slope Stabil C/O Funds FY 16	0.00				0.00	-82,668.20	82,668.20	0.0%	0.00	-82,668.20	82,668.20	0.0%
6131 · Lauro Diversion Valve Install	0.00				0.00	75,000.00	-75,000.00	0.0%	0.00	75,000.00	-75,000.00	0.0%
Total 6000 · SPECIAL PROJECTS	0.00				1,528,236.25	2,561,250.00	-1,033,013.75	59.67%	1,528,236.25	2,561,250.00	-1,033,013.75	59.67%
6200 · FISHERIES ACTIVITIES												
6201 · FMP Implementation	2,799.17	58,800.00	-56,000.83	4.76%	0.00				2,799.17	58,800.00	-56,000.83	4.76%
6202 · GIS and Mapping	3,047.00	10,000.00	-6,953.00	30.47%	0.00				3,047.00	10,000.00	-6,953.00	30.47%
6203 · Grants Technical Support	0.00	0.00	0.00	0.0%	0.00				0.00	0.00	0.00	0.0%
6204 · SYR Hydrology Technical Support	0.00	8,000.00	-8,000.00	0.0%	0.00				0.00	8,000.00	-8,000.00	0.0%
6205 · USGS Stream Gauge Program	65,462.50	77,000.00	-11,537.50	85.02%	0.00				65,462.50	77,000.00	-11,537.50	85.02%
6206 · Tri County Fish Team Funding	0.00	5,000.00	-5,000.00	0.0%	0.00				0.00	5,000.00	-5,000.00	0.0%
6207 · Oak Tree Restoration Program	9,314.69	80,000.00	-70,685.31	11.64%	0.00				9,314.69	80,000.00	-70,685.31	11.64%
Total 6200 · FISHERIES ACTIVITIES	80,623.36	238,800.00	-158,176.64	33.76%	0.00				80,623.36	238,800.00	-158,176.64	33.76%
6300 · HABITAT ENHANCEMENT												
6303 · Tributary Projects Support	12,066.40	20,000.00	-7,933.60	60.33%	0.00				12,066.40	20,000.00	-7,933.60	60.33%
6312 · Quiota Creek Crossing 0 (a&b)	578,425.82	840,000.00	-261,574.18	68.86%	0.00				578,425.82	840,000.00	-261,574.18	68.86%
6313 · Quiota Creek Crossing 3	527.00				0.00				527.00	0.00	527.00	100.0%
6314 · Quiota Creek Crossing 4	1,020,874.42	1,120,000.00	-99,125.58	91.15%	0.00				1,020,874.42	1,120,000.00	-99,125.58	91.15%
6315 · Quiota Creek Crossing 8	6,970.00	24,200.00	-17,230.00	28.8%	0.00				6,970.00	24,200.00	-17,230.00	28.8%
6316 · Quiota Creek Crossing 5	7,256.11	30,000.00	-22,743.89	24.19%	0.00				7,256.11	30,000.00	-22,743.89	24.19%
6317 · Salsipuedes Fish Ladder Repair	225.52	10,000.00	-9,774.48	2.26%	0.00				225.52	10,000.00	-9,774.48	2.26%
Total 6300 · HABITAT ENHANCEMENT	1,626,345.27	2,044,200.00	-417,854.73	79.56%	0.00				1,626,345.27	2,044,200.00	-417,854.73	79.56%
7007 · INTEREST EXPENSE-EPPF	0.00				46,359.95				46,359.95	0.00	46,359.95	100.0%
Total Expense	2,358,820.02	3,297,012.00	-938,191.98	71.54%	2,676,264.53	4,417,789.00	-1,741,524.47	60.58%	5,035,084.55	7,714,801.00	-2,679,716.45	65.27%
Net Income	-1,411,891.24	0.00	-1,411,891.24	100.0%	843,972.05	0.00	843,972.05	100.0%	-567,919.19	0.00	-567,919.19	100.0%

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

www.treasurer.ca.gov/pmia-laif/laif.asp
 March 15, 2017

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

February 2017 Statement

Effective Date	Transaction Date	Tran Type	Confirm Number	Authorized Caller	Amount
2/9/2017	2/8/2017	RW	1528655	JANET GINGRAS	-250,000.00

Account Summary

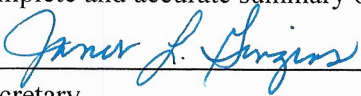
Total Deposit:	0.00	Beginning Balance:	1,065,416.43
Total Withdrawal:	-250,000.00	Ending Balance:	815,416.43

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 February, 2017, 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

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CACHUMA O&M BOARD

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 02/28/2017
LAST STATEMENT DATE 01/31/2017

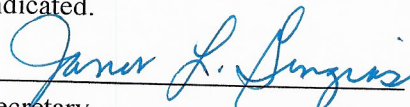
0	STATEMENT PERIOD	
PREVIOUS BALANCE	895,869.52	# OF DAYS-STMT PERIOD 28
0 DEPOSITS/CREDITS	0.00	
0 CHECKS/WITHDRAWALS	0.00	AVERAGE BALANCE 895,869.52
ENDING BALANCE	895,869.52	
TOTAL SRV CHG TODAY	0.00	YTD INTEREST 0.00

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 February, 2017, 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
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CACHUMA O&M BOARD

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

ACCOUNT ANALYSIS CHECKING

ACCOUNT NO
STATEMENT DATE 02/28/2017
LAST STATEMENT DATE 01/31/2017

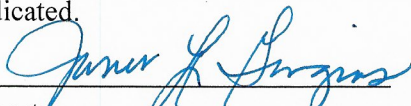
0	STATEMENT PERIOD	
PREVIOUS BALANCE	63,087.61	# OF DAYS-STMT PERIOD 28
0 DEPOSITS/CREDITS	0.00	
0 CHECKS/WITHDRAWALS	0.00	AVERAGE BALANCE 63,087.61
ENDING BALANCE	63,087.61	
TOTAL SRV CHG TODAY	0.00	YTD INTEREST 0.00

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 February, 2017, 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 February 28, 2017

<u>Date</u>	<u>Num</u>	<u>Name</u>	<u>Memo</u>	<u>Amount</u>
1050 - GENERAL FUND				
02/09/2017	25153	AT&T	Jan charges	-424.29
02/09/2017	25154	Bartlett, Pringle & Wolf, LLP	Audit services-FY 15/16	-5,475.00
02/09/2017	25155	City of Santa-Barbara	Trash/Recycle-Jan 2017	-218.67
02/09/2017	25156	Coastal Copy, LP	Mtce agmt TASKalfa 4550ci/3051ci	-511.02
02/09/2017	25157	Cox Communications Santa Barbara	Business internet-Jan	-195.00
02/09/2017	25158	Culligan of Sylmar	Monthly RO system-Feb	-26.95
02/09/2017	25159	ECHO Communications	Monthly answering service	-62.00
02/09/2017	25160	Employee Relations, Inc.	Background/Verification-(Admin/Ops/Fish Divisions)	-426.55
02/09/2017	25161	Frontier Communications	Main office/Outlying stations/SCADA	-590.29
02/09/2017	25162	Harwood White	Jan mtg fees	-264.95
02/09/2017	25163	Lauren W. Hanson	Jan mtg fees	-266.80
02/09/2017	25164	Musick, Peeler & Garrett LLP	General Counsel-Nov/Dec	-11,605.70
02/09/2017	25165	Nestle Pure Life Direct	Dec/Jan-5 gal disp. (PPE criteria)	-83.67
02/09/2017	25167	Polly Holcombe	Jan mtg fees	-286.55
02/09/2017	25168	Prudential Overall Supply	Mats/Scrapers-Jan	-100.56
02/09/2017	25169	Select Staffing	Admin Secretary/Admin Assistant II	-3,163.26
02/09/2017	25170	Southern California Edison	Main office/Outlying stations	-1,332.26
02/09/2017	25171	Staples Credit Plan	Office supplies	-392.10
02/09/2017	25172	Tri-County Locksmiths, Inc	Duplicate keys (Fish Div)	-51.72
02/09/2017	25173	Trenchalk Network Services, Inc.	IT Services for Jan	-1,368.50
02/09/2017	25174	Underground Service Alert of So. Calif.	54 Ticket charges (-2 new ticket credits) (Ops Div)	-78.00
02/09/2017	25175	W. Douglas Morgan	Jan mtg fees	-277.60
02/09/2017	25176	Wright Express Fleet Services	Fleet fuel	-2,131.89
02/09/2017	25177	O'Reilly Automotive, Inc.	Grease for Backhoe/ Oil container (Ops Div)	-21.77
02/09/2017	25178	Rauch Communication Consultants, Inc	Website mtce	-86.38
02/09/2017	25179	Select Staffing	Admin Secretary/Admin Assistant II	-2,969.77
02/21/2017	25180	American Riviera Bank (ARB)	Principal/Interest pymt #7-Feb	-38,477.96
02/21/2017	25181	American Water Works Association	Member Dues 4/1/17-3/31/18	-420.00
02/21/2017	25182	Association of Ca Water Agencies/JPIA	March Health Benefits coverage	-28,167.22
02/21/2017	25183	Bedrock Building Supplies	Sand bags for roads and buildings (Ops Div)	-45.26
02/21/2017	25184	County of Santa Barbara	Hazmat waste disposal (Ops Div)	-133.25
02/21/2017	25185	Farm Supply Company	Tree Stakes-Oak Tree program (Fish Div)	-828.56
02/21/2017	25186	Frontier Communications	SCADA	-567.92
02/21/2017	25188	MarBorg Industries	Portable toilets-outlying stations	-241.40
02/21/2017	25189	Paychex, Inc.	1/13/17, 1/27/17 payrolls/taxes/deliveries	-539.04
02/21/2017	25190	Praxair Distribution, Inc	Cylinder rental (acetylene for welder) (Ops Div)	-66.38
02/21/2017	25191	Santa Barbara Police Department	Annual Renewal-Security Alarm	-40.00
02/21/2017	25192	Select Staffing	Admin Secretary/Admin Assistant II	-2,979.85
02/21/2017	25194	Spatial Wave	Jan - Mar 2017 Field Mapplet Software mtce	-900.00
02/21/2017	25195	The Gas Company	Gas-main office	-69.86
02/21/2017	25196	Trenchalk Network Services, Inc.	Annual Renewal - PC License	-360.50
02/21/2017	25197	Underground Service Alert of So. Calif.	53 Ticket charges (Ops Div)	-79.50
02/21/2017	25198	Verizon Wireless	Cellular/Modem's/USB	-643.05
02/21/2017	25200	Harrison Hardware	Chain Link/Spring Snaps/Nails/Wire Rope/Studs/ Caulkgun Skeleton (Fish Div)	-61.03
02/21/2017	25201	HDR Engineering, Inc.	Engineering services-EPFP Jan/Feb	-16,163.17
02/21/2017	25202	SB Home Improvement Center	Spotlight/Epoxy (Fish Div) Poly Film-Qty 7 (Ops Div)	-200.10
02/21/2017	25203	Southern California Edison	Main office/outlying stations	-75.59
Total 1050 - GENERAL FUND				<u>-123,470.89</u>
TOTAL				<u>-123,470.89</u>

CACHUMA OPERATION & MAINTENANCE BOARD

Administrative Committee Meeting

3301 Laurel Canyon Road
Santa Barbara, CA 93105

Wednesday, March 22, 2017
1:00 p.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. COMB Draft Procurement Policy (*for information and possible recommendation*)
4. COMB Draft Policy Outline (*for information*)
5. Adjournment

NOTICE TO THE PUBLIC

Public Comment: The public is welcome to attend and observe the meeting. A public comment period will be included at the meeting where any member of the public may address the Committee on any subject within the Committee's jurisdiction. The total time for this item will be limited by the Chair.

Americans with Disabilities Act: In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Cachuma Operation & Maintenance Board (COMB) at 569-1391 at least 48 hours prior to the meeting to enable staff to make reasonable arrangements.

[This Agenda was posted at COMB offices, 3301 Laurel Canyon Road, Santa Barbara, CA and Noticed and Delivered in Accordance with Section 54954.1 and .2 of the Government Code.]

CACHUMA OPERATION AND MAINTENANCE BOARD

Policies and Procedures Manual Draft Outline

1. BOARD POLICY

- Purpose and Scope
- Responsibilities of Public Office
- Agency Government Vested In The Board of Directors And General Manager
- Functions of the Board
- Limitations Of Actions and Authority Of The Board
- Board Officers
- Committee Selection Process
- Responsibility of Committees
- Agenda Preparation and Distribution
- Fair and Equal Treatment
- Proper Use and Safeguarding of District Property and Resources
- Use of Confidential Information
- Conflict of Interest
- Violation of Ethics Policy
- Compliance with the Brown Act
- Incompatible Offices
- Structure of Agency Administration
- Board Member-General Manager Relationship
- Administrative Powers Vested In General Manager
- Appointment of General Counsel
- Improper Activities and the Reporting Such Activities; Protection of “Whistle Blowers”
- Board Members’ Compensation and Expense Reimbursement
- Changes in Compensation
- Ethics Policy

2. ADMINISTRATIVE POLICY

- Purpose and Scope
- Public Records Policy
- Records Retention and Disposal Policy
- Keys and Security of Agency Facilities and Equipment Policy
- Disposal of Surplus Property
- Statement of Investment Policy
- Financial Policy
- Administration of Contracts / Agreements

- Inventory Policy
- Risk Management Policy
- Harassment Policy
- Claims and Lawsuits
- Procurement Policy
- Travel Policy

3. OPERATIONS DIVISION ADMINISTRATIVE POLICY

- Purpose and Scope
- Shutdowns / Notifications
- Meters, Laterals, AVAR's, Blowoffs
- Property Owners Relations Policy
- Encroachment Permits and Agreements / ROW
- Cross-Connection Control Policy
- Fire Protection Policy
- Environmental, Health, and Safety Program
- Drought Response Policy And Procedures
- Equipment Policy
- Vehicle Operation and Maintenance Policy

4. FISHERIES DIVISION ADMINISTRATIVE POLICY

- Purpose and Scope
- Regular Biologist Personnel Training
- Seasonal Biologist Personnel Training
- Property Owners Relations Policy
- Fisheries Operations Policy
- Encroachment Permits and Landowners Agreements
- Fire Protection Policy
- Environmental, Health, and Safety Program
- Vehicle Operation and Maintenance Policy
- Equipment Policy
- Water Safety Policy

5. ENVIRONMENTAL / REGULATORY COMPLIANCE POLICY

- Purpose and Scope
- CEQA / NEPA Compliance
- Permitting Requirements
- Monitoring and Reporting Requirements

CACHUMA OPERATION & MAINTENANCE BOARD

Operations Committee Meeting

3301 Laurel Canyon Road
Santa Barbara, CA 93105

Wednesday, March 22, 2017
2:00 p.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. Long-Term Pumping Facility Alternatives Study – HDR Engineering, Inc. Presentation (*for information and possible recommendation*)
4. Adjournment

NOTICE TO THE PUBLIC

Public Comment: The public is welcome to attend and observe the meeting. A public comment period will be included at the meeting where any member of the public may address the Committee on any subject within the Committee's jurisdiction. The total time for this item will be limited by the Chair.

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CACHUMA OPERATION & MAINTENANCE BOARD

Fisheries Committee Meeting

3301 Laurel Canyon Road
Santa Barbara, CA 93105

Friday, March 24, 2017

10:00 AM

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. Quiota Creek Fish Passage Improvement Project Updates: *(for information and possible recommendation)*
 - Crossing 0A – Storm Impact Restoration Work
 - Crossing 5 – CDFW Grant Award
 - Crossing 8 – County of Santa Barbara Professional Services Agreement (PSA)
 - Crossing 9 – Request to Submit Grant Application
 - Remaining Quiota Creek Crossings
4. Annual Monitoring Reports Update (AMRs) *(for information)*
5. Adjournment

NOTICE TO THE PUBLIC

Public Comment: The public is welcome to attend and observe the meeting. A public comment period will be included at the meeting where any member of the public may address the Committee on any subject within the Committee's jurisdiction. The total time for this item will be limited by the Chair.

Americans with Disabilities Act: In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Cachuma Operation & Maintenance Board (COMB) at 569-1391 at least 48 hours prior to the meeting to enable staff to make reasonable arrangements.

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CACHUMA OPERATION & MAINTENANCE BOARD

BOARD MEMORANDUM

Date:	March 27, 2017
Presented by:	Edward Lyons
Approved by:	Janet Gingras

SUBJECT: **COMB Draft Procurement Policy**

SUMMARY:

The attached draft Procurement Policy is presented to the Board for review and consideration. The purpose of the policy is to provide an established guideline, define authorities, responsibilities, and set forth uniform procedures for the procurement of equipment, non-professional and professional services, supplies and formal bidding and contracting for COMB. This policy is intended to be included as a sub-section in a larger, comprehensive administrative and Board policy manual under development for this organization.

LEGAL CONCURRENCE:

Legal Counsel has reviewed the proposed Draft Procurement Policy.

COMMITTEE STATUS:

The Administrative Committee has reviewed and forwards the Draft Procurement Policy to the Board of Directors with a recommendation to approve.

RECOMMENDATION:

The Board of Directors approve the Procurement Policy as presented.

LIST OF EXHIBITS:

1. Draft Procurement Policy
2. Standard Purchase Order
3. Purchase Order Agreement
4. Purchase Order Agreement – Construction Work
5. Professional Services Agreement
6. Project Contract



**POLICY AND PROCEDURE
CACHUMA OPERATION & MAINTENANCE BOARD**

Approval Date:	POLICY TITLE	Policy No.: X.X
	PROCUREMENT POLICY	Page 1 of X

X.X PROCUREMENT POLICY

1. PURPOSE AND SCOPE

This procurement policy sets forth uniform procedures for the procurement of equipment, non-professional and professional services, supplies, and formal bidding and contracting for Cachuma Operation and Maintenance Board (COMB).

The objective of a procurement policy is to ensure timely, efficient, and cost effective procurement within the guidelines of good business practices and transparent public policy. Unless stated otherwise, the policy applies to all purchasing actions regardless of funding source and payment method. All procurements shall be reasonable and necessary. This policy applies to the procurement of equipment, services, and supplies using funds authorized for expenditure by the adopted annual budget.

2. AUTHORITY

The General Manager shall have the authority to approve expenditures made for official Agency business up to a maximum of \$25,000, provided such expenditures are within the budget, as adopted by the Agency. Purchases of equipment, services, or supplies exceeding \$25,000 shall be submitted, through the appropriate Committee, to the Board of Directors for review and approval. This expenditure authority limitation shall not apply to routine, recurring operational expenses already approved within the annual operating budget, such as salaries, benefits, insurance, legal and IT services.

Emergency expenditures, as defined in this policy, shall be subject to approval by the Board President and require that the full Board receive notification within 30 days of the expenditure being made.

3. GENERAL PROCUREMENT GUIDELINES

- A. Sufficient budgeted funds must be available for all procurements.
- B. Purchases of supplies, equipment, and non-professional services under \$5,000 require the advanced approval of the General Manager through a standard purchase order. Best judgement should be exercised by staff to obtain the lowest cost possible.
- C. Purchases of supplies, equipment, and non-professional services greater than \$5,000 and less than \$25,000, a minimum of two price quotes will be obtained and the General Manager has authority to select and approve the vendor which meets the best interests of the Agency.
- D. Purchases of supplies, equipment, and non-professional services greater than \$25,000 and less than \$50,000 shall require a minimum of two price quotes. Advance approval is required by both the General Manager and the Board of Directors.

- E. Purchases of equipment or contracted services in excess of \$50,000 and less than \$100,000 shall require an informal bidding process as defined in Section 8 of this policy. Advance approval is required by both the General Manager and the Board of Directors.
- F. Purchases of any kind greater than \$100,000 shall be subject to the formal, competitive bidding process as defined in Section 9 of this policy. Advance approval is required by both the General Manager and the Board of Directors.
- G. Procurement of construction contracts exceeding \$100,000 shall be competitively bid, except in the case that the General Manager executes the contract in response to an emergency.
- H. In some cases, due to compatibility, technical, and other reasons, COMB may be limited to a single, sole-source contractor or professional services provider. Where COMB intends to recommend a sole-source contract for approval, a written justification shall be provided, through the appropriate Committee, to the Board for consideration and approval.
- I. At the General Manager's discretion, any or all quotes presented may be rejected and additional quotations solicited.
- J. Dividing contracts into smaller, component contracts for the purpose of evading the provisions of this policy is prohibited. Contracts may only be divided to meet unique scheduling or other needs of a project such as the purchase of equipment with a long lead-time or to accommodate necessary time frames such as fiscal year budget constraints.
- K. Amendments increasing the purchase amount of a purchase order up to the authorized limit of \$25,000, in totality, require the authorization of the General Manager.
- L. Changes to contracts or purchase orders (under \$25,000 in totality) where the scope of work, completion date or dollar value is amended must be authorized by the General Manager and the party fulfilling the contract.
- M. Capital assets are land, buildings, related structures and systems, and other non-consumable equipment. Any capital asset expenditure in an amount of \$5,000 or more shall be capitalized and recorded to the appropriate capital asset account.

4. PROCUREMENT INSTRUMENTS

Four (4) procurement instruments are defined below and shall be utilized as follows: (1) Standard Purchase Orders, (2) Purchase Order Agreements (3) Professional Services Agreements, and (4) Project Contracts (Bid Contracts).

- A. **Standard Purchase Orders.** The standard Purchase Order is issued to procure office supplies, administrative supplies, equipment, and material items. Standard purchase orders are typically used for purchases not exceeding \$5,000. Purchases shall be made from vendors offering the best value in price, support services, and delivery procedures.

Standard Purchase Orders shall not be used for consultant services, subcontracts, travel expense advances/reimbursements, routine monthly or periodic bills (e.g., rent, telephone, utilities, equipment leases, and maintenance agreements), minor recurring expenses (e.g., courier services), nor items paid from petty cash. Standard Purchase Orders shall clearly describe the items(s) being purchased, the estimated purchase amount, the purpose or intended use of the goods if purchased, and the account to be

charged. Standard Purchase Orders shall be approved by both the applicable Division Manager and the General Manager prior to the order for supplies, materials, and/or equipment being administered.

- B. Purchase Order Agreements (POA) / Purchase Order Agreement – Construction Work (POAC).** Purchase Order Agreements constitute contracts for specialized services with consulting businesses, contractors or individuals. The Purchase Order Agreement specifies the scope of work, rate and terms of compensation, time period of performance, deliverables, and terms of the agreement. Purchase Order Agreements are typically used for purchases exceeding \$5,000. Two competitive proposals for consulting/contractor services must be obtained by the Division requesting the purchase, unless the necessary specialized expertise can be solely obtained from one business or individual. Any sole-source Purchase Order Agreement shall demonstrate the necessity for an exclusive agreement. Appropriate insurance documentation must also be obtained from the Consultant/Contractor prior to execution of the agreement. For procurement of specialized services exceeding \$25,000, prior authorization must be obtained from the Board of Directors.
- C. Professional Services Agreements (PSA).** A Professional Services Agreement (PSA) is an agreement between the agency and a professional service provider. Professional service providers are those entities that provide guidance, consultation, expert opinion, and/or technical expertise. Examples of professional service providers include accountants, architects, attorneys, designers, engineers, etc. Depending on the trade, these individuals may or may not hold professional licenses. Generally, Professional Services Agreements are agreements to procure consultant services for a scope of work within a fiscal year. Task Orders may be issued in conjunction with the Professional Services Agreements, and work is approved by the General Manager prior to implementation. Two competitive proposals shall be obtained, unless the specialized expertise necessary can solely be obtained from one business or individual. Any sole source Professional Services Agreement shall demonstrate the necessity for exclusivity. The General Manager is authorized to enter into Professional Services Agreements valued at less than \$25,000 without Board approval. Any Professional Services Agreements for an amount exceeding \$25,000 shall be approved by the Board. Before work commences or services are rendered, evidence of insurance, as required by the contract or service agreement, must be obtained, reviewed, and accepted by the Administrative Manager or the General Manager. Funding for all Professional Services Agreements shall be appropriated within the approved fiscal year budget
- D. Project Contracts (Bid Documents).** Project contracts within Bid Documents are contractual relationships for project-related services (Bid Documents). Project contracts shall be used when none of the other procurement instruments are appropriate and when the contract contains specific responsibilities for a major component of COMB's work. Generally, a project contract involves a dollar amount in excess of \$100,000 where each party is seeking terms and conditions that will protect both parties. The project contract should clearly describe the scope of work, the rate and terms of compensation, the period of performance, deliverables, and terms of the agreement. COMB's standard contract language shall generally be used in establishing project contracts. Procurement of contract services shall be competitively bid for an amount in excess of \$100,000.

The following tables summarize the controlling authority and requirements for the various levels of procurement:

Purchase of Supplies, Equipment, and Non-Professional Services

Amount	Procurement Instrument	Requirement	GM Approval	Board Approval
< \$5,000	Standard P.O.		Yes	No
\$5,000 - \$25,000	POA / POAC	Minimum of Two Quotes Required	Yes	No
\$25,000 - \$50,000	POA / POAC	Minimum of Two Quotes Required	Yes	Yes
\$50,000 - \$100,000	POA / POAC	Informal Bidding Process; Minimum of Two Quotes Required	Yes	Yes
> \$100,000	Project Contract	Competitive Bidding Process	Yes	Yes

Professional Services:

Amount	Procurement Instrument	Requirement	GM Approval	Board Approval
< \$25,000	PSA	Minimum of Two Quotes Required	Yes	No
> \$25,000	PSA	Minimum of Two Quotes Required	Yes	Yes

5. RISK TRANSFER

In order to minimize the potential liability exposure of the Agency, contracts and agreements with vendors for contracted services shall include appropriate risk transfer clauses as recommended by COMB’s liability and workers compensation insurance carrier, including performance bonds as necessary. Such language shall include the following:

- A. **Hold Harmless Provision** - a contract provision whereby the other party assumes legal responsibility for losses,
- B. **Indemnification Clause** - a contract provision whereby the other party assumes financial responsibility for losses, and
- C. **Insurance Requirements** - contract provisions which support the hold harmless and indemnification provisions, whereby the other party guarantees financial responsibility for loss exposures assumed.

COMB’s standard Requests for Proposals, Bid Specifications, Purchase/Work Orders, Professional Service Agreements and Project Contracts shall contain appropriate hold harmless, indemnification, and insurance requirement language. The hold harmless and indemnification clauses should be written so as to take effect upon execution of the contract.

In addition to a signed agreement or contract, COMB staff will request a Certificate of Insurance with an Additional Insured Endorsement. Where possible, staff will also request copies of the declaration page and/or endorsement page listing all policy endorsements for the General Liability policies in order to identify “restricted coverage” policies and any limitations or exclusions that have been added to the policy.

In special circumstances where the suggested insurance requirements are not appropriate, a higher limit may be in order. The deviation from the recommended limits depends on additional risks (exposures) of the project. In order to determine appropriate insurance limits and the extent to which risk transfer is necessary, COMB staff will evaluate the size of the job and the exposure to loss.

COMB staff will also put into place an internal Contract Management System to ensure proper follow up with contract requirements. The system will include a method to track signed contracts, termination terms, as well as insurance certificate renewals and follow up.

6. COUNSEL REVIEW

All contracts and agreements are to be approved as to form by COMB's Counsel prior to their execution. Approval as to form means that the contract accurately embodies the agreement made between the parties concerning the duties that are subject of the contract. Approval as to form can occur either through prior legal counsel review of standardized agreement, a signature on the Contract as to form, or transmittal of the approval via mail or email.

COMB's standard Purchase Order Agreements, Professional Service Agreements and Project Contracts have been reviewed and approved by Counsel as to form. Any deviation from the standard language contained therein shall require consent by Counsel prior to the contract being executed.

7. CHANGE IN WORK

The change in work policy generally follows the "Greenbook – Standard Specifications for Public Works Construction, Section 3 – Changes in Work", typically used by public agencies. In case of conflict between the Standard Specifications and Contract Provisions, the Contract Provisions shall prevail. Projects under construction require the execution of a change order to modify the engineering design requirements and/or scope of work on construction which results in an adjustment to the Contract Amount or Contract Time (time of construction).

A proposed change order will be considered:

- A. For changes in work required by COMB.
- B. When essential design/work has been inadvertently omitted or understated.
- C. To correct errors in plans and/or specifications.
- D. To correct engineering designs when field or project conditions are exposed and found to differ from that represented in the plans and specifications.
- E. When weather or other unavoidable events cause construction delays and additional time is needed for completion of the work.

Change orders shall be submitted in writing to COMB's Project or Engineering Manager by the Contractor in advance of the proposed work being performed by the Contractor. The General Manager, or designee, is authorized to approve change orders up to 10% above the total contract amount previously approved by the Board, or up to \$200,000, whichever is less. The General Manager, or designee, may not approve a single change order greater than 25% of the total authorized change order amount for projects over \$100,000.

- A. Change orders shall be consistent with and administered in accordance with procedures outlined in the Contract Documents.
- B. Change orders shall be prepared by the Contractor and accepted by the Construction Manager, General Manager, or COMB Board only in writing.

- C. The Contractor shall submit completed change orders with all required supporting documents to the General Manager or his/her designee for review and approval.
- D. If the Contractor and the Construction Manager cannot agree on a change order, the conflict will be referred to the General Manager for formal negotiation or be referred to the COMB Board. If the Contractor appeals COMB's decision, the Contractor must follow the appeals process that is contained in the Contract Documents. The COMB Board will make the final decision on any appeal that comes before the Board
- E. If the Contractor and COMB are unable to reach agreement on disputed work, COMB may direct the Contractor to proceed with the work. The amount of payment shall be determined by the dispute resolution procedure that is contained in the Contract Documents. The Contractor shall keep, furnish and certify, under penalty of perjury, the accuracy of all records of all disputed work.
- F. The project budget shall be adjusted following approval of a change order.
- G. The General Manager shall report all approved change orders to the Board at regularly scheduled Board meetings.
- H. Proposed change orders that exceed the General Manager's change order authorization require approval in advance by the COMB Board, except under extraordinary conditions as described above.

Proposed change orders that exceed the General Manager's approval authority require COMB Board approval in advance, except under extraordinary conditions described in the following section.

Extraordinary Conditions

During a major construction project, it is conceivable that a condition could develop that would necessitate immediate action on the part of the Project Manager in order to keep the project on schedule, meet various permit requirements, or prevent a costly delay. If such a condition should develop, a thorough investigation and recommendation from the Contractor will be obtained. If an action or decision is considered necessary by the Project or Engineering Manager before the next scheduled COMB Board meeting, the General Manager shall request a special Board meeting to seek approval of a change order in excess of change order policy authorization. Under extraordinary conditions, if an immediate decision is needed, the General Manager shall review the change order request with the Board President and take prompt action on the change order based on the decision. The change order request would be presented for ratification to the Board of Directors at a special Board Meeting or the next regular Board meeting.

8. PROCUREMENT OF WORK AND NON-PROFESSIONAL SERVICES AGREEMENTS (INFORMAL BIDDING)

- A. The General Manager is authorized to contract for Work (defined as the formation, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement) or Non-Professional services (defined as services that do not constitute Work and are not provided by a professional services provider) valued at \$25,000 or less without Board approval. Contracts for Work or Non-Professional services agreements valued at or above \$25,000 must be approved by the Board.
- B. Where practical, quotations/proposals shall be obtained from a minimum of two separate firms or entities, unless the General Manager, or his/her designee, deems otherwise. The qualifications, proposed service, approach, and schedule of reasonable fees and charges are to be considered during the vendor selection process.

- C. Before work commences or services are rendered, evidence of insurance as required by the contract or service agreement, must be obtained, reviewed, and accepted by the Administrative Manager or the General Manager.
- D. Funding for all Work and Non-Professional Services Agreements shall be designated within the approved fiscal year budget.
- E. A complete file including the selected proposal and an executed Contract shall be filed with the Administrative Manager / CFO prior to the commencement of work. The summary documentation of the informal bidding process shall include:
 - The number of providers contacted,
 - The name of each respondent,
 - The amount of each quotation received,
 - An explanation of material differences in quotations, if any,
 - An explanation of why the lowest responsible bid was not selected, if applicable.

9. COMPETITIVE BIDDING AND CONTRACTING

Under applicable authority and law, COMB is not required to use the competitive bidding process. However, in the interest of transparency, COMB has elected to follow the open and competitive procurement process.

The General Manager shall follow the procurement process set forth in this policy. Any special circumstance not covered in this policy shall be subject to approval by the Board of Directors. In addition, prior prequalification procedures may be utilized before initiating the formal bidding process.

- A. Contracts for work valued at \$100,000 or more shall be approved by the Board of Directors and subjected to the formal competitive bidding procedures, unless the Board of Directors determines that (i) an exemption exists, or (ii) such bidding is impractical.
- B. Per COMB's current policy, the General Manager, or designee, is authorized to approved change orders up to 10% above the total contract amount previously approved by the Board or up to \$200,000, whichever is less. Requests for expenditure authority exceeding either the 10% change order limitation or \$200,000 shall require prior approval of the Board of Directors.
- C. Contracts for emergency work in excess of \$25,000 may be approved by the General Manager. In the event of an emergency, the General Manager or his/her designee may make, without restrictions, any purchase(s) necessary to respond to the emergency. An "emergency" is defined as any occurrence or situation which is posing a real and immediate hazard to public health or safety. Any purchase of this type will be fully disclosed to the President of the Board immediately, and then at the next scheduled meeting of the Board of Directors and, if applicable, submitted to the Board for consideration of approval or ratification.

10. REQUESTS FOR QUALIFICATIONS (RFQ) / REQUESTS FOR PROPOSALS (RFP)

All aspects of a competitive bid process will be confidential and discussed only among authorized staff. All factors affecting the evaluation of a Request for Proposals (RFP) response shall be identified in a formal RFP. RFPs shall be written, using the standard COMB RFP template, to include objective standards which can be consistently applied to respondents, including but not

limited to, prior experience, knowledge, capability, performance, location, and other relevant factors.

The RFP should include, but not be limited to the following:

- Request to submit a sealed bid a public opening on a specific date.
- Terms and conditions of the project.
- Services or goods to be provided.
- The proposed contract form and all required exhibits and amendments.
- Other relevant information, as may be deemed necessary and/or required by COMB.
- A signed non-collusion affidavit

Clear and demonstrated effort shall be made to solicit responses from at least three potential respondents. No firm shall be excluded from receiving an RFP package and submitting a proposal, unless a designated pre-qualification process has taken place.

The Contracting Manager shall create a memorandum of the RFP's distribution that documents the following information:

- Executive summary, describing the project scope.
- The estimated cost for the project (or project component that is the subject of the RFP).
- The firms selected to receive the RFP.

The Board of Directors will authorize the award of contracts made pursuant to the competitive bidding process.

COMB may disqualify any RFP respondent for any of the following grounds:

- A written notice of failure to perform was issued to the respondent on a contract previously awarded in the last five years.
- A contract termination notice or performance penalty imposed by the Agency on the respondent in the course of the execution of a previously awarded contract.
- Failure to meet the qualification standards outlined in the RFP.
- Failure to submit a proposal that is responsive to the requirements outlined in the RFP.
- A response that includes an unreasonably low bid which does not permit the General Manager to make a sound determination that the respondent can meet the performance standards outlined in the RFP.
- Response is inadequate to specific directions and requests contained in the RFP.

A notice of disqualification will be issued in writing to the respondent, signed by the General Manager. The notice will contain the facts and circumstances considered in making the determination to disqualify the respondent, and shall advise the respondent of their right, if any, to the appeal the General Manager's determination to the Board of Directors.

If a low bidder is disqualified, the notice must indicate the respondent has five days to appeal the disqualification by filing a request in writing. If not appealed in a timely manner, the contract may be awarded to the next lowest bidder.

11. EXCEPTIONS TO THE PURCHASING REQUISITION PROCEDURE

A. EMERGENCY PROCUREMENT

For this purpose, "Emergency" means a sudden, unexpected, natural or manmade occurrence that poses a clear and imminent danger, requiring action to prevent or mitigate the loss or impairment of life, health, property or essential public services (including breakdown of vital machinery, conditions that would significantly interrupt department functions). An emergency purchase includes any situation which makes competitive bidding impractical, not in the best interest of COMB, and/or poses a threat to public safety.

Emergency procurements shall be limited to those services, construction or items of personal tangible property necessary to meet the emergency.

Under an emergency situation and when an immediate decision is needed, the General Manager shall review the emergency procurement with the Board President and take action based on their decision. The General Manager will then seek ratification by the full Board within 30 days. Further, a written determination of the basis for the emergency procurement shall be included in the procurement file.

The General Manager may request bids for emergency contract services and recommend up to three contractors for a particular service type (i.e. engineering, construction, etc.) for Board approval. Contracts shall be no longer than three years in term. Once approved, the General Manager may contract with any of the approved contractors for emergency repair services throughout the term of the contract.

B. PROCUREMENT FROM OTHER THAN LOWEST COST VENDOR

While it is the desire of the Board of Directors to purchase supplies and services at the least cost to the Agency, there may be instances when the award of a purchase to other than the lowest cost vendor produces greatest value and is in the best interest of COMB. Staff should strive to:

- maximize the value received,
- use sources which will be responsive to the needs and timeliness of COMB,
- seek commonality in major equipment to minimize inventory and training costs.

C. PROCUREMENT OF SOLE SOURCE WORK

"Sole Source Work" shall refer to any work which the Board determines can only be obtained from a single contractor or vendor, and for which competitive bidding is therefore impossible or not in the public interest, such that no competitive advantage can be gained by soliciting bids. When sole source contracting appears the appropriate procurement for the Agency, the General Manager or designee shall prepare a justification report to the Board, itemizing the reasons for a sole source contract. Upon review, the Board will make the final determination regarding a sole source procurement contract.

D. PETTY CASH

The basic premise for petty cash purchases is that it is less expensive and/or more convenient to pay for small, non-repetitive purchases with cash than with a check.

The maximum petty cash expenditure is \$200.00; any request over \$200.00 must be approved by the General Manager or his/her designee.

E. AGENCY CREDIT CARD

The General Manager or designee may authorize certain employees to make purchases using an agency credit card. These purchases require establishing a purchase order, a copy of the invoice or receipt routed to the accounting department, and the purchase order's approval by the General Manager.

F. MISCELLANEOUS MEALS, MILEAGE AND OTHER EXPENSE REPORT

An employee may be required to use a private vehicle for COMB business. In such occurrence the employee must receive permission from the General Manager in advance. The employee must provide COMB with a copy of a current valid California driver's license and proof of insurance. COMB will reimburse the employee at the rate set forth by the IRS for business use of an automobile.

For meals, mileage and miscellaneous costs not directly attributable to conferences or training, such as travel to off-site meetings, should be recorded on a Travel Reimbursement Request form.

G. OPEN CHARGE ACCOUNT SYSTEM

Open Charge Accounts are established by the Administration Department and a vendor (i.e. local hardware / garden supply store). These accounts are designed to allow departments to purchase items on account by designated personnel.

When a purchase is made from an Open Charge Account vendor, the signed invoice or receiving slip, with an appropriate account number is submitted to the Accounts Payable department for processing. Purchases using the Open Charge Account are limited to \$500. Any purchase greater than \$500 requires a Purchase Order.

12. INTERNAL CONTROLS

The General Manager shall establish a system of internal controls that provide an audit trail for all purchases and provide transparency in the procurement process including the following controls:

- more than one person to be involved in each transaction, end-to-end,
- provide for prior approval of purchases with a purchase order,
- require certification of receipt of material, and
- result in reconciliation of the purchase order with the invoice and final payment.

13. REPORTING

The General Manager will submit to the Board, on a quarterly basis, an informational report of all contracts executed by the General Manager for that period. The summary report will contain the following information:

- Vendor Name
- Contract Description
- Date Executed
- Date Expires
- Contract Amount

14. CONFLICT AVOIDANCE

Goods or services shall not be procured from:

- members of the Board of Directors or COMB employees,
- vendors that are related to Board members or COMB employees,
- vendors in which Board members or employees have a financial interest.

15. DISPOSITION OF OBSOLETE/SURPLUS PROPERTY

The General Manager is authorized to dispose of Agency surplus equipment and machinery, once it appears that the equipment or machinery will not be required for future use and the salvage value of each surplus equipment or machinery item does not exceed \$25,000. The surplus property shall be disposed of, in exchange for adequate and reasonable consideration. Surplus equipment and machinery with a salvage value exceeding \$25,000 shall be disposed of in a manner approved by the Board on a case-by-case basis.

EXHIBIT 2
STANDARD PURCHASE ORDER

EXHIBIT 3
PURCHASE ORDER AGREEMENT

PURCHASE ORDER AGREEMENT

CACHUMA OPERATION & MAINTENANCE BOARD

3301 Laurel Canyon Road
Santa Barbara, CA 93105-2017
Telephone (805) 687-4011 - FAX (805) 569-5825

Important terms of this **Purchase Order-Agreement** are printed on the following pages. For your protection, make sure that you read and understand all provisions before signing. The terms and conditions are incorporated in this document and will constitute a part of the contract between the parties when signed.

TO: [Vendor Name]
[Vendor Address]
[Vendor City, State, Zip]
[Vendor Phone / Fax]
Email:

Date:
P.O. #:

The undersigned Supplier offers to provide _____ per the attached Quotation, Condition of Sales and Addendum and according to the delivery terms as stated below.

Contract price: \$_____ (Price includes fabrication, material, tax & freight costs)

Delivery and Oversight Installation date: The week of _____ (Deadline _____)

Instructions: Please sign and return both originals along with the proper insurance documentation as outlined in this agreement. Upon acceptance by the Cachuma Operation and Maintenance Board, a copy will be signed and promptly returned to you. Insert below the names of your authorized on-site representatives.

Accepted: Cachuma Operation & Maintenance Board

Consultant:

By: _____
Title: General Manager

(Business Name)

By: _____

Title: _____

Other authorized representatives:

On-site representatives:

COMB PURCHASE ORDER

AGREEMENT

Workers' Compensation Insurance - By his/her signature hereunder, Supplier certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this agreement.

Indemnification - Supplier agrees, to the fullest extent permitted by law, to indemnify and hold COMB, its directors, officers, employees, or authorized volunteers harmless from any direct damage (not including liquidated, punitive, incidental or consequential), liability, or cost (including attorney's fees and costs of defense) to the extent caused by Supplier's negligent acts, errors or omissions in the performance of services under this agreement including sub-suppliers or others for whom Supplier is legally liable.

COMB agrees, to the fullest extent permitted by law, to indemnify and hold Supplier, its directors, officers, employees, or authorized volunteers harmless from any direct damage (not including liquidated, punitive, incidental or consequential), liability, or cost (including attorney's fees and costs of defense) to the extent caused by COMB's negligent acts, errors, or omissions arising from work that is subject to this agreement provided, however, that this indemnity shall not apply to any acts, errors, or omissions attributable to Supplier or its sub-suppliers, or others for whom Supplier is legally liable.

Neither party's obligation to indemnify shall be restricted to any insurance proceeds.

GENERAL CONDITIONS

Laws, Regulations and Permits - The Supplier shall give all notices required by law and comply with all laws, ordinances, rules and regulations pertaining to the conduct of the work, including transportation and delivery of the equipment. The Supplier shall be liable for all violations of the law in connection with work furnished by the Supplier. If the Supplier observes that the drawings or specifications are at variance with any law or ordinance, rule or regulation, he/she shall promptly notify the COMB engineer in writing and any necessary changes shall be made by written instruction or change order. If the Supplier performs any work knowing it to be contrary to such laws, ordinances, rules or regulations and without giving notice to the COMB engineer, the Supplier shall bear all costs arising therefrom.

Safety - The Supplier shall execute and maintain his/her work so as to avoid injury or damage to any person or property. The Supplier shall comply with the requirements of the specifications relating to safety measures applicable in particular operations or kinds of work.

In carrying out his/her work, the Supplier shall at all times exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed, and be in compliance with all applicable federal, state and local statutory and regulatory requirements including California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act. Safety precautions, as applicable, shall include but shall not be limited to: adequate life protection and life saving equipment; adequate illumination; instructions in accident prevention for all employees, such as the use of machinery guards, safe walkways, scaffolds, fall protection, ladders, bridges, gang planks, confined space procedures, trenching and shoring, and other safety devices; equipment and wearing apparel as are necessary or lawfully required to prevent accidents, injuries, or illnesses; and adequate facilities for the proper inspection and maintenance of all safety measures.

Commercial General Liability and Automobile Liability Insurance - The Supplier at its cost shall provide and maintain at all times during the performance of this agreement, the following commercial general liability and automobile liability insurance:

Coverage - Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001)
2. Insurance Services Office (ISO) Business Automobile Liability Coverage (Form CA 0001), covering Symbol 1 (any auto)

Limits - The Supplier shall maintain limits no less than the following:

1. General Liability - One million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2503, or ISO CG 2504, or insurer's equivalent endorsement provided to COMB) or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability – Five Hundred thousand dollars (\$500,000) for bodily injury and property damage each accident limit.

Required Provisions - The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. COMB, its directors, officers, employees or authorized volunteers are to be given insured status (via ISO endorsement CG 2010, CG 2033, or insurer's equivalent for general liability coverage) as respects: liability arising out of the activities performed by or on behalf of the Supplier; products and completed operations of the Supplier; premises owned, occupied or used by the Supplier; and automobiles owned, leased, hired or borrowed by the Supplier. The coverage shall contain no special limitations on the scope of protection afforded to COMB, its directors, officers, employees, or authorized volunteers.
2. For any claims related to the project, the Supplier's insurance shall be primary insurance as respects to COMB, its directors, officers, employees, or authorized volunteers. Any insurance, self-insurance, or other insurance coverage maintained by COMB, its directors, officers, employees, or authorized volunteers shall not contribute to it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to COMB, its directors, officers, employees, or authorized volunteers.
4. The Supplier's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5. Each insurance policy required by this agreement shall state, or be endorsed to state, that coverage shall not be canceled by the insurance carrier or the Supplier, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to COMB.

Such liability insurance shall indemnify the Supplier and his/her sub-suppliers against loss from liability imposed by law upon, or assumed under contract by, the Supplier or his/her sub-suppliers for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation, and removal of lateral support.

The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

All of the insurance shall be provided on policy forms and through companies satisfactory to COMB.

Acceptability of Insurers - Insurance is to be placed with insurers having met current A.M. Best rating of no less than A-VII or equivalent or as otherwise approved by COMB.

Workers' Compensation and Employer's Liability Insurance - The Supplier and all sub-suppliers shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the "*Workers' Compensation and Insurance Act*," Division IV of the Labor Code of the State of California and any Acts amendatory thereof. The Supplier shall provide employer's liability insurance in the amount of, at least, \$1,000,000 per accident for bodily injury and disease.

Responsibility for Work – Until the completion and delivery of product under and implied by this agreement, the work shall be under the Supplier's responsible care and charge. The Supplier shall rebuild, repair, restore and make good all injuries, damages, re-erectments, and repairs occasioned or rendered necessary by causes of any nature, except those beyond the Supplier's control.

The Supplier shall waive all rights of subrogation against COMB, its directors, officers, employees, or authorized volunteers.

Evidences of Insurance - Prior to execution of the agreement, the Supplier shall file with COMB a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative and evidence of waiver of rights of subrogation against COMB (if builder's risk insurance is applicable). Such evidence shall also include confirmation that coverage includes or has been modified to include Required Provisions 1-5.

The Supplier shall, upon demand of COMB, deliver to COMB such policy or policies of insurance and the receipts for payment of premiums thereon.

Continuation of Coverage – If any of the required coverages expire during the term of this agreement, the Supplier shall deliver the renewal certificate(s) including the general liability additional insured endorsement and evidence of waiver of rights of subrogation against COMB (if builder's risk insurance is applicable) to COMB at least ten (10) days prior to the expiration date.

Sub-Suppliers - In the event that the Supplier employs other consultants (sub-consultants) as part of the services covered by this Agreement, it shall be the Supplier's responsibility to require and confirm that each sub-consultant meets the minimum insurance requirements specified above.

Authorized Representatives - Supplier shall not accept direction or orders from any person other than the General Manager or the person(s) whose name(s) is (are) inserted on the reverse as "other authorized representative(s)."

Payment Terms - Upon completion of work as listed in the COMB Purchase Order payment, unless otherwise specified in this agreement, is to be 30 days after delivery of material.

Guarantee - The Supplier hereby guarantees that the entire work constructed and/or performed by him under this Agreement will meet fully all requirements thereon as to quality of workmanship and of materials furnished by him.

Permits - All permits required by governmental authorities will be obtained at COMB's expense, and Supplier will comply with local, state and federal regulators and statutes including the Cal/OSHA requirements.

Changes to Work, Method, Cost, etc. - Any change in the scope of the work to be done, method of performance, nature of materials or price thereof, to any other matter materially affecting the performance of nature of the work will not be paid for or accepted unless such change, addition or deletion be approved in advance, in writing by a supplemental purchase order executed by COMB. Supplier's "on-site representatives" have the authority to execute such written change for Supplier.

Termination of or Default on Contract - If the Supplier abandons the work, or fails to proceed with the work as rapidly as required by this Agreement, COMB may declare him in default and relet the work in the manner set forth by law for letting the original Agreement, or it may complete the work by direct purchase of labor and materials.

This COMB Purchase Order/Agreement shall become a valid contract only when accepted by Supplier, and subsequently by COMB, and together with the Supplier's Quotation dated _____ (# of pages) shall constitute the entire agreement between the parties. If any provision of the Supplier Quotation (including the quotation, conditions of sale and addendum) conflict with this document, the provisions of this document shall prevail notwithstanding anything to the contrary in the Supplier Quotation.

EXHIBIT 4

PURCHASE ORDER AGREEMENT – CONSTRUCTION WORK

PURCHASE ORDER – CONSTRUCTION WORK

CACHUMA OPERATION & MAINTENANCE BOARD

3301 Laurel Canyon Road
Santa Barbara, CA 93105-2017
Telephone (805) 687-4011 - FAX (805) 569-5825

Important terms of this **Purchase Order – Construction Work** are printed on the following pages. For your protection, make sure that you read and understand all provisions before signing. The terms and conditions are incorporated in this document and will constitute a part of the contract between the parties when signed.

TO: _____ **DATE:** _____

_____ **P.O. #:** _____

Cachuma Operation & Maintenance Board (“COMB”) retains Contractor, and Contractor agrees to perform the following work per its attached proposal (incorporated herein) dated _____.

[INSERT BRIEF DESCRIPTION OF WORK]

Contract price: _____ (Time and Materials)(Maximum Not-to-Exceed))

Completion date: _____

Instructions: Please sign and return both originals along with appropriate insurance documentation. Upon acceptance by the Cachuma Operation and Maintenance Board, a copy will be signed and promptly returned to you. Insert below the names of your authorized on-site representatives.

Accepted: **Cachuma Operation & Maintenance Board, a joint powers agency**

Contractor:

(Business Name)

By: _____

By: _____

Title: General Manager

Title: _____

Other authorized representatives:

On-site representatives:

**CACHUMA OPERATION & MAINTENANCE BOARD
PURCHASE ORDER – CONSTRUCTION WORK
TERMS AND CONDITIONS**

Scope of Construction Work - Contractor shall diligently undertake and perform the construction work described in its proposal referenced above. At all times during the term of this Agreement, Contractor shall maintain in good standing the contractor(s) license(s) required by the State of California for the work to be performed in accordance with this Agreement.

Term of Agreement - Unless otherwise earlier terminated as specified elsewhere herein, this Agreement shall commence on the date first set forth above, and shall expire on the completion date set forth above.

Authorized Representatives - Contractor shall not accept direction or orders from any person other than COMB's General Manager or any COMB authorized representative(s) listed on the signature page hereto.

Payment Terms - COMB shall pay Compensation to Contractor on a time and material reimbursement basis for a maximum not-to-exceed amount of _____ Dollars (\$_____) in accordance with Contractor's proposal referenced above. COMB shall pay Consultant within thirty (30) days after receipt of Consultant's invoice(s), with the exception of any disputed amount(s) which may be withheld until resolution of the dispute. If there exists or may exist a claim against Contractor or COMB arising out of the negligence or intentional acts of Contractor or Contractor's material breach of any provision of this Agreement, then COMB may withhold payment of any amount payable to Consultant which is directly related to such negligence or breach. No payment made pursuant to this Agreement shall be conclusive evidence of Contractor's performance of the agreement, either wholly or in part, and no payment shall be construed to be an acceptance of Contractor's work.

Changes To Work, Method, Cost, etc. - Any change in the scope of work, method of performance, nature of materials or price thereof, or any other matter materially affecting the performance or nature of the work, will not be paid for or accepted unless such change, deletion or addition is approved in advance, in writing, or by a supplemental or amended change order executed by COMB's General Manager or authorized representative listed hereto.

Independent Contractor - The parties, in the performance of services under this Agreement, will be acting in an independent contractor relationship and not as agents, employees, or partners of one another. It is the express intention of the parties that Contractor is an independent contractor and not COMB's employee; and that the employees of Contractor, and Contractor's subcontractors and their respective employees, are not COMB employees and are not entitled to any of the rights, benefits or privileges attributable to COMB employees. Contractor shall have control of the means, methods and details of performance of its work and services and shall only be subject to the general direction and supervision of COMB's General Manager or other authorized representative as set forth above to ensure the results contracted for are achieved.

Termination of Agreement - During its term, this Agreement may be sooner terminated by written notice of termination as follows:

A. By either party, in the event the defaulting party fails to cure a material breach of this Agreement within five (5) days of receipt of a written notice from the non-defaulting party of such material breach.

B. By COMB, without cause and without penalty or cost to COMB, immediately upon written notice, given in the sole discretion of COMB's General Manager or authorized representative. Termination without cause does not excuse COMB's obligation to compensate Contractor for work performed up until termination.

C. In the event of termination as provided in this section, COMB without penalty may relet the work to another Contractor or perform such work itself.

Indemnification - To the fullest extent permitted by law, Contractor shall defend, indemnify and hold COMB and its Governing Board members, officers, employees and agents, from and against:

A. Any and all claims, damages, lawsuits, actions, costs, expenses, losses or liabilities, including reasonable attorneys' and experts' fees and costs incurred in litigation (hereinafter collectively "claims"), in law or equity, of every kind or nature whatsoever, but not limited to injury or death of any person or damage to or the destruction of any property of any person, including COMB, its Governing Board members, officers, employees, or agents, or Contractor or its employees or its subcontractors or their employees, arising out of or in any manner directly or indirectly related to the work to be performed under this Agreement, however caused, except and only to the extent caused by the active negligence, sole negligence or willful misconduct of COMB, its Governing Board members, officers, employees or agents.

B. Any and all actions, proceedings, damages, costs, expenses, penalties, fines, or liabilities, in law or equity, of every kind and nature whatsoever, arising out of, resulting from, or on account of any violation of any applicable federal, state or local governmental law or regulation, compliance with which is Contractor's responsibility.

C. Submission of insurance certificates or other proof of insurance shall not relieve Contractor from liability under these provisions. Contractor's indemnification obligations herein shall apply whether or not Contractor's insurance policies shall have been determined to apply to any such claims. These indemnification obligations shall survive the expiration or termination of this Agreement.

Laws, Regulations and Permits – Contractor, at its expense, shall give all notices and (unless otherwise provided herein) obtain all permits for the work required by law, and comply with all applicable laws, ordinances, rules and regulations pertaining to the conduct of the work. Contractor shall be liable for all violations of the law in connection with work furnished by Contractor. If Contractor observes that any drawings or specifications are at variance with any law or ordinance, rule or regulation, he/she shall promptly notify COMB General Manager or authorized representative in writing and any necessary changes shall be made by written instruction or change order. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations and without giving notice to the COMB General Manager or authorized representative, Contractor shall bear all costs arising therefrom.

Safety - Contractor shall execute and maintain his/her work so as to avoid injury or damage to any person

or property. Contractor shall comply with the requirements of the specifications relating to safety measures applicable in particular operations or kinds of work. Contractor shall designate, in writing, a responsible representative at the worksite whose duty shall be the prevention of accidents, and the maintenance and supervision of safety precautions and programs. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor.

In carrying out his/her work, Contractor shall at all times exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed, and be in compliance with all applicable federal, state and local statutory and regulatory requirements including California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act. Safety precautions, as applicable, shall include but shall not be limited to: adequate life protection and life saving equipment; first aid; adequate illumination; instructions in accident prevention for all employees, such as the use of machinery guards, safe walkways, scaffolds, fall protection, ladders, bridges, gang planks, confined space procedures, trenching and shoring, and other safety devices; equipment and wearing apparel as are necessary or lawfully required to prevent accidents, injuries, or illnesses; and adequate facilities for the proper inspection and maintenance of all safety measures.

Contractor shall be responsible for the safeguarding of all utilities. At least two working days before beginning work, Contractor shall call the Underground Service Alert (USA) in order to determine the location of sub-structures. Contractor shall immediately notify COMB and the utility owner if he/she disturbs, disconnects, or damages any utility.

In accordance with Section 6705 of the California Labor Code, Contractor shall submit to COMB specific plans to show details of provisions for worker protection from caving ground during excavations of trenches of five feet or more in depth. The excavation/trench safety plan shall be submitted to and accepted by COMB prior to starting excavation. The trench safety plan shall have details showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such a plan varies from the shoring system standards established by the Construction Safety Orders of the California Department of Industrial Relations (Cal/OSHA), the plan shall be prepared by a California registered civil or structural engineer. As part of the plan, a note shall be included stating that the registered civil or structural engineer certifies that the plan complies with the Cal/OSHA Construction Safety Orders, or that the registered civil or structural engineer certifies that the plan is not less effective than the shoring, bracing, sloping or other provisions of the Safety Orders. In no event shall Contractor use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders. Submission of the plan in no way relieves Contractor of the requirement to maintain safety in all areas. If excavations or trench work requiring a Cal/OSHA permit are to be undertaken, Contractor shall submit his/her permit with the excavation/trench work safety plan to COMB before work begins.

Contractor shall also comply with the provisions of California Public Contract Code Section 7104, which pertains to the digging of trenches or other excavations extending deeper than four feet below the surface and the discovery of hazardous waste or subsurface or unknown latent physical conditions differing materially from those ordinarily encountered. The provisions of Section 7104 are incorporated by reference herein as if set forth in full.

Pursuant to California Labor Code Section 6708, each Contractor and subcontractor shall maintain or

make available adequate emergency first aid treatment for its employees, agents and representatives, sufficient to comply with the Federal Occupational Safety & Health Act (P.L. 91-596; OSHA). The names and telephone numbers of at least two medical doctors practicing in the vicinity and the telephone number of the local ambulance service shall be prominently displayed adjacent to telephones.

Safety Measures and Public Convenience - Contractor shall provide for the protection of all persons and property as herein specified. Attention is called to “Construction Safety Orders: and General Safety Orders” of the California State Industrial Accident Commission to which Contractor is required by law to conform.

Commercial General Liability and Automobile Liability Insurance - Contractor shall provide and maintain at all times during the performance of this agreement, the following commercial general liability and automobile liability insurance:

Coverage - Coverage for commercial general liability and automobile liability insurance shall be at least as broad as the following:

1. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001)
2. Insurance Services Office (ISO) Business Automobile Liability Coverage (Form CA 0001), covering Symbol 1 (any auto)

Limits - The Contractor shall maintain limits no less than the following:

1. General Liability - One million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2503, or ISO CG 2504, or insurer’s equivalent endorsement provided to COMB) or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability - One million dollars (\$1,000,000) for bodily injury and property damage each accident limit.

Required Provisions - The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. COMB, its Governing Board members, officers, employees and agents are to be given insured status (via ISO endorsement CG 2010, CG 2033, or insurer’s equivalent for general liability coverage) as respects: liability arising out of the activities performed by or on behalf of Contractor; products and completed operations of the Contractor; premises owned, occupied or used by Contractor; and automobiles owned, leased, hired or borrowed by Contractor. The coverage shall contain no special limitations on the scope of protection afforded to COMB, its Governing Board members, employees, or agents.

2. For any claims related to the work, Contractor's insurance shall be primary insurance as respects COMB, its Governing Board members, officers, employees, or agents. Any insurance, self-insurance, or other coverage maintained by COMB, its Governing Board members, officers, employees, or agents shall not contribute to it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to COMB, its Governing Board members, officers, employees, or agents.
4. Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this Agreement shall state, or be endorsed to state, that coverage shall not be canceled by the insurance carrier or Contractor, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to COMB.

Such liability insurance shall indemnify Contractor and his/her subcontractors against loss from liability imposed by law upon, or assumed under contract by, Contractor or his/her subcontractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation, and removal of lateral support.

The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

All of the insurance shall be provided on policy forms and through companies satisfactory to COMB.

Deductibles and Self-Insured Retentions - Any deductible or self-insured retention must be declared to and approved by COMB. At the option of COMB, the insurer shall either reduce or eliminate such deductibles or self-insured retentions as respects COMB, its Governing Board members, officers, employees and agents; or Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Acceptability of Insurers - Insurance is to be placed with insurers having met current A.M. Best rating of no less than A-:VII or equivalent or as otherwise approved by COMB.

Workers' Compensation Insurance - By his/her signature hereunder, Contractor certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this Agreement.

Workers' Compensation and Employer's Liability Insurance - Contractor and all subcontractors shall insure (or be a qualified self-insured) under the applicable laws relating to workers' compensation insurance, all of their employees working on or about the construction site, in accordance with the "*Workers' compensation and Insurance Act*," Division IV of the Labor Code of the State of California and any Acts amendatory thereof. Contractor shall provide employer's liability insurance in the amount of, at least, \$1,000,000 each accident, \$1,000,000 disease policy limit, and \$1,000,000 disease each employee.

Responsibility for Work - Until the completion and final acceptance by COMB of all the work under and implied by this Agreement, the work shall be under Contractor's responsible care and charge. Contractor shall rebuild, repair, restore and make good all injuries, damages, re-erections, and repairs occasioned or rendered necessary by causes of any nature, except those beyond Contractor's control.

Contractor shall waive all rights of subrogation against COMB, its Governing Board members, officers, employees, and agents.

Evidences of Insurance - Prior to execution of the agreement, Contractor shall file with COMB a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this Agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative and evidence of waiver of rights of subrogation against COMB (if builder's risk insurance is applicable). Such evidence shall also include confirmation that coverage includes or has been modified to include Required Provisions 1-5.

Contractor shall, upon demand of COMB, deliver to COMB such policy or policies of insurance and the receipts for payment of premiums thereon.

Continuation of Coverage - If any of the required coverages expire during the term of this Agreement, Contractor shall deliver the renewal certificate(s) including the general liability additional insured endorsement and evidence of waiver of rights of subrogation against COMB (if builder's risk insurance is applicable) to COMB at least ten (10) days prior to the expiration date.

Subcontractors - In the event that (with COMB's approval) Contractor employs other contractors (subcontractors) as part of the work covered by this Agreement, it shall be Contractor's responsibility to require and confirm that each subcontractor meets the minimum insurance requirements specified above.

Notices - All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given on the date of service if personally served or on the second day after mailing if mailed by first-class mail, registered or certified, return receipt requested, postage prepaid and properly addressed to the signatories of the parties as set forth above. Any party may change their address for the purpose of this paragraph by giving the other party written notice of the new address in the above manner.

Anti-Discrimination - Consultant shall not exclude from its employment in the performance of this Agreement any person on the grounds of race, creed, color, sex, age, marital status, sexual orientation or place of national origin. Consultant shall comply with all applicable local, state and federal laws relating to equal employment opportunity rights.

Subcontractors and Assigns; Subcontracting - Contractor shall not assign this Agreement, or utilize subcontractors in the performance of the work, without the written consent of COMB's General Manager. COMB may withhold such consent in its sole discretion.

No Waiver - No failure by COMB in asserting any of its rights or remedies as to any default of Contractor shall operate as a waiver of the default, or any subsequent or other default by Contractor, or of any of COMB's rights or remedies. No such delay shall deprive COMB of its right to institute and maintain any actions or proceedings which may be necessary to protect, assert, or enforce any rights or remedies arising out of this Agreement or the performance thereof.

Partial Invalidity - If any term, covenant, condition or provision of this Agreement is found by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions herein shall remain in full force and effect and shall not be affected, impaired or invalidated thereby.

Integration - No alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the parties. No oral understanding or agreement not incorporated herein shall be binding on any of the parties.

California Law - This Agreement shall be interpreted and construed pursuant to the laws of the State of California. Any dispute between the parties shall be filed and heard in a court of competent jurisdiction in the County of Santa Barbara.

COMB Employees - Contractor agrees that no employee of COMB shall be employed by Contractor during the period this Agreement is in effect.

Guarantee - Contractor hereby guarantees that the entire work constructed and/or performed by him under this Agreement will meet fully all requirements thereon as to quality of workmanship and of materials furnished by him. If COMB notifies Contractor of any defects in quality of workmanship or materials within one (1) year following the completion of work, Contractor at its expense, with no charge to COMB, shall repair such work and/or replace such materials.

Payment Bond – If required by law, Contractor shall furnish to COMB a payment bond, in a form satisfactory to COMB, from a surety insurer admitted in California. Premiums for the payment bond shall be compensable to Contractor (without markup).

This document shall become a valid contract only when accepted by Contractor, and subsequently by COMB, and together with the Contractor's Proposal and/or Sample Work Reports shall constitute the entire agreement between the parties.

EXHIBIT 5
PROFESSIONAL SERVICES AGREEMENT

PROFESSIONAL SERVICES AGREEMENT

CACHUMA OPERATION & MAINTENANCE BOARD

3301 Laurel Canyon Road
Santa Barbara, CA 93105-2017
Telephone (805) 687-4011 - FAX (805) 569-5825

Important terms of this **Professional Services Agreement** are printed on the following pages. For your protection, make sure that you read and understand all provisions before signing. The terms and conditions are incorporated in this document and will constitute a part of the contract between the parties when signed.

TO: _____

DATE: _____

Cachuma Operation & Maintenance Board (“COMB”) retains _____ (Consultant), and Consultant agrees to provide services per its attached proposal (incorporated herein) dated _____.

Contract price: \$_____ (Time and Materials, Maximum Not-to-Exceed)

Completion date: _____

Instructions: Please sign and return both originals along with the appropriate insurance documentation. Upon acceptance by the Cachuma Operation & Maintenance Board, a copy will be signed by its authorized representative and promptly returned to you. Insert below the names of your authorized representatives.

Accepted: Cachuma Operation & Maintenance Board, a joint powers agency

Consultant:

(Business Name)

By: _____
Title: General Manager

By: _____
Title:

Other authorized representatives:

On-site representatives:

CACHUMA OPERATION & MAINTENANCE BOARD

PROFESSIONAL SERVICES AGREEMENT

TERMS AND CONDITIONS

Scope of Services - Consultant shall provide professional services to COMB, in accordance with its attached proposal, in a diligent and professional manner. Consultant warrants that its services shall be performed, within the limits prescribed by COMB, in a manner consistent with the level of care and skill ordinarily exercised by other professionals in similar circumstances at the time its services are performed. The services to be provided by Consultant generally involve consulting services for

Task Orders - If Consultant proposes to engage in one or more separate Task Orders, then the parties shall approve each such Task Order with a mutually-agreed upon scope of work attached as Exhibit "A" thereto. Each Task Order shall include a description of the services to be performed by Consultant, a maximum not-to-exceed cost to complete the services, the schedule for performance, and other terms and conditions the parties deem appropriate. No Task Order shall be binding or enforceable unless and until it has been properly approved and executed by both parties. Each properly executed Task Order shall become a separate supplemental agreement to this Agreement, and subject to all of the terms of this Agreement unless otherwise noted in the Task Order. It is agreed that the parties are not required pursuant to this Agreement to enter into a minimum number of, or any, Task Orders.

Term of Agreement - Unless otherwise earlier terminated as specified elsewhere herein, this Agreement shall commence on the date first set forth above, and shall expire on the completion date set forth above.

Authorized Representatives - Consultant shall not accept direction or orders from any person other than COMB's General Manager or any COMB authorized representative(s) listed on the signature page hereto.

Payment Terms -

A. Consultant shall provide professional services on a time and materials basis, in accordance with Consultant's fees and costs schedule attached to its proposal or Task Order, for the maximum not-to-exceed amount stated herein or in the Task Order. The maximum not-to-exceed amount shall include all fees, costs and expenses to be paid to Consultant.

B. Invoices shall be submitted to COMB on a monthly basis. Invoices shall include the categories of Consultant's employees who perform services, the number of hours spent performing services, a description of the services, the hourly rate for each employee and the total compensation earned for that month. Upon COMB's request, Consultant shall include with the invoice a detailed verification, including accounting records and employee time records, of the work actually performed and costs incurred.

C. COMB shall pay Consultant within thirty (30) days after receipt of Consultant's invoices, with the exception of any disputed amount(s) which may be withheld until resolution of the dispute. If COMB has reasonable grounds for believing that Consultant will be unable to materially perform the services under this Agreement or any Task Order, or there exists or may exist a claim against Consultant or COMB arising out of the negligence or intentional acts of Consultant or Consultant's material breach of any provision of this Agreement, then COMB may withhold payment of any amount payable to Consultant which is directly related to such negligence or breach.

D. No payment made pursuant to this Agreement shall be conclusive evidence of Consultant's performance of the Agreement, either wholly or in part, and no payment shall be construed to be an acceptance of Consultant's work.

Changes To Work, Method, Cost, etc. - Any change in the scope of work, method of performance, nature of materials or price thereof, or any other matter materially affecting the performance or nature of the work, will not be paid for or accepted unless such change, deletion or addition is approved in advance, in writing, or by a supplemental or amended Task Order executed by COMB's General Manager or authorized representative listed hereto.

Independent Contractor - The parties, in the performance of services under this Agreement, will be acting in an independent contractor relationship and not as agents, employees, or partners of one another. It is the express intention of the parties that Consultant is an independent contractor and not COMB's employee; and that the employees of Consultant, and any of Consultant's sub-consultants and their respective employees, are not COMB employees and are not entitled to any of the rights, benefits or privileges attributable to COMB employees. Consultant shall have control of the means, methods and details of performance of its work and services and shall only be subject to the general direction and supervision of COMB's General Manager or other authorized representative as set forth above to ensure the results contracted for are achieved.

Writings And Reports - Consultant agrees that no drafts, writings, reports, records, notes, data, work product, graphics, lists, images, information or communications (collectively "writings") developed, prepared or assembled by Consultant pursuant to this Agreement, or any information made available to Consultant by COMB, shall be revealed, disseminated, or made available by Consultant to any third party without the prior written consent of COMB, unless otherwise required by subpoena or applicable law.

Termination of Agreement -

A. Termination Without Cause. COMB at any time may terminate this Agreement or any Task Order for any reason, without cause and without penalty, upon providing to Consultant thirty (30) days' prior written notice of such termination. Such termination shall not relieve COMB from responsibility for payment for services rendered by Consultant prior to the date of termination, but shall relieve COMB of its obligations for full payment of compensation due under this Agreement or a Task Order for Consultant's services rendered after the notice of termination.

B. Termination With Cause. COMB may terminate this Agreement or any Task Order for cause, effective immediately upon providing written notice to Consultant, based upon the occurrence

of any of the following events: (1) material breach of this Agreement, Task Order or Task by Consultant; (2) abandonment or lack of diligence in performance of the work by Consultant; (3) cessation, revocation or expiration of any license needed by Consultant to provide services hereunder; (4) failure of Consultant to substantially comply with any federal, state or local law or regulation applicable to the work hereunder; (5) filing by or against Consultant of any petition under any law for relief of debtors; and (6) conviction of Consultant or its principal representative or personnel of any crime other than minor traffic offenses.

C. Reletting of Work. In the event of termination as provided in this section, COMB without penalty may relet the work to another Consultant or perform such work itself.

Completed Work - In the event of completion or early termination of this Agreement, Consultant shall at COMB's request promptly surrender and turn over to COMB all completed work, work in progress, and all writings (as defined in the preceding paragraph) developed, prepared, assembled or acquired by Consultant during the performance of its services hereunder. Consultant may retain copies of its work product as a part of Consultant's record of professional activity. COMB acknowledges that its use of any incomplete work shall be at its own risk.

Examination of Records - Consultant agrees that COMB shall have access to and the right to examine at any reasonable time and on reasonable notice Consultant's writings, documents, papers and records, including accounting records, relating to or involving this Agreement.

Indemnification - To the fullest extent permitted by law, Consultant shall defend, indemnify and hold COMB and its Governing Board members, officers, employees and agents from and against:

A. When the law establishes a professional standard of care for Consultant's services, all claims, damages, lawsuits, actions, costs, expenses, losses or liabilities (including reasonable attorneys' fees and costs incurred in litigation) (hereinafter collectively "claims") of any persons which arise out of, pertain to, or relate to the negligence, recklessness or willful misconduct of Consultant, or its sub-consultants or others for whom Consultant is legally liable, in the performance (or actual or alleged nonperformance) or services under this Agreement. Consultant shall defend itself against any and all claims arising out of or alleged to arise out of Consultant's performance or nonperformance of work hereunder, and shall not tender such claims to COMB or its Governing Board members, officers, employees or agents.

B. Other than in the performance of professional services, all claims arising out of the performance of services or furnishing of materials, including but not limited to claims by the Consultant or its employees or sub-consultants or their employees for damages to persons or property, except for the sole negligence or willful misconduct or active negligence of COMB, its Governing Board members, officers, employees or agents.

C. All actions, proceedings, damages, costs, expenses, penalties, fines, or liabilities, in law or equity, of every kind and nature whatsoever, arising out of, resulting from, or on account of any violation of any applicable federal, state or local governmental law or regulation, compliance with which is Consultant's responsibility.

D. Submission of insurance certificates or other proof of insurance shall not relieve Consultant from liability under these provisions. Consultant's indemnification obligations herein shall apply whether or not Consultant's insurance policies shall have been determined to apply to any such claims. These indemnification obligations shall survive the expiration or termination of this Agreement or any Task Order.

Laws, Regulations and Permits – Consultant, at its expense, shall give all notices and obtain all permits required by law and comply with all laws, ordinances, rules and regulations pertaining to the conduct of the work. Consultant shall be liable for all violations of the law in connection with work furnished by Consultant. If Consultant observes that the drawings or specifications are at variance with any law or ordinance, rule or regulation, he/she shall promptly notify the COMB engineer in writing and any necessary changes shall be made by written instruction or change order. If Consultant performs any work knowing it to be contrary to such laws, ordinances, rules or regulations and without giving notice to COMB, Consultant shall bear all costs arising therefrom.

Safety - Consultant shall execute and maintain his/her work so as to avoid injury or damage to any person or property. In carrying out his/her work, Consultant shall at all times exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions or requirements under which the work is to be performed, and shall be in compliance with all applicable federal, state and local statutory and regulatory requirements including California Department of Industrial Relations (Cal/OSHA) regulations.

Liability Insurance - Consultant shall provide and maintain at all times during the performance of the services under this agreement, the following commercial general liability, professional liability and automobile liability insurance:

Coverage - Coverage shall be at least as broad as the following:

- a. Coverage for Professional Liability appropriate to the Consultant's profession covering Consultant's negligent actions, errors or omissions. The retroactive date (if any) is to be no later than the effective date of this agreement.
- b. Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 0001) or insurer's equivalent.
- c. Insurance Services Office (ISO) Business Auto Coverage (Form CA 0001), covering Symbol 1 (any auto).

Limits - The Consultant shall maintain limits no less than the following:

1. Professional Liability - One million dollars (\$1,000,000) per claim and annual aggregate.
2. General Liability - One million dollars (\$1,000,000) per occurrence for bodily injury, personal injury and property damage. If Commercial General

Liability Insurance or other form with a general aggregate limit or products-completed operations aggregate limit is used, either the general aggregate limit shall apply separately to the project/location (with the ISO CG 2503 or ISO CG 2504, or insurer's equivalent endorsement provided to COMB or the general aggregate limit and products-completed operations aggregate limit shall be twice the required occurrence limit.

3. Automobile Liability - One million dollars (\$1,000,000) for bodily injury and property damage each accident limit.

Required Provisions - The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. COMB, its Governing Board members, officers, employees and agents are to be given insured status (via ISO endorsement CG 2010, CG 2033, or insurer's equivalent for general liability coverage) as respects: liability arising out of the activities performed by or on behalf of Consultant; products and completed operations of Consultant; premises owned, occupied or used by the Consultant; and automobiles owned, leased, hired or borrowed by Consultant. The coverage shall contain no special limitations on the scope of protection afforded to COMB, its Governing Board members, officers, employees, or agents.
2. For any claims related to the project, Consultant's insurance shall be primary insurance as respects COMB, its Governing Board members, officers, employees, or agents. Any insurance, self-insurance, or other coverage maintained by COMB, its Governing Board members, officers, employees, or agents shall not contribute to it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to COMB, its Governing Board members, officers, employees, or agents.
4. Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this agreement shall state, or be endorsed to state, that coverage shall not be canceled by the insurance carrier or Consultant, except after thirty (30) days (10 days for non-payment of premium) prior written notice by U.S. mail has been given to COMB.

Such liability insurance shall indemnify Consultant and his/her sub-consultants against loss from liability imposed by law upon, or assumed under contract by, Consultant or his/her sub-consultants for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

The general liability policy shall cover bodily injury and property damage liability, owned and non-owned equipment, blanket contractual liability, completed operations liability, explosion, collapse, underground excavation, and removal of lateral support.

The automobile liability policy shall cover all owned, non-owned, and hired automobiles.

All of the insurance shall be provided on policy forms and through companies satisfactory to COMB.

Deductibles and Self-Insured Retentions - Any deductible or self-insured retention must be declared to and approved by COMB.

Acceptability of Insurers - Insurance is to be placed with insurers having met current A.M. Best rating of no less than A-:VII or equivalent or as otherwise approved by COMB.

Workers' Compensation Insurance - By his/her signature hereunder, Consultant certifies that he/she is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and he/she will comply with such provisions before commencing the performance of the work of this agreement.

Workers' Compensation and Employer's Liability Insurance - Consultant and all sub-consultants shall cover or insure under the applicable laws relating to workers' compensation insurance, all of their employees employed directly by them or through sub-consultants in carrying out the work contemplated by this Agreement or any Task Order, in accordance with the "*Workers' Compensation and Insurance Act*," Division IV of the Labor Code of the State of California and any Acts amendatory thereof. Consultant shall provide employer's liability insurance in the amount of at least \$1,000,000 per accident, \$1,000,000 disease policy limit, and \$1,000,000 disease each employee.

Evidences of Insurance - Prior to execution of the agreement, Consultant shall file with COMB a certificate of insurance (Acord Form 25-S or equivalent) signed by the insurer's representative evidencing the coverage required by this Agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative. Such evidence shall also include confirmation that coverage includes or has been modified to include Required Provisions 1 through 5.

Consultant shall, upon demand of COMB, deliver to COMB such policy or policies of insurance and the receipts for payment of premiums thereon.

Continuation of Coverage – If any of the required coverages expire during the term of this Agreement, Consultant shall deliver the renewal certificate(s) including the general liability additional insured endorsement to COMB a least ten (10) days prior to the expiration date.

Sub-consultants - In the event that Consultant employs other consultants (sub-consultants) as part of the services covered by this Agreement, it shall be Consultant's responsibility to require and confirm

that each sub-consultant meets the minimum insurance requirements specified herein.

Notices - All notices, requests, demands and other communications under this Agreement shall be in writing and shall be deemed to have been duly given on the date of service if personally served or on the second day after mailing if mailed by first-class mail, registered or certified, return receipt requested, postage prepaid and properly addressed to the signatories of the parties as set forth above. Any party may change their address for the purpose of this paragraph by giving the other party written notice of the new address in the above manner.

Anti-Discrimination - Consultant shall not exclude from its employment in the performance of this Agreement any person on the grounds of race, creed, color, sex, age, marital status, sexual orientation or place of national origin. Consultant shall comply with all applicable local, state and federal laws relating to equal employment opportunity rights.

No Assignment - This Agreement is for personal services. Consultant shall not assign its duties or obligations hereunder without the prior written consent of COMB, which may be withheld by COMB for any reason in its sole discretion.

No Waiver - No failure by COMB in asserting any of its rights or remedies as to any default of Consultant shall operate as a waiver of the default, or any subsequent or other default by Consultant, or of any of COMB's rights or remedies. No such delay shall deprive COMB of its right to institute and maintain any actions or proceedings which may be necessary to protect, assert, or enforce any rights or remedies arising out of this Agreement or the performance thereof.

Partial Invalidity - If any term, covenant, condition or provision of this Agreement is found by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions herein shall remain in full force and effect and shall not be affected, impaired or invalidated thereby.

Integration - No alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the parties. No oral understanding or agreement not incorporated herein shall be binding on any of the parties.

California Law - This Agreement shall be interpreted and construed pursuant to the laws of the State of California. Any dispute between the parties shall be filed and heard in a court of competent jurisdiction in the County of Santa Barbara.

COMB Employees - Consultant agrees that no employee of COMB shall be employed by Consultant during the period this Agreement is in effect.

This Professional Services Agreement shall become a valid contract only when accepted by Consultant, and subsequently by COMB, and together with the Consultant's Proposal shall constitute the entire agreement between the parties, with the terms, conditions and definitions set forth in this eight-page document governing and controlling the enforcement of that contract.

EXHIBIT 6
PROJECT CONTRACT (BID DOCUMENTS)

**CACHUMA OPERATION AND
MAINTENANCE BOARD**



3301 Laurel Canyon Road
Santa Barbara, CA 93015

DATE .

CONSTRUCTION COST PROPOSAL AND SUPPORTING DOCUMENTS FOR

DUE AT THE COMB OFFICE
3301 LAUREL CANYON ROAD ON

Month / Day / Year at Time AM/PM

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SECTION A - PROPOSAL INFORMATION & DOCUMENTS

SECTION A1 – INVITATION TO SUBMIT CONSTRUCTION COST PROPOSAL (BID)
FOR THE
(Project Name)
FOR THE CACHUMA OPERATION & MAINTENANCE BOARD
SANTA BARBARA COUNTY, CALIFORNIA

The Cachuma Operation & Maintenance Board (“COMB” or “Board”), invites your company to submit a Construction Cost Proposal (Bid) for the _____ (“Project” or “Work”) to be submitted to the office of the Secretary of the Board, 3301 Laurel Canyon Road, Santa Barbara, California 93105-2017 up to the hour of _____ AM/PM, on (MONTH DAY, YEAR). This Project entails

It is the intention of the Board to make a provisional award to a contractor based on the lowest responsible and responsive proposals.

Any contract entered into pursuant to this invitation will incorporate the provisions of the State Labor Code. Compliance with the prevailing rates of wages and apprenticeship employment standards established by the State Director of Industrial Relations will be required. The California Prevailing Rates of per diem wages are on file in the office of the Secretary of the Board.

The Board hereby affirmatively ensures that it does not and will not discriminate on the basis of race, color, national origin, ancestry, gender, religion, sexual orientation, political affiliation or beliefs, physical or medical condition, age, marital status or pregnancy.

Proposals must be prepared on the approved Proposal forms in conformance with the Instructions to Proposers and submitted in an envelope, sealed and plainly marked on the outside, "Project Name", and delivered or mailed to Secretary of the Board, 3301 Laurel Canyon Road, Santa Barbara, California 93105-2017. The proposal must be accompanied by certified or cashier's check or bid bond, made payable to the Board for an amount no less than ten percent (10%) of the amount of proposal.

A contract will not be entered into with a Contractor who does not hold a valid State of California Contractor's License at the time of proposal submission in accordance with the provisions of the Business and Professions Code. Such proposals will be deemed non-responsive and rejected.

The Board reserves the right to reject any or all proposals, the right to award only one of those two projects, the right to make no award whatsoever, the right to waive any irregularity, and the right to take all proposals under advisement for a period of ninety (90) calendar days following the proposal due date. The Board does not intend to make an award of the contract to any proposal on the Project in excess of _____. The Contractor shall guarantee their prices for this 90-day period, and for the duration of the contract.

BY ORDER OF the Cachuma Operation & Maintenance Board, Santa Barbara County, California.

SECTION A2 - INSTRUCTIONS TO PROPOSERS

A2.01 Inspection of Site of Work

Proposers are required to inspect the site of the work during the Pre-bid Site Visit in order to satisfy themselves, by personal examination or by such other means as they may prefer, of the location of the proposed work and as to the actual conditions of and at the site of work. If, during the course of his/her examination, a proposer finds facts or conditions which appear to him/her to conflict with the letter or spirit of the Contract Documents, or with any other data furnished to him/her, he/she may apply in writing to the Board for additional information and explanation before submitting his/her proposal. Responses will be in the form of written Addendum to Contract Documents and distributed to all Proposers.

Pre-bid Site Visit (mandatory): COMB staff will be at the site on Month/Day/Year at AM/PM to answer any questions about the construction needed. All bidders must attend the pre-bid site visit or their bids shall be deemed non-responsive.

Project Location: _____.

The submission of a proposal by the proposer shall constitute the acknowledgment that, if awarded the contract, he/she has relied and is relying on his/her own examination of (a) the site of the work, (b) the access to the site, and (c) all other data, matters, and things requisite to the fulfillment of the work and on his/her own knowledge of existing services and utilities on and in the vicinity of the site of the work to be constructed under the contract, and not on any representation or warranty of Board. No claim for additional compensation will be allowed which is based upon a lack of knowledge of the above items.

A2.02 Examination of Contract Documents

Prior to proposal submission, each proposer shall thoroughly examine and be familiar with legal and procedural documents, general conditions, specification drawings and addenda (if any). The proposer shall report any errors or omissions noted to the Board. The submission of a proposal shall constitute an acknowledgment upon which the Board may rely that the proposer has thoroughly examined and is familiar with the Contract Documents. The failure or neglect of a proposer to receive or examine any of the Contract Documents shall in no way relieve him/her from any obligations with respect to his/her proposal or to the contract. No claim for additional compensation will be allowed which is based upon a lack of knowledge of any Contract Document.

A2.03 Interpretation of Contract Documents

No oral interpretations will be made to any proposer as to the meaning of the Contract Documents. Requests for an interpretation shall be made in writing and delivered to Board at least five (5) days before the time announced for opening the proposals. Interpretations by Board will be in the form of an addendum to the Contract Documents and, upon issuance, will be sent as promptly as is practical to all parties to whom the Contract Documents have been issued. All such addenda shall become part of the contract.

A2.04 Soil Information

The proposer shall make his/her own deductions and conclusions as to the nature of the materials to be excavated, the difficulties of making and maintaining the required excavations, the difficulties which may arise from subsurface conditions, and of doing any other work affected by the subsurface conditions and shall accept full responsibility therefore. Information provided and available to Proposers is for informational use only. The Board does not warrant the accuracy or sufficiency of the information.

A2.05 Proposal

Proposals shall be made on the Proposal Document forms enclosed as Section A3 of these specifications

without removal from the bound Contract Documents. All proposals shall give the prices proposed, both in writing and in figures, shall give all other information requested herein, and shall be signed by the proposer or his/her authorized representatives, with his/her address. If the proposal is made by an individual, his/her name, signature and post office address must be shown; if made by firm or partnership, the name and post office address of the firm or partnership and the signature of at least one of the general partners must be shown; if made by a corporation, the proposal shall show the name of the State under the laws of which the corporation is chartered, the name and post office address of the corporation, and the title of the person who signs on behalf of the corporation. If the proposal is made by the corporation, a certified copy of the bylaws or resolution of the board of directors of the corporation shall be furnished showing the authority of the officer signing the proposal to execute contracts on behalf of the corporation.

Each proposal shall be enclosed in a sealed envelope, labeled as specified in the Invitation To Submit Construction Cost Proposal (Bid). Proposers are warned against making erasures or alterations of any kind, and proposals which contain omissions, erasures or irregularities of any kind may be rejected. No oral, electronic, telegraphic, facsimile, or telephonic proposals or modifications will be considered. Bids not received at the COMB office by **Month/Day/Year at ____ AM/PM** shall not be opened or considered.

Proposals must be submitted in an envelope, sealed and plainly marked on the outside, "Project Name", and delivered or mailed to Secretary of the Board, 3301 Laurel Canyon Road, Santa Barbara, California 93105-2017.

As part of his/her proposal submission, the Contractor must state clearly his/her license number and expiration date.

A2.06 Addenda

Each proposal shall include specific acknowledgment in the space provided of receipt of all addenda issued during the proposal period. Failure to so acknowledge may result in the proposal being rejected.

A2.07 Proposal (Bid) Prices

Proposal (or Bid) prices shall include everything necessary for the completion of construction and fulfillment of the contract including but not limited to furnishing all materials, equipment, tools, plans and other facilities and all management, superintendence, labor and services, except as may be provided otherwise in the Contract Documents. In the event of a difference between a price quoted in words and a price quoted in figures for the same quotation, the words shall be the amount proposed.

In preparing proposal prices, proposer represents that he/she has carefully examined the Contract Documents and the site where the work is to be performed and that he/she has familiarized himself/herself with all local conditions and federal, state and local laws, ordinances, rules, and regulations that may affect, in any manner, the performance of the work. The proposer further represents that he/she has studied all surveys and investigation reports about subsurface and latent physical conditions pertaining to the job site, that he/she has performed such additional surveys and investigations as he/she deems necessary to complete the work at his/her proposal price, and that he/she has correlated the results of all such data with the requirements of the Contract Documents. The submittal of a proposal shall be conclusive evidence that the proposer has investigated and is satisfied as to the conditions to be encountered, including locality, uncertainty of weather and all other contingencies, and as to the character, quality, quantities, and scope of the work.

The Contractor will not be reimbursed for work performed for his/her convenience, or as required to adapt to field conditions, or work outside of that required by the Contract Documents.

A2.08 Permits, Taxes and License

Paragraph 7-5 of the SSPWC-2009 Edition shall apply to this Contract. Contractor shall pay all business taxes, license fees or royalties required for prosecution of the Work.

A2.09 Recognition of Bonding Companies [Bid, Payment And Performance Bonds]

All bonds provided by the Contractor in this contract must be provided by a California admitted surety insurer licensed to do business in the State of California (as set forth in California Code of Civil Procedure Section 995.010 et. seq.) and with a current A.M. Best's rating no less than A:VII or equivalent or as otherwise approved by Board.

A2.10 Qualification, License and Experience of Proposers

Each proposer shall be skilled and regularly engaged in the general class or type of work called for under the contract. Proposer shall submit the information requested in the **EXPERIENCE STATEMENT** and **SUPPLEMENTAL PROPOSER (BIDDER) INFORMATION** forms provided in Section A3 (Proposal Documents) of these specifications. Proposers shall also submit the information requested in the **PROPOSER (BIDDER) INFORMATION FORM**.

Each proposer shall possess a valid Contractor's License issued by the California Contractors License Board at the time of bid submission. The class of license shall be applicable to the work specified in the contract.

Proposers are advised that for their proposals to be deemed responsive, they must meet the following minimum requirements of not less than five (5) years experience in installation of each of the following:

- _____.
- _____.
- _____.
- _____.
- _____.

Proposers shall provide information concerning their compliance with these minimum requirements in the **EXPERIENCE STATEMENT** and **SUPPLEMENTAL PROPOSER (BIDDER) INFORMATION** forms referenced above. **Proposals received from contractors who lack this minimum experience, or which fail to set forth information sufficient to demonstrate that the contractor meets these minimum requirements, shall be deemed nonresponsive and shall not be considered.** COMB retains the ultimate discretion to determine whether a proposal is responsive.

COMB additionally retains the ultimate discretion to ascertain whether a bidder is responsible, as defined in Public Contract Code Section 1103, i.e. a bidder who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the contract.

It is COMB's intention to award a contract to a proposer who furnishes satisfactory evidence that it possesses the requisite experience and ability, and sufficient capital, facilities and plant to enable the contractor to prosecute the work successfully and properly, and to complete the work within the time limits set forth in the contract.

The Contractor's attention is directed to the provisions of the Contract Agreement concerning the naming of a Construction Manager and Job Site Supervisor for the work.

A2.11 List of Subcontractors

Each proposal shall have listed on the form provided herewith the name and address of each subcontractor to whom the proposer proposes to sublet portions of the work in excess of one-half of one percent of the total amount of his/her proposal. For the purpose of this paragraph, a subcontractor is defined as one who contracts with the Contractor to furnish materials and labor, or labor only for the performance of work at the site of the work or who will specially fabricate a portion of the work off the site pursuant to detailed drawings in the Contract Documents. The Board reserves the right to determine whether a listed subcontractor is a "responsible" contractor.

A2.12 Bid Guaranty

The proposal shall be accompanied by a bid guaranty (bid) bond duly completed on the form provided herewith by a guaranty company authorized to conduct business in the State of California in the sum of at least ten percent (10%) of the total amount of the bid proposal, or alternatively by a certified or cashier's check payable to the Board in the sum of at least ten percent (10%) of the total amount of the bid proposal. The amount payable to the Board under the bid guaranty bond, or the certified or cashier's check and the amount thereof, as the case may be, shall be forfeited to the Board in case of failure or neglect of the proposer to furnish, execute and deliver to the Board the required performance and payment bonds, evidences of insurance (requirements are set forth in Section A3) and to enter into, execute and deliver to the Board the agreement on the form provided herewith, within ten (10) days after being notified in writing by the Board that the award has been made and the agreement is ready for execution.

A2.13 Modification of Proposal

A modification of a proposal already received will be considered only if the modification is received prior to the time announced for the opening of proposals. All modifications shall be made in writing, executed and submitted in the same form and manner as the original proposal.

A2.14 Postponement of Cost Proposal Due Date

The Board reserves the right to postpone the date and time for receiving proposals at any time prior to the date and time announced in the Notice Inviting Proposals. The Board also reserves the right to issue material changes, additions, or deletions to the Notice Inviting Proposals, which may result in extension of time for closing of submission of proposals.

A2.15 Disqualification of Proposer

If there is reason to believe that collusion exists among the Proposers, none of the proposals of the participants in such collusion will be considered. Proposers shall execute and submit non-collusion affidavits with their proposals.

A2.16 Rejection of Proposals

The Board reserves the right to reject any and all proposals; any proposals which are incomplete, obscure or irregular; any proposals which omit a proposal on any one or more items on which the proposals are required; proposals which omit unit prices if unit prices are required; any proposal in which unit prices are unbalanced in the opinion of the Board; any proposals accompanied by insufficient or irregular proposal security; and any proposals from Proposers who have previously failed to perform properly or to complete on time contracts of any nature. Issuance of this invitation for a BID does not commit the Board to proceed with the solicitation process or to award any contract for the Project or any other project. The Board makes no guarantee that an award of contract will be made as a result of this invitation for BID. The Board further reserves to right to accept or reject any proposal, to re-solicit proposals, to waive any informalities or minor technical inconsistencies and/or to delete any requirements from this invitation, when deemed by the Board, in its sole discretion, to be most advantageous to the Board and in its best interests.

A2.17 Award of Contract

Subject to the Board's right in the Invitation To Submit Construction Cost Proposal (Bid) to take bids under advisement for 90 days, the Board intends that, within five (5) calendar days after proposals are due, the Board will act either to accept a proposal or to reject all proposals. The acceptance of a proposal will be evidenced by a notice of award of contract in writing, delivered by mail to the proposer whose proposal is accepted. No other act of the Board shall constitute acceptance of a proposal. The award of contract shall obligate the proposer whose proposal is accepted to furnish performance and payment bonds and evidences of insurance and execute the contract set forth herein. The Board reserves the right to make no award for the project.

Immediately following the award of contract, the Proposer will be required to meet with Board representatives in a "Pre-contract Conference" to review the Contract Documents to ensure that the documents will be properly executed and returned by the Proposer in a form acceptable to the Owner.

A2.18 Time of Performance and Liquidated Damages

All work shall be completed within the number of working days after effective date of Notice To Proceed as defined in Section 6-7.1.2("Contract Period") of Section B (General Provisions Modifications) plus any allowed extensions. If the Contractor has not completed all work as determined by the Board within the contract period, liquidated damages shall be assessed in accordance with Section 6-9.1 of Section Band Contract Agreement Article 2.

A2.19 Resolution of Construction Claims

Proposers are informed that all construction claims of \$375,000 or less resulting from Public Works contracts with local agencies will be resolved within the requirements of the Public Contracts Code, Section 20104 et seq., which sets forth procedures for mediation and arbitration.

A2.20 Return of Proposal (Bid) Guaranties

Within five (5) calendar days after the proposals are opened, the Board will return the bid guaranties (other than Bid Bonds) accompanying the proposals which are not to be considered in making the award. Bid guaranties for the two lowest Proposers will be held until the contract has been fully executed after which they will be returned to the respective Proposers whose proposals they accompanied.

A2.21 Execution of Contract

The contract agreement shall be executed in duplicate by the successful proposer and returned, together with the contract bonds and evidences of insurance, within ten (10) calendar days after the Notice of Award in Section A2.17, above. After execution by the Board, one original contract shall be returned to the Contractor.

A2.22 (Reserved)

A2.23 Nondiscrimination in Employment

By its submission of a proposal, Proposer agrees that it shall not discriminate in its recruiting, hiring, promotion, demotion or termination practices, or discriminate against any prospective or active employee engaged in the work because of race, color, national origin, ancestry, gender, religion, sexual orientation, political affiliation or beliefs, physical or medical condition, age, marital status or pregnancy. Proposers must comply with applicable Federal and California laws including, but not limited to, the California Fair Employment and Housing Act, beginning with Government Code, Section 12900, and Labor Code, Section 1735 and the American with Disabilities Act, 42 U.S.C. and 12101 et seq. In addition, Proposers shall require like compliance by any subcontractors employed on the work.

A2.24 Ineligible Contractors

The Board will not permit a contractor or subcontractor who is "ineligible" for public work pursuant to Labor Code Sections 1777.1 or 1777.7, to propose on, be awarded, or perform work as a subcontractor on, the Project. Contractor's submission of a proposal shall be deemed a representation by the Contractor that it is not ineligible under these provisions, and that any listed subcontractors are not ineligible. The Contractor for this Project shall not perform work with a subcontractor who is ineligible to perform work on a public works project pursuant to Labor Code Sections 1777.1 or 1777.7.

A2.25 (Reserved)

A2.26 Gender

If the use of the male gender appears in the proposal documents, it is done for convenience and brevity only and does not represent a bias against the female gender.

A2.27 Early Termination of Contract

As referenced in Article 11 of the "Contract Agreement" which forms part of these specifications, the Board hereby notifies Proposers that the 54-foot prefabricated arch concrete bridge to be installed as part of the Work is a pre-purchased item to be delivered to the site of the Work on or before October 28, 2016, so as to provide sufficient time to the successful Proposer to whom this contract is awarded to timely complete the Work consistent with the time requirements of the Department of Fish & Wildlife, any other regulatory agencies with jurisdiction thereto, and with Section 6 of "Section B-General Provisions Modifications" and specifically Paragraph 6-7.1.2 thereto ("time restrictions"). Proposers are advised that, notwithstanding the Board's award of the Contract to a successful Proposer ("Contractor"), the Board in its sole discretion (and without affecting any of its other rights herein) may subsequently terminate this Contract without penalty, due to time restrictions if the prefabricated bridge is not delivered to the site of the Work on or before October 28, 2016, or alternatively for any reason upon the Board's determination that such termination is in the Board's best interest.

If the Board elects to terminate the Contract in this circumstance, then notwithstanding any other provisions in these Contract Documents, such termination and the total compensation payable to the Contractor shall be governed by the following:

(1) The Engineer with oversight from the Project Manager will issue Contractor a written notice specifying that the Contract is terminated. Except as otherwise directed in writing by the Engineer, the Contractor shall:

- A. Stop all work under the Contract except that specifically directed to be completed prior to acceptance. [Such work may include, but is not limited to, reestablishment of a road crossing at the site of the Work.]
- B. Notify all of Contractor's subcontractors and suppliers that the Contract is being terminated and that their contracts and orders are not to be further performed unless otherwise authorized in writing by the Board.
- C. Perform work the Engineer deems necessary to secure the Project for termination.
- D. Remove equipment and plant from the site of the Work, as directed.
- E. Take action that is necessary to protect materials from damage.
- F. Provide the Engineer with an inventory list of all materials previously produced, purchased or ordered from suppliers for use in the Work and not yet used in the Work, including its storage location, and such other information as Engineer may request.
- G. Dispose of materials not yet used in the Work, as directed by Engineer. Contractor shall provide the Board with good title to all materials purchased by the Board hereunder (including materials for which partial payment has been made), and with bills of sale or other indicia of title for the materials.
- H. Subject to the Engineer's prior written approval, settle all outstanding liabilities and claims arising out of subcontracts or orders for materials terminated hereunder. To the extent directed by the Engineer, the Contractor shall assign to the Board all the right, title and interest of the Contractor under such subcontracts or orders referenced herein.
- I. Furnish the Engineer with any documentation required to be furnished by the Contractor in accordance with the Contract Documents.
- J. Take any other actions required by Engineer.

CONTRACTOR'S PROPOSAL

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

The undersigned, as proposer, declares that he/she has examined all of the Contract Documents and specifications contained in the above referenced Project and Proposal, and that he/she will contract with the Board on the form of contract provided therewith to do everything necessary for the fulfillment of this contract at the price and on the terms and conditions therein contained.

The following are included and are to be considered as forming a part of this proposal: (1) Bid Schedule, (2) Bid Bond (or alternative guaranty); (3) Proposer's Statement Regarding Insurance Coverage; (4) List of Subcontractors and Suppliers; (5) Proposed Equipment and Material Manufacturers; (6) Proposer Information; (7) Proposer Supplemental Information; (8) Experience Statement; and (9) Non-Collusion Affidavit.

We acknowledge that addenda numbers _____ to _____ have been delivered to us and have been examined as part of the Contract Documents.

Attached is a bid bond duly completed by a guaranty company authorized to conduct business in the State of California in the amount of at least ten percent (10%) of the total amount of our proposal, or alternatively there is attached a certified or cashier's check payable to the Board, in the amount of at least ten percent (10%) of the total amount of our proposal.

If our proposal is accepted, we agree to sign the contract form and to furnish the faithful performance and payment bonds (each to be one-hundred percent (100%) of the proposal amount), and the required evidences of insurance within ten (10) calendar days after receiving written notice of the award of contract.

We further agree if our proposal is accepted and a contract for the performance of the work is entered into with the Board, to so plan the work and to prosecute it with such diligence that all of the work shall be completed within the time stipulated in Section B (General Provisions Modifications), Paragraph 6-7.1.2.

Dated: _____

Company Name of Proposer (Bidder)

Proposer's Mailing Address:

Authorized Signature
(If Company is a Corporation, provide corporate information per paragraph A2.05)

Title

State of Incorporation

BID SCHEDULE

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

The cost of furnishing all labor, services, material, equipment and installation necessary for the completion of the work itemized under this schedule, even though not explicitly shown or specified, shall be included in the lump sum price for the various cost items shown herein. The Contractor's proposal will be reviewed upon the total lump sum value entered into the far right column as well as the total lump sum price entered in the final row of the bid form. The relative unit cost will be used for information purposes only and will establish a potential unit of cost that may be used to adjust the contract price as required. The Board reserves the right to increase or decrease the quantity of any item or omit items as may be necessary, and the same shall in no way affect or make void the contract, except that appropriate additions or deductions from the contract total price will be made at the stipulated unit price in accordance with these Contract Documents.

Quantities (if any) listed in this Proposal Schedule are intended only as a guide for the Contractor as to the anticipated order of magnitude of work. Contractor shall be responsible for calculating and providing totals for the schedule as well as verifying all estimated quantities throughout construction. If the Contractor's take-off values differ from those indicated on the bid tabulation form, Contractor shall strike through the indicated value and enter a new number where necessary. Values entered by the Contractor will be evaluated to assess the overall understanding of the proposed scope of work. Contractor will be reimbursed for the quantity of items as indicated in the final Contract Documents, including addenda, and shown on the plans.

The Contractor will not be reimbursed for work performed for his convenience, or as required to adapt to field conditions, or for unauthorized work performed outside of that required by the Contract Documents.

BID SCHEDULE (Project Name)

Item No.	Description	Reference	Estimated Quantity	Unit Measurement	Unit Price	Item Cost
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						

BID TOTAL (Items 1 through 28) \$ _____

Write out BID TOTAL

Contractor Signature

BID BOND (10%)

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

KNOW ALL PERSONS BY THESE PRESENTS that Bidder _____, as PRINCIPAL, and _____, as SURETY, are held and firmly bound unto the Cachuma Operation and Maintenance Board as BOARD, in the penal sum of _____ dollars (\$_____), which is ten percent (10%) of the total amount bid by PRINCIPAL to BOARD for the above stated project, for the payment of which sum, PRINCIPAL and SURETY agree to be bound, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that, whereas PRINCIPAL is about to submit a bid proposal to BOARD for the above stated project, if said bid proposal is rejected, or if said bid proposal is accepted and a contract is awarded and entered into by PRINCIPAL in the manner and time specified, and provides the required payment and performance bonds and insurance coverage to BOARD, then this obligation shall be null and void, otherwise it shall remain in full force and effect in favor of BOARD.

For value received, the SURETY hereby agrees that its obligations and its bond shall not be impaired or affected by any extension of time within which the BOARD may accept such bid proposal; and SURETY hereby waives notice of any such extension.

IN WITNESS WHEREOF the parties hereto have set their names, titles, hands, and seals this _____ day of _____, 20__.

PRINCIPAL

SURETY

By: _____

By: _____

Title: _____

Title: _____

Subscribed and sworn to this _____ day of _____, 20__.

NOTARY PUBLIC _____

(SEAL)

LIST OF SUBCONTRACTORS AND SUPPLIERS

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

The following is a list of subcontractors and suppliers who will perform work or provide materials of value in excess of one-half percent of the total contract price. No subcontractor shall perform work in excess of the amount specified herein, without the written approval of the Board.

Name Under Which Subcontractor is Licensed	License No./ Expiration Date	Address of Office, Mill or Shop	Specific Description of Work Subcontracted or Materials Supplied	Cost of Work

CONTRACTOR'S STATEMENT REGARDING INSURANCE COVERAGE
PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

Contractor hereby certifies that he/she has reviewed the insurance coverage requirements for this Contract. Contractor further certifies that he/she can meet all of these specifications requirements for insurance including insurance coverage of his/her subcontractors.

Workers' Compensation Insurance: The Contractor shall obtain and maintain workers' compensation insurance required by law covering all of the Contractor's employees on the Work at all times. It shall be the Contractor's responsibility to see that all employees of its subcontractors are equally protected by such insurance either provided by the Contractor or by the subcontractor. The required insurance shall cover any assignee of the Contractor or any subcontractor performing or causing to be performed any work or labor in fulfillment of the provisions of the Contract. The Contractor certifies the following:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code before commencing the performance of the work of this contract.

Contractor

By

Title

Date

INSURANCE REQUIREMENTS FOR CONTRACTOR
PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

Contractor shall procure and maintain for the duration of the contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his/her agents, representatives, employees or subcontractors. The cost of such insurance is included in the Contract amount.

Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).
2. Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, Code I (any auto).
3. Workers' Compensation insurance as required by the State of California and Employer's Liability insurance. [Note: See also Paragraph 7-4 of Section B, General Provisions Modifications.]

Minimum Limits of Insurance

Contractor shall maintain limits not less than:

1. General Liability: \$2,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: \$2,000,000 per accident for bodily injury and property damage.
3. Workers Compensation: \$1,000,000
4. Employers Liability: \$2,000,000 per accident for bodily injury or disease.

Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the Board. At the option of the Board, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the U.S. Bureau of Reclamation ("Reclamation"), the Board, its members and its officers, consultants (including the Board's Engineer and its Design Engineer, HDR Fisheries Design Center), officials, directors, agents and employees (collectively all of these parties are referred to as "additional insureds"), or the Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Other Insurance Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. The additional insureds shall be covered as insureds (via ISO endorsement CG 2010,

CG 2033 or insurer's equivalent for general liability coverage) as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the additional insureds.

2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the additional insureds. Any insurance or self-insurance maintained by the additional insureds shall be excess of the Contractor's insurance and shall not contribute with it.
3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the additional insureds.
4. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' written notice by certified mail, return receipt requested, has been given to the Board.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII or equivalent or as otherwise approved by Board.

Verification of Coverage

Contractor shall furnish the Board with original endorsements effecting coverage required by this clause. The endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. The endorsements are to be in a form satisfactory to the Board. All endorsements are to be received and approved by the Board before work commences. As an alternative, the Contractor's insurer may provide complete, certified copies of all required insurance policies, including endorsements affecting the coverage required by these specifications.

Subcontractors

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.

PROPOSER (BIDDER) INFORMATION

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

PROPOSER (BIDDER) certifies that the following information is true and correct:

Name of Proposer: _____

Business Address: _____

Telephone: _____ FAX: _____ E-mail: _____

Contractor's License No.: _____ Date Issued: _____ Expiration Date: _____

The following are the names, titles, addresses, and phone numbers of all individuals, firm members, partners, joint venturers, and/or corporate officers having a principal interest in this proposal: (Name/Title/Address/Telephone #)

Any voluntary or involuntary bankruptcy judgments against any principal having an interest in this proposal are as follows: (Type of Judgment / Date)

All current and prior DBA's, alias, and/or fictitious business names for any principal having an interest in this proposal are as follows: (Principal / DBA's / Applicable Dates)

Prior Disqualification

Has your firm ever been disqualified from performing work for any City, County, Public or Private Contracting entity? Yes / No _____. If yes, provide the following information. (If more than once, use separate sheets):

Date: _____ Entity: _____

Location: _____

Reason: _____

Provide Status and any Supplemental Statement:

Has your firm been reinstated by this entity? Yes / No _____

Violations of Federal or State Law

Has your firm or its officers been found in violation of, or assessed any penalties by any AGENCY (including but not limited to the Department of Industrial Relations for the State of California) for noncompliance, violations of Federal or State labor laws and/or business or licensing regulations, within the past five (5) years relating to your construction projects?

Yes / No: _____ Federal / State: _____

If "yes", identify and describe, (including status):

Have the penalties been paid? Yes / No: _____

B. Does your firm or its officers have any ongoing investigations by any AGENCY (including but not limited to the Department of Industrial Relations for the State of California) regarding violations of the State Labor Code, California Business and Professions Code or State Licensing laws?

Yes / No: _____ Codes / Laws: _____ Section / Article: _____

If "yes", identify and describe (including status):

I declare under penalty of perjury under the laws of the State of California that all of the representations made in this **PROPOSER (BIDDER) INFORMATION** are true and correct. Executed this _____ day of _____, 20____, at _____, California.

AUTHORIZED SIGNATURE: _____

TITLE: _____

SUPPLEMENTAL PROPOSER (BIDDER) INFORMATION

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

The following supplemental questions are specific to this project and shall be used by the District in the evaluation of a contractor. PROPOSER (BIDDER) certifies that the following information is true and correct (COMB may verify all information):

Questions:

1. Describe experience with bridge or bottomless arched culvert installation and road construction.

Project Location & Description of Work and Date of Project	Project Value
1.	
2.	
3	

2. Describe in detail examples of your construction experience with in-stream grade control structures such as riffles, rock weirs, and engineered streambed material (ESM).

Project Location & Description of Work and Date of Project	Project Value
1.	
2.	
3	

3. Describe in detail examples of your construction experience with excavators within a stream channel.

Project Location & Description of Work and Date of Project	Project Value
1.	
2.	
3	

4. Describe in detail examples of your construction experience with vegetated rock slope protection.

COMB

Project Location & Description of Work and Date of Project	Project Value
1.	
2.	
3	

5. Have you done any projects where endangered species were a concern at the work site? ___Yes ___No
 If Yes, describe protective and/or mitigation measures you supported or participated in. _____

If Yes, describe protective and/or mitigation measures you supported or participated in. _____

6. Have you done any projects where cultural resources were a concern at the work site? ___Yes ___No

7. Have you done any projects with regulatory agency oversight (USACE, CDFW, USFWS, CWQCB, EPA, Etc.)? ___Yes ___No
 If Yes, describe level of oversight and successes in working with these agencies. _____

8. Schedule is critical on this project. Describe manpower and equipment resources available beyond that which is anticipated will do the job (contingency capabilities). _____

9. Describe recent experience where you have completed a schedule-critical project with a very limited construction window (note that early season rainstorms may require an acceleration of the schedule)?

EXPERIENCE STATEMENT

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

Pursuant to **A2.10 QUALIFICATION, LICENSE AND EXPERIENCE OF PROPOSERS**, the following is a record of the Proposer's experience in construction of a type similar in magnitude and character to that contemplated under this contract. Included in this section should be a complete list of references for similar projects in terms of scope of work, value of work, and time constraints. The Contractor must demonstrate that he/she has experience with this type of project and can manage this project effectively. If necessary, additional numbered pages can be attached to this page. The Contractor must be properly licensed to perform the work in this project as determined by the State Contractor's License Board. COMB may contact listed references.

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel #: _____

Description: _____

Subject to Federal Labor Standards: _____ Yes _____ No

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel #: _____

Description: _____

Subject to Federal Labor Standards: _____ Yes _____ No

Project Title: _____ Client: _____

Date: _____ Project Value: _____ Contact: _____ Tel #: _____

Description: _____

Subject to Federal Labor Standards: _____ Yes _____ No

I declare under penalty of perjury under the laws of the State of California that all of the representations made in **THIS EXPERIENCE STATEMENT** are true and correct. Executed this _____ day of _____, 20____, at _____, California.

AUTHORIZED SIGNATURE: _____

TITLE: _____

COMB

SECTION A4 – CONTRACT DOCUMENTS

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

- Contract Agreement
- Payment (Labor and Materials) Bond.
- Performance Bond.
- The prevailing rate of per diem wages determined by the Director of the California Department of Industrial Relations.
- Notice to Proceed.

COMB

**CONTRACT AGREEMENT FOR THE
PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)
FOR THE CACHUMA OPERATION AND MAINTENANCE BOARD
SANTA BARBARA COUNTY, CALIFORNIA**

Contract Price \$ _____

THIS AGREEMENT made this _____ day of _____, 201____, by and between the Cachuma Operation and Maintenance Board, a joint powers authority and public entity, organized and existing in the County of Santa Barbara, under and by virtue of the laws of the State of California, hereinafter designated as Board, and _____, hereinafter designated as Contractor. The Board and the Contractor, in consideration of the mutual promises, covenants and conditions hereinafter set forth, agree as follows:

ARTICLE 1 - THE WORK

In consideration of payments and agreements to be made by the Board, the Contractor shall perform and complete in a prompt and workmanlike manner the work in the Board's Contract Documents entitled:

PROJECT NAME

The Work is generally described as follows:
The project consists of removal of existing concrete low-flow type stream crossing; installation of 54-foot prefabricated concrete bridge with wingwalls; installation of 18-foot wide asphalt road with corresponding traffic barrier systems; installation of rock slope protection; instream grading and contouring; improvement of existing fencing private property; and protection of environmental resources and private property.

The Contractor shall perform all work in accordance with, and meet all requirements of, the Contract Documents, and shall furnish at his/her own expense all labor, materials, equipment, tools, transportation, and services necessary therefore, except for such materials, equipment and services (if any) as may be set forth in the Contract Documents to be furnished by the Board.

The Contractor shall provide the Board with the name and qualifications of Contractor's Construction Manager ("Construction Manager") and Job Site Supervisor ("Field Supervisor") prior to the commencement of Work. The Construction Manager and Field Supervisor shall be acceptable to the Board in its sole discretion. If in its sole discretion the initially-named Construction Manager and Field Supervisor are not acceptable to the Board, the Board may require the Contractor to

provide a different Construction Manager and Job Site Supervisor who are acceptable to the Board. The Contractor shall not change the Board-approved Construction Manager and Field Supervisor during the course of the Work, unless such change is specifically approved in writing by the Board in its sole discretion.

Contractor represents and warrants that it currently possesses all license(s) or other approvals currently required by California law to engage in the Work described herein. Contractor holds a current, active Class __ license from the State of California, License No. _____.

ARTICLE 2 - COMMENCEMENT AND COMPLETION; LIQUIDATED DAMAGES

The Work to be performed under this Contract shall commence on the date specified in the Notice to Proceed by the Board and the Work shall be fully completed by the schedule defined in Section 6-7.1.2 in Section B—General Provisions Modifications. The Board will issue a Notice to Proceed within 3 days following its acceptance of Contractor's bonds and insurance certificates.

The Board and the Contractor recognize that time is of the essence of this Agreement and that the Board will suffer financial loss if the Work is not completed within the time specified herein, plus any extensions thereof allowed in accordance with Section B - General Provisions Modifications, including Paragraph 6-6.2. The parties also recognize the delays, expense and difficulties involved in proving in a legal proceeding the actual loss suffered by the Board if the Work is not completed on time. **Accordingly, instead of requiring any such proof, the Board and the Contractor agree that as liquidated damages or delay (but not as penalty) the Contractor shall pay the Board the sum**

COMB

of \$750.00 for each consecutive calendar day that expires after the time specified herein. The parties agree that assessment of liquidated damages is valid in accordance with California Government Code Section 53069.85.

ARTICLE 3 - CONTRACT PRICE

The Board shall pay the Contractor for the completion of the Work in accordance with the Contract Documents in current funds the lump sum Contract Price(s) as set forth above.

ARTICLE 4 - THE CONTRACT DOCUMENTS

The Contract Documents consist of all documents contained in Sections A through F, inclusive, of the bid specifications for this work, including but not limited to:

- Documents – Section A
 - Contract Agreement
 - Cost Schedule
 - List of Equipment and Materials Manufacturers
 - List of Subcontractors and Suppliers
 - Contractor’s Statement Regarding Insurance Coverage
 - Insurance Requirements for Contractors
 - Payment (Labor and Materials) Bond (form of bond attached hereto or otherwise acceptable to Board)
 - Performance Bond (form of bond attached hereto or otherwise acceptable to Board)
 - The prevailing rate of per diem wages determined by the Director of the California Department of Industrial Relations
 - Notice to Proceed
 - Notice of Completion (form not attached hereto)
 - Standard Specifications for Public Works Construction (SSPWC, “the Greenbook”) – 2009 Edition
 - Change Order (form not attached hereto)
 - Work Change Directives which may be delivered or issued after the Effective Date of the Agreement (form not attached hereto)
- General Provisions Modifications – Section B
- Special Provisions – Section C
- Design Drawings – Section D
- Project Permits and Plans – Section E

The Contract Documents and their provisions (whether or not copies are attached hereto) are incorporated by

reference into this Contract Agreement as if set forth in full.

ARTICLE 5 - PAYMENT PROCEDURES

The Contractor shall submit applications for Payment for each calendar month in accordance with Section 9-3, Measurement and Payment as modified herein of the Standard Specifications (SSPWC). The payment application shall be submitted in spread sheet format acceptable to the Board. Applications for Payment will be processed by the Board as provided in the Standard Specifications. In accordance with Public Contract Code Section 22300, the Board will allow the substitution of securities for funds withheld to insure performance of all provisions of the Agreement.

ARTICLE 6 - NOTICES

Whenever any provision of the Contract Documents requires the giving of written notice, it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the Notice.

ARTICLE 7 - NO ASSIGNMENT

No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and, unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents. Any assignment of money shall be subject to all proper withholdings in favor of Board and to all deductions provided for in the Contract Documents. All money withheld, whether assigned or not, shall be subject to being used by the Board for completion of the work, should the Contractor be in default.

The Board and the Contractor each binds itself, and its partners, officers, directors, employees, successors, assigns, and legal representatives to the other party hereto, and their partners, officers, directors, employees, successors, assigns, and legal representatives in respect of all covenants, agreements, and obligations contained in the Contract

COMB

Documents.

ARTICLE 8 - PREVAILING WAGES/LABOR CODE COMPLIANCE

The general prevailing rates of per diem wages and general prevailing rate for holiday and overtime work in the locality in which the work is to be performed have been determined by the Board. The general prevailing rates of per diem wages are hereby incorporated herein and made a part hereof. The Contractor agrees that he, or any subcontractor under him, will pay not less than the foregoing specified prevailing rates of wages to all workmen employed in the execution of the Contract.

Any contractor, who is awarded a public works project and intends to use a craft or classification not shown on the general prevailing wage determinations, may be required to pay the wage rate of that craft or classification most closely related to it as shown in the general determinations effective at the time of the call for proposals or bids.

The Contractor further acknowledges the provisions of the California Labor Code applicable to this project. Contractor covenants that it will comply with such provisions. These provisions include, but are not limited to, the levying of penalties for failure to pay prevailing wages (Labor Code Section 1775) or for workmen who are required or permitted to work more than eight hours in one calendar day and forty hours in one calendar week in violation of the Labor Code (Labor Code Section 1813); and the keeping and furnishing of accurate and certified payroll records (Labor Code Section 1776).

ARTICLE 9 - INDEMNITY OBLIGATIONS

A. Promptly upon execution of the Contract, Contractor specifically obligates itself and agrees to protect, hold free and harmless, investigate, defend and indemnify the U.S. Bureau of Reclamation ("Reclamation"), State of California, the Board, its members, and their respective officers, consultants (including the Board's Engineer and its Design Engineer, HDR Fisheries Design Center), directors, officials, employees and agents, from and against any and all liability, penalties, costs, losses, damages, expenses, causes of action, claims or judgments, including without limitation attorneys' fees and expert witness fees and costs of litigation, which arise out of or are in any way connected with Contractor's or its subcontractors' or suppliers' performance of work

under this Contract or failure to comply with any of the obligations contained in the Contract. To the fullest extent legally permissible, this indemnity, defense and hold harmless obligation of Contractor shall apply to any and all acts or omissions, whether active or passive, on the part of the Contractor or its agents, employees, representatives, or any subcontractor or any of subcontractor's agents, employees, and representatives, resulting in claim or liability (including but not limited to death or bodily injury to, or damage to property of, Contractor or any subcontractor, person, firm, corporation, or supplier employed by the Contractor or subcontractor upon or in connection with the Work, either directly or by indirect contact), irrespective of whether or not any acts or omissions of any of the parties to be indemnified hereunder may also have been a contributing factor to the liability, except such loss or damage which was caused by the active negligence, sole negligence, or willful misconduct of the indemnitees. This provision shall be construed in accordance with California Civil Code Section 2782 *et seq.* and notwithstanding any provision to the contrary in the Standard Specifications.

B. In any and all claims against the Board, Reclamation, and their consultants, and State of California, and each of their members, trustees, directors, officers, employees and agents by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation under this Section shall not be limited in any way by any limitation of the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under Worker's Compensation statutes, disability benefit statutes or other employee benefit statutes, or other insurance policies furnished by Contractor as required herein.

C. Contractors indemnity obligations within this Article 9 shall survive the expiration or completion of this agreement.

ARTICLE 10 - PAYMENTS AND PERFORMANCE BONDS

Contractor as part of its Contract Price, and prior to commencement of work, shall supply to the Board payment and performance bonds (each in the amount of 100% of the Contract Price). The payment bond shall meet all requirements of Civil Code Section 9550 and 9554 and shall be in a form satisfactory to the Board.

COMB

The performance bond shall be in the form provided in these Contract Documents or as otherwise acceptable to the Board. The bonds provided by the Contractor must be issued by a California admitted surety insurer licensed to do business in the State of California (as set forth in California Code of Civil Procedure Section 995.010 et. seq.) and with a current A. M. Best's rating no less than A:VII or equivalent or as otherwise approved by Board. In the event the Contractor is awarded more than one contract for different projects, there shall be separate bonds supplied under each contract and for each particular project.

ARTICLE 11 – EARLY TERMINATION OF CONTRACT

As referenced in Item 8 of the "Section C-Special Provisions-Technical" which are part of these specifications, the 54-foot prefabricated arch concrete bridge to be installed as part of the Work is a pre-purchased item to be delivered to the site of the Work on or before October 28, 2016 so as to provide sufficient time to timely complete the Work consistent with the time requirements of the Department of Fish & Wildlife, any other regulatory agencies with jurisdiction thereto, and with Section 6 of "Section B-General Provisions Modifications" and specifically Paragraph 6-7.1.2 thereto ("Contract Period"). The Board, in its sole discretion, (and without affecting any of its other right herein) may subsequently terminate this Contract, without penalty, due to time restrictions if the prefabricated bridge is not delivered to the site of the Work on or before October 28, 2016, or alternatively for any reason upon the Board's determination that such termination is in the Board's best interest.

If the Board elects to terminate the Contract in this circumstance, then notwithstanding any other provisions in these Contract Documents, such termination and the total compensation payable to the Contractor shall be governed by the following:

(1) The Engineer will issue Contractor a written notice specifying that the Contract is terminated. Except as otherwise directed in writing by the Engineer, the Contractor shall:

A. Stop all work under the Contract except that specifically directed to be completed prior to acceptance. [Such work may include, but is not limited to, reestablishment of a road crossing at the site of the Work.]

B. Notify all of Contractor's subcontractors and suppliers that the Contract is being terminated and that their contracts and orders are not to be further performed unless otherwise authorized in writing by the Board.

C. Perform work the Engineer deems necessary to secure the Project for termination.

D. Remove equipment and plant from the site of the Work, as directed.

E. Take action that is necessary to protect materials from damage.

F. Provide the Engineer with an inventory list of all materials previously produced, purchased or ordered from suppliers for use in the Work and not yet used in the Work, including its storage location, and such other information as Engineer may request.

G. Dispose of materials not yet used in the Work, as directed by Engineer. Contractor shall provide the Board with good title to all materials purchased by the Board hereunder (including materials for which partial payment has been made), and with bills of sale or other indicia of title for the materials.

H. Subject to the Engineer's prior written approval, settle all outstanding liabilities and claims arising out of subcontracts or orders for materials terminated hereunder. To the extent directed by the Engineer, the Contractor shall assign to the Board all the right, title and interest of the Contractor under such subcontracts or orders referenced herein.

I. Furnish the Engineer with any documentation required to be furnished by the Contractor in accordance with the Contract Documents.

J. Take any other actions required by Engineer.

(2) Termination of the Contract shall not relieve any surety of its obligations for just claims arising out of the work performed.

(3) The total compensation to be paid to Contractor shall be determined by the Engineer on the basis of the following:

A. The reasonable cost to Contractor, without profit, for all work performed under the Contract, including

COMB

mobilization, demobilization and work done to secure the Project for termination. In determining the reasonable cost, deductions will be made for the cost of materials to be retained by the Contractor, amounts realized by sale of the materials, and for other appropriate credits against the cost of the Work. When in the Engineer's opinion the cost of a contract item of work is excessively high due to costs to remedy or replace defective or rejected work, the reasonable cost to be allowed will be the estimated reasonable cost of performing that work in compliance with the requirements of the plans and specifications and the excessive actual cost shall be disallowed.

B. A reasonable allowance for profit on the cost of the work as determined pursuant to subparagraph (A) herein, provided that the Contractor establishes to the satisfaction of the Engineer that it is reasonably probable that the Contractor would have made a profit had the Contract been completed and provided further that the profit allowed shall in no event exceed four percent (4%) of the cost.

C. The reasonable cost to the contractor of handling material returned to vendor(s), delivered to the site of the Work or disposed of as directed by the Engineer.

D. A reasonable allowance for the Contractor's administrative costs in determining the amount payable due to the termination of the Contract.

(4) All records of the Contractor and its subcontractors and suppliers necessary to determine compensation in accordance with these provisions shall be retained and open to inspection or audit by representatives of the Board at all times after issuance of the notice that the Contract will be terminated and for a period of three (3) years thereafter.

(5) After its acceptance of the Work, the Board may make payments on the basis of interim estimates pending issuance of the final estimate when, in the opinion of the Engineer, the amount thus paid, together with all amounts previously paid or allowed, will not result in total compensation in excess of that to which the Contractor will be entitled. All payments, including payment of the final estimate, shall be subject to deductions for prior payments and amounts, if any, to be kept or retained under the provisions of the contract.

These provisions shall be included in any subcontracts.

ARTICLE 12 – LAWS, REGULATIONS AND PERMITS

Contractor, at its expense, shall give all notices and (unless otherwise provided herein) obtain all permits for the work required by law, and shall comply with all applicable federal, state and local laws, ordinances, rules, regulations, orders and permit conditions pertaining to the conduct of the work, including but not limited to those regarding protection of the environment. Contractor shall be liable for all violations of the law in connection with work furnished by Contractor. If Contractor observes that any drawings or specifications are at variance with any law or ordinance, rule or regulation, he/she shall promptly notify the Board's authorized representative in writing and any necessary changes shall be made by written instruction or change order. If Contractor performs any work knowing it to be contrary to such laws, ordinances, rules or regulations and without giving notice to the Board's authorized representative, Contractor shall bear all costs arising therefrom.

ARTICLE 13 – SAFETY

Contractor shall execute and maintain its work so as to avoid injury or damage to any person or property. Contractor shall comply with the requirements of the specifications relating to safety measures applicable in particular operations or kinds of work. Contractor shall designate, in writing, a responsible representative at the worksite whose duty shall be the prevention of accidents, and the maintenance and supervision of safety precautions and programs. This person shall be Contractor's Construction Manager unless otherwise designated in writing by Contractor.

In carrying out its work, Contractor shall at all times exercise all necessary precautions for the safety of employees appropriate to the nature of the work and the conditions under which the work is to be performed, and shall comply with all applicable federal, state and local statutory and regulatory requirements including California Department of Industrial Relations (Cal/OSHA) regulations; and the U.S. Department of Transportation Omnibus Transportation Employee Testing Act. Safety precautions, as applicable, shall include but shall not be limited to: adequate life protection and lifesaving equipment; first aid; adequate illumination; instructions in accident prevention for all employees, such as the use of machinery guards, safe walkways, scaffolds, fall protection, ladders, bridges, gang planks, confined space procedures, trenching and shoring, and other safety devices; equipment and wearing apparel as are necessary or lawfully required

COMB

to prevent accidents, injuries, or illnesses; and adequate facilities for the proper inspection and maintenance of all safety measures. Contractor shall submit its Injury Illness Prevention Plan (IIPP) to the Board for approval prior to commencement of the Work.

If applicable, in accordance with Section 6705 of the California Labor Code, Contractor shall submit to COMB specific plans to show details of provisions for worker protection from caving ground during excavations of trenches of five feet or more in depth. The excavation/trench safety plan shall be submitted to and accepted by COMB prior to starting excavation. The trench safety plan shall have details showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground. If such a plan varies from the shoring system standards established by the Construction Safety Orders of the California Department of Industrial Relations (Cal/OSHA), the plan shall be prepared by a California registered civil or structural engineer. As part of the plan, a note shall be included stating that the registered civil or structural engineer certifies that the plan complies with the Cal/OSHA Construction Safety Orders, or that the registered civil or structural engineer certifies that the plan is not less effective than the shoring, bracing, sloping or other provisions of the Safety Orders. In no event shall Contractor use a shoring, sloping, or protective system less effective than that required by said Construction Safety Orders. Submission of the plan in no way relieves Contractor of the requirement to maintain safety in all areas. If excavations or trench work requiring a Cal/OSHA permit are to be undertaken, Contractor shall submit his/her permit with the excavation/trench work safety plan to COMB before work begins.

If applicable, Contractor shall also comply with the provisions of California Public Contract Code Section 7104, which pertains to the digging of trenches or other excavations extending deeper than four feet below the surface and the discovery of hazardous waste or subsurface or unknown latent physical conditions differing materially from those ordinarily encountered. The provisions of Section 7104 are incorporated by reference herein as if set forth in full.

Pursuant to California Labor Code Section 6708, each Contractor and subcontractor shall maintain or make available adequate emergency first aid treatment for its employees, agents and representatives, sufficient to

comply with the Federal Occupational Safety & Health Act (P.L. 91-596; OSHA). The names and telephone numbers of at least two medical doctors practicing in the vicinity and the telephone number of the local ambulance service shall be prominently displayed adjacent to telephones.

Safety Measures and Public Convenience - Contractor shall provide for the protection of all persons and property as herein specified. Attention is called to "Construction Safety Orders: and General Safety Orders" of the California State Industrial Accident Commission to which Contractor is required by law to conform.

ARTICLE 14 – NO WAIVER

No failure by COMB in asserting any of its rights or remedies as to any default of Contractor shall operate as a waiver of the default, or any subsequent or other default by Contractor, or of any of the Board's rights or remedies. No such delay shall deprive COMB of its right to institute and maintain any actions or proceedings which may be necessary to protect, assert, or enforce any rights or remedies arising out of this Agreement or the performance thereof.

ARTICLE 15 - SEVERABILITY

If any provision of these Contract Documents shall be held void or unenforceable, such determination shall not affect the remaining provisions thereof, which shall continue in valid force and effect.

ARTICLE 16 - INCORPORATION OF APPLICABLE STATUTORY PROVISIONS

The parties agree that all provisions of law which apply to this Contract Agreement (even if not specifically included or referenced herein), and of the grant agreement set forth in Section 6.03.04, form a part of this Contract Agreement, are incorporated by reference herein as if set forth in full, and that Contractor shall comply with all such provisions.

ARTICLE 17 - CHANGES TO LAW

If any changes or modifications to applicable laws governing the Work are not specifically reflected in these Contract Documents, they are hereby deemed adopted and incorporated by reference herein, and shall supersede any provisions herein to the contrary.

ARTICLE 18 - VENUE

Any proceedings arising out of dispute(s) between the Board and the Contractor as to any provision(s) of this

COMB

Contract Agreement shall occur within the County of Santa Barbara, State of California.

ARTICLE 19 - INCORPORATION OF GRANT PROVISIONS AND REQUIREMENTS

Contractor acknowledges that COMB will pay for a significant portion of the Work through a grant received by COMB from the California Department of Fish and Wildlife (Grant Agreement Number P1450011), or "grant agreement". Contractor agrees to comply with the provisions of this grant agreement applicable to

Contractor's work. Specifically, without limiting the foregoing covenant, Contractor acknowledges and agrees to comply with the following: Grant Agreement Number P1450011—Section 6.03.04 (Tasks), including Task 4 thereto; Exhibit 1.a. Items 4 (audit) and 8 (Non-Discrimination Clause); Exhibit 2, Item 1 (Utilization of Small, Minority and Women's Businesses); Item 4 (Compliance with Federal Regulations); Item 6 (Standards for Financial Management System); Item 9 (Environmental Quality); and Item 11 (Single Audit Act); Item 12 (Federal Assurances). These provisions are incorporated herein by reference.

IN WITNESS WHEREOF, the BOARD and the CONTRACTOR have caused this Agreement to be executed the day and year first written above.

CACHUMA OPERATION & MAINTENANCE BOARD

By: _____

Title: _____

ATTEST:

Secretary to the Board of Directors

Approved as to Form:
Musick, Peeler and Garrett LLP

Attorneys for Board
Principal:

CONTRACTOR

By: _____

Title: _____

License No.: _____

ATTEST:

Agent for Service of Process:

Bond No.: _____

Bond Type: _____

Bond Amount: _____

COMB

PAYMENT (LABOR AND MATERIALS) BOND

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

This Payment (Labor and Materials) Bond is tendered to the Cachuma Operation & Maintenance Board ("Board") in conjunction with the **PROJECT NAME** project set forth above.

We, the Principal _____ and _____ a Surety Corporation, organized and existing under and by virtues of the laws of the State of _____ and duly authorized to transact business within the State of California as a surety, are held and firmly bound unto the Board, for the use and benefit of itself and any and all persons, companies, or corporations who perform work or labor or furnish materials, provisions, or other supplies used in, upon, for or about the performance of the above-described work, or who rent or lease persons or machinery for said work to be done, in the sum of _____ (\$ _____) in lawful money of the United States of America, to be paid to such persons, companies or corporations, for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The Board has awarded Principal a contract for the above-described project and the Principal is required by the terms of the contract to furnish a bond for materialmen and laborers involved in the Project; and thus, if said Principal, or any subcontractor or contractors, fail to pay any persons named in Civil Code Section 9100 or for any materials, provisions, provender, or other supplies, or persons or machinery used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind or for amounts due under the Unemployment Insurance Code with respect to such work or labor, or any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and its subcontractors pursuant to Unemployment Insurance Code Section 13020, the Surety will pay the same up to an amount not exceeding the sum specified in this bond and in case suit is brought upon this bond, additional, reasonable attorneys' fees to be fixed by the court. This bond shall inure to the benefit of any and all persons entitled to file claims under California Civil Code Section 9100, so as to give a right of action to such persons or his/her assigns in any suit brought upon this bond.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Project or work to be performed hereunder, or the specifications and drawings that accompany same, shall in any way affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alterations or addition to the terms of the Contract, to the work or Project, or to the drawings and specifications.

Should the conditions of this bond be fully performed, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect.

IN WITNESS WHEREOF, this Payment (Labor and Materials) Bond is duly executed by the Principal and Surety above-named on _____, 20____.

PRINCIPAL:

*SURETY:

NAME OF PRINCIPAL

NAME OF SURETY

SIGNATURE

SIGNATURE

TYPED NAME AND TITLE

TYPED NAME AND TITLE

ADDRESS

ADDRESS

CITY, STATE, ZIP

CITY, STATE, ZIP

TELEPHONE

TELEPHONE

*Power of Attorney Must Be Attached.

Subscribed and sworn to this _____ day of _____, 20__.

NOTARY PUBLIC _____ [SEAL]

PERFORMANCE BOND

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

This Performance Bond is tendered to the Cachuma Operation & Maintenance Board (“Board”) in conjunction with the “PROJECT NAME” Project as set forth above.

We, the Principal _____ and _____ a Surety Corporation, organizing existing under and by virtue of the laws of the State of _____ and duly authorized to transact business within the State of California as a surety, are held and firmly bound unto the Board the sum of _____ (\$ _____) lawful money of the United States of America, for the payment of which sum we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above-bound Principal, his/her or its heirs, executors, administrators successors or assigns shall abide by, keep and perform the covenants, conditions, requirements, obligations, and provisions of the aforescribed Project and/or Contract, any alterations thereof, or any regulations or laws pertaining thereto on his/her or their part to be kept and performed at the time in the manner therein specified and if they also indemnify and hold the Board, and its members, officers, agents, employees harmless from all liability, costs, losses, expenses, and attorneys' fees thereon, then this obligation shall become null and void; but otherwise, it shall be and remain in full force and effect.

The Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Project or work to be performed hereunder, or the specifications and drawings that accompany same, shall in any way affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alterations or addition to the terms of the Contract, to the work or Project, or to the drawings and specifications.

Whenever the Principal shall be, and declared by the Board to be in default under the above agreement, the Surety shall promptly remedy the default, or shall promptly pay the amount of the bond herein.

For the satisfactory completion of this Project and the Contract hereunder, the above obligations shall hold good for a period of one (1) year after the completion of the Project and its acceptance by the Board, during which time if Principal shall fail to make full, complete and satisfactory repair and replacements and totally protect the Board from loss or damage made evident during the period of one (1) year from the date of acceptance of the work and resulting from or caused by defective materials or faulty workmanship, the above obligations shall remain in full force and effect. The obligation of the Surety hereunder shall continue so long as any obligation of the Principal remains.

IN WITNESS WHEREOF, this Performance Bond is duly executed by the Principal and Surety above-named on _____, 20____.

PRINCIPAL:

*SURETY:

NAME OF PRINCIPAL

NAME OF SURETY

SIGNATURE

SIGNATURE

TYPED NAME AND TITLE

TYPED NAME AND TITLE

ADDRESS

ADDRESS

CITY, STATE, ZIP

CITY, STATE, ZIP

TELEPHONE

TELEPHONE

*Power of Attorney Must Be Attached.

Subscribed and sworn to this _____ day of _____, 20__.

NOTARY PUBLIC _____ [SEAL]

NOTICE TO PROCEED

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

Date: _____

To (Contractor): _____.

Re: Notice to Proceed - “Project Name”.

Dear **Contractor**,

This letter shall constitute your “Notice to Proceed” with the work on the subject project. This notice is effective the date of this letter subject to all provisions in the contract documents.

The administration of the contract will be handled by our office and the observation of the work will be performed by our Resident Engineer. _____ will provide Project Management services for COMB. All communication and correspondence shall be directed to our Resident Engineer and Project Manager, whom I hereby designate as my authorized representatives.

We look forward to working with you on this project.

Sincerely,

Janet Gingras
General Manager

CC:

SECTION B - GENERAL PROVISIONS MODIFICATIONS

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

B1.01 STANDARD SPECIFICATIONS

The work provided herein shall be performed in accordance with the Standard Specifications for Public Works Construction (SSPWC, or "Greenbook"), 2009 Edition except as modified below. Requirements of the Standard Specifications are intended to be construed in a complementary manner with all other provisions of the Contract Documents. However, in case of conflict between the Standard Specifications versus the Contract Agreement, General Provisions Modifications, Special Provisions or other provisions of these Contract Documents, then in such case the Contract Agreement, General Provisions Modifications, Special Provisions, or other provisions of the Contract Documents shall control over the Standard Specifications. The precedence of Contract Documents shall be as set forth in Paragraph 2-5.2 of the Standard Specifications, as amended in these General Provisions Modifications.

Board or Agency: Cachuma Operation & Maintenance Board.

Design Engineer: Persons and/or company retained by the Board to perform engineering design services.

Engineer: The Project Engineer for the Agency, which may be the COMB Resident Engineer, or a Consulting Engineer as designated by the Agency

COMB: Cachuma Operation & Maintenance Board.

Days: Calendar days.

Schedule of Values: The submittal document referred to in Section 9, Paragraph 9-2 as modified herein of the Standard Specifications.

B1.02 MODIFICATIONS TO STANDARD SPECIFICATIONS [General Provisions Modifications]

Standard Specifications, SSPWC, or "Greenbook": The "Standard Specifications for Public Works Construction," 2009 edition, as set forth in Section B1.01.

SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS AND SYMBOLS

Wherever State Agencies, Departments, or Officers are referred to in the Standard Specifications, the comparable Board, Departments, or Officers are meant thereby for the purpose of these Contract Documents.

Reclamation: United States Bureau of Reclamation.

General Manager: The General Manager of the Cachuma Operation & Maintenance Board or his/her authorized representative(s). Note: Unless otherwise specified, documents or other information to be provided by the Contractor to the Board pursuant to the Contract Documents may be supplied to the General Manager or his authorized representatives.

SECTION 2 - SCOPE AND CONTROL OF THE WORK

Paragraph 2-1 Award and Execution of the Contract
Delete

Paragraph 2-3.2 Self Performance
Delete

Paragraph 2-3.3 Status of Subcontractors

Agent: Shall include the Engineer and other persons and companies retained by the Board to perform design and construction services in relation to the Work other than the Contractor.

Add: When the Engineer determines that subcontracted work is not being prosecuted in a satisfactory manner, the Contractor will be notified to take corrective action. The Engineer will report the facts to the Board. If the Board so orders, and on receipt by the Contractor of written instructions from the Engineer, the subcontractor shall be removed immediately from

the Work. That subcontractor will not again be employed on the Work.

Paragraph 2-5 Plans and Specifications

Subsection 2-5.1 of the SSPWC is replaced by the following subsection.

Paragraph 2-5.1 General

The Contractor will maintain the following at the Work site:

1. One as-built copy of the Plans and Specifications, in good order and marked to record current changes and selections made during construction.
2. The current accepted Contract Schedule.
3. Shop Drawings, Product Data, and Samples.
4. All other required submittals.

The Plans, Specifications, and other Contract Documents will govern the Work. The Contract Documents are intended to be complementary and cooperative and to describe and provide for a complete project. Anything in the Specifications and not on the Plans, or on the Plans and not in the Specifications, will be as though shown or mentioned in both.

Payment for any items on the plans for which there is no specific cost item will be included in the various items of work or in any item to which it is appurtenant.

If the Contractor performs any work which it knows or should know involves an error, inconsistency, or omission without notifying and obtaining written consent from the Engineer, the Contractor will be responsible for the resulting losses, including, without limitation, the costs of correcting defective work. All changes to the plans must be approved in writing by the Engineer.

Paragraph 2-5.2 Precedence of Contract Documents

Add: If there is a conflict between the following listed Contract Documents, the Special Provisions (Section C) shall prevail over these General Provisions Modifications (Section B), and these General Provisions Modifications

(Section B) shall prevail over the Standard Specifications.

Add: If any figured dimensions shown on the plans and in the specifications of the Contract do not agree with scaled dimensions, the contractor shall request clarification from the Engineer. Should it appear that the work to be done, or any of the matters relative thereto, are not sufficiently detailed or explained in the Contract Documents, the Contractor will request clarification from the Engineer for such further explanations as may be necessary, and will conform thereto as part of the Contract so far as may be consistent with the terms thereof. Any items shown on drawings and not mentioned in the specifications will be of like effect as if shown or mentioned in both.

Paragraph 2-5.3.3 Shop Drawings

Add: In addition to the required shop drawings, the Contractor shall submit the following shop drawings and/or submittals in adequate detail, including a list of all deviations from the Contract Documents, to determine the specifications are being met for all including the following:

- Approved SWPPP,
- Approved Traffic Management Plan,
- Approved Erosion Control Plan,
- Unsuitable material disposal plan,
- Clearing and Grubbing materials disposal plan,
- Class 2 Base Course specifications and source,
- Tree well block wall specifications.
- Rock slope protection, streambed sediment, streambed cobble, and streambed boulder specifications and source,
- Concrete mix design, aggregate details, and testing data,
- Rebar drawings and product sheets,
- Asphalt Concrete mix design and aggregate details,
- Grout mix design and manufacturer details,
- Temporary bridge shoring plan,
- Geotextile fabric manufacturer details,
- Anti-Graffiti Coating System,
- Guardrail and components,
- Bridge-rail and components,

- Welder's certification documentation,

The above drawings, lists, prints, specifications, samples, and other data shall become a part of the Contract Documents, and a copy of the accepted shop drawing shall be kept with the job-site Contract Documents, and the fabrications furnished shall be in conformance with the Contract Documents. The Engineer's review of the above drawings, lists, prints, specifications, samples, or other data shall in no way release the Contractor from his/her responsibility for the proper fulfillment of the requirements of this Contract or for fulfilling the purpose of the installation or from his/her liability to replace same, should it prove defective or not conform to other system elements whether supplied by the Contractor, the Agency or existing or fail to meet the specified requirements. The Contractor shall thoroughly review each shop drawing for compliance and compatibility, certify and sign each shop drawing to indicate that a thorough review was made by the Contractor prior to submission for Engineer's review. The Engineer's review is for general conformance to the Contract Documents and no check will be made to confirm dimensions, compatibility with other elements of the Work, or deviations from the Contract Documents which have not been specifically identified by the Contractor. Contractor is responsible for the installation of complete, functional improvements in accordance with the Contract Documents.

Paragraph 2-5.4 Accuracy of Plans and Specifications; Site Conditions; Soil Conditions

Add: Although it is believed that much of the information pertaining to conditions that may affect the cost of the Work will be shown on the Plans or indicated in the Specifications, the Board does not warrant the completeness or accuracy of such information.

The Contractor will carefully study and compare each of the Contract Documents with the others and with information furnished by the Board and will promptly report in writing to the Engineer any errors, inconsistencies, or omissions in the Contract Documents or inconsistencies with applicable law observed by the Contractor.

The Contractor will take field measurements, verify field conditions, and carefully compare with the Contract Documents such field measurements, conditions, and other information

known to the Contractor before commencing the Work. Errors, inconsistencies, or omissions discovered at any time will be promptly reported in writing to the Engineer.

Contractor acknowledges that it: (a) has inspected the site of the Work and the actual conditions existing at the site; and (b) made its own deductions and conclusions as to the nature of the materials to be excavated, the difficulties of making and maintaining the required excavations, the difficulties which may arise from subsurface conditions, and of doing any other work affected by the subsurface conditions and shall accept full responsibility therefor. The Board does not warrant the accuracy or sufficiency of any soil information provided to Contractor.

Contractor's execution of the Contract Agreement shall constitute an acknowledgement that it has relied and is relying upon its own examination of: (a) the site of the Work; (b) the access to the site; and (c) all other data, matters and things requisite to the fulfillment of the Work and on its own knowledge of existing services and utilities on and in the vicinity of the site of the Work to be contracted under the Contract Agreement, and not on any representation or warranty of the Board. No claim for additional compensation will be allowed which is based upon a lack of knowledge of the above items.

Paragraph 2-6.1 Suggestions to Contractor

Add: Any plan or method of work suggested by the Board, Engineer, or agent of the Contractor but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor; and the Board and the Engineer shall assume no responsibility therefore and in no way be held liable for any defects in the work which may result from or be caused by use of such plan or method of work.

SECTION 3 - CHANGES IN WORK

Paragraph 3-3 Extra Work

Subsection 3-3.2.2 (c), Tool and Equipment Rental is modified where the second and third paragraphs are replaced with:

"Regardless of ownership, the rates to be used in determining the equipment usage costs shall not

exceed those listed for the same or similar equipment in the California State Department of Transportation publication of Labor Surcharge and Equipment Rates effective for the period of usage.”

Subsection 3-3.2.3, Mark Up, is deleted in its entirety and replaced by the following subsection:

Paragraph 3-3.2.3 Mark Up

- (a) Work by Contractor. The following percentages will be added to the Contractor's costs and will constitute the markup for all overhead and profits.
 - 1) Labor 20
 - 2) Materials 15
 - 3) Equipment Rental 15
 - 4) Other Items and Expenditures 15

To the sum of the costs and markups provided for in this subsection, 1 percent will be added as compensation for bonding.

- (b) Work by Subcontractors. When all or any part of the extra work is performed by a Subcontractor, the markup established in 3-3.2.3(a) will be applied to the Subcontractor's actual cost of such work. A markup of 5 percent on the subcontracted portion of the extra work may be added by the Contractor.

Paragraph 3-3.3 Daily Reports by Contractor

Change the third sentence of subsection 3-3.3, Daily Reports by the Contractor, to read:

“Failure to submit the daily report by the close of the next working day shall waive the Contractor's right to payment for extra work for that day.”

Add the following paragraph to subsection 3-3.3, Daily Reports by Contractor:

If disagreement continues regarding extra work, the Contractor may seek compensation in accordance with the Claims procedure set forth herein. Daily Reports required by this subsection shall be made part of the Claim as supporting data for the Claim.

Subsection 3-5 is deleted in its entirety and replaced by the following subsection.

Paragraph 3-5 Disputed Work

If the Contractor and the Board do not reach agreement on disputed work, the Board may direct the Contractor to proceed with the work. Any payment for the disputed work will be determined pursuant to the claims procedures established herein. Although not to be construed as proceeding under extra work provisions, the Contractor will keep and furnish records of disputed work as required by the Contract Documents.

All construction claims of \$375,000 or less will be resolved pursuant to the requirements of Public Contract Code Section 20104 et. seq. Any disputed claim in excess of such amount shall be resolved through arbitration conducted in accordance with Code of Civil Procedure Section 1280 et. seq.

Paragraph 3-6 Legal Address and Service of Notice

Add:

- A. Legal Address of the Board - The address of the Board shall be 3301 Laurel Canyon Road, Santa Barbara, CA 93105-2017 or such address as may be subsequently designated by the Board in written notice to the Contractor.
- B. Legal Address of the Contractor - The address of the Contractor shall be such address as may be subsequently designated by the Contractor in written notice to the Board.
- C. Service of Notice
 - i. The delivering of any notice, instruction claim, protest or other written communication personally to the Contractor or his/her representative on the project or to the Board or its representative at his/her office or legal place of business shall constitute service thereof upon the Contractor or the Board respectively.
 - ii. The depositing in a post-paid wrapper directed to the official address of the Contractor or the Board in any post office box regularly maintained by the U.S. Postal Service, of any notice, instruction, claim, protest or other written communication shall be deemed sufficient service thereof upon the Contractor or the Board, respectively and the date of such services shall be considered to be the day

following the date of such mailing.

SECTION 4 - CONTROL OF MATERIALS

Paragraph 4-1.1.1 Retention of Defective Work

Add: If, in the opinion of the Engineer, the defective work is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if, in the opinion of the Engineer, the removal of such work is impractical or will create conditions which are dangerous or undesirable, the Board shall have the right and authority to retain such work instead of requiring it to be removed and reconstructed, but will make such deductions therefore in the payments due or to become due to the Contractor as the Board may deem just and reasonable.

Paragraph 4-1.1.2 Manufacturer or Equipment Recommendations or Instructions

Add: Where the manufacturer of any material or equipment provides written recommendations or instructions for its use or method of installation (including labels, tags, manuals, or trade literature), such recommendations or instructions shall be complied with except for where the Contract Documents specifically require deviations. These documents shall be compiled and submitted to the Board along with all warranties, operations and maintenance manuals upon completion of the work.

Paragraph 4-1.6.1 Submittals for "Or Equal" Items

Add: Along with information supplied by the Contractor regarding equivalency of the bid item, the Contractor shall clearly identify all deviations from the specified item. Deviations discovered by the Engineer after acceptance of an "or equal" item which were not identified by the Contractor with his/her submittal shall be cause for rejection of the "or equal" item. Contractor shall be due no additional compensation in time or money for acceptance or rejection of a proposed "or equal" item and subsequent replacement with the item specified.

In circumstances where the Board determines there is not an acceptable equivalent for specific materials or vendor equipment, it shall obtain a quote from the supplier for materials delivered to the site and list such equipment in the bid-schedule with the unit price and extended total price completed. The Contractor shall verify this quote with the supplier prior to submitting their proposal. The material or equipment shall then

be procured from the specified vendor at that price. Applicable installation, start-up and other work associated with this material or equipment shall be included in the appropriate bid item designated for this work, or if not designated specifically, shall be distributed among other items of work.

SECTION 5 - UTILITIES

Paragraph 5-1.1 Mandatory Notification Prior to Excavation

Add: The Contractor's attention is directed to Section 4216 et. seq. of the Government Code of the State of California. These provisions include a requirement that at least two (2) working days prior to commencing any excavation "Underground Service Alert of Southern California" (USA) shall be notified by phone, toll free 1-800-422-4133, for the assignment of an Inquiry Identification Number.

No excavation shall commence unless the Contractor has obtained the USA Inquiry Identification Number.

The Contractor will also be responsible for notifications in accordance with the requirements of any encroachment permits to utility companies, public agencies, Police, Fire schools and the public.

Paragraph 5-1.2 Accuracy of Utilities Information

Add: The locations of known existing major utilities, whether above ground or underground, are *not* indicated on the plans. Any information and data reflected in the Contract Documents with respect to underground and above ground utilities at or contiguous to the site is based upon information and data furnished to the Board and the Engineer by the owners of such utilities, and the Board does not assume responsibility for the accuracy or completeness thereof. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

It shall be the Contractor's responsibility to determine the location and depth of all underground facilities including service connections which may affect or be affected by his/her operations and he/she shall include the cost to pothole all utilities within the limits of work in his/her bid proposal. If an existing utility line which has been marked by Underground Service Alert or is shown on the plans is damaged by the

Contractor, the Contractor shall repair the line and bear the cost thereof.

In the event that the Contractor damages any existing utility lines that are not shown, shown incorrectly or the locations of which are not made known to the Contractor prior to excavation, a telephone call and written report shall be made immediately to the Utility owner, the Engineer and to the Board. If directed by the Board, repairs shall be made by the Contractor under the provisions for changes and extra work contained in SECTION 3 - CHANGES IN WORK of the SSPWC Standard Specification.

Paragraph 5-2.1 Maintenance of Service

Add: The Contractor shall maintain service of water, sewer, power, gas, telephone and cable TV to all existing users. The Contractor shall install all piping, conduit, wire, pumps and other appurtenances as required for temporary service connections required to maintain service to existing users and shall include this cost in the proposal.

Paragraph C5-5 Delays

Delete the last two paragraphs of Paragraph C5-5 Delays of the SSPWC standard specifications.

SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF THE WORK

Paragraph 6-1.1.1 Notice to Proceed

Add: Within three (3) days following acceptance of Contractor's bonds and insurance certificates, written notice to proceed will be given by the Board to the Contractor. Notwithstanding any other provision of the contract, the Board shall not be obligated to accept or to pay for any work furnished by the Contractor prior to delivery of notice to proceed whether or not the Board has knowledge of the furnishing of such work.

Paragraph 6-1.1.2 Schedule Content

Add: The Contract Schedule and any updated Contract Schedule shall meet the following requirements:

1. Schedules shall be suitable for monitoring progress of the Work.
2. Schedules shall clearly show when discussions by the Board or the Engineer that affect schedule need to be made.
3. Schedules shall be sufficiently detailed to demonstrate adequate planning for the Work.

4. Schedule shall represent a practical plan to complete the Work within the Contract Time.
5. Schedule shall show the critical path for completion of the Work.
6. Schedule shall show and contractor shall provide a five (5) working day written notice to COMB prior to needing COMB or Reclamation personnel for any activity which shall include sampling, and testing.
7. Schedule shall be provided on a single legible 11x17 sheet if feasible.

The Engineer's review of the form and general content of the Contract Schedule and any updated Contract Schedules is for the purpose of determining if the listed requirements are satisfied.

Paragraph 6-1.1.3 Project Schedule

Add: The Contractor shall submit a detailed schedule to the Engineer one week before the Preconstruction Conference. The Contractor shall make revisions as required by the Engineer. Upon acceptance by the Engineer the schedule will become the accepted Construction Schedule. An accepted schedule is required before work may proceed. The schedule shall show the Work spread over the entire contract time available for construction. Schedules showing the project completed in less than the contract time will not be accepted.

The Contractor shall update the Construction Schedule when directed by the Engineer, or when:

- a. A change order significantly affects the contract completion date or the sequence of construction approach or activities.
- b. The actual sequence of the work, or the planned sequence of the work is changed and does not conform to the Contractor's current accepted project Construction Schedule.
- c. The Contractor falls more than ten (10) percentage points behind the schedule based on a comparison of the scheduled value of work to be completed and the sum of the earned progress payments.

The Contractor shall revise and update the Construction Schedule within the progress payment period in which the change in the schedule takes place and shall submit to the Engineer four (4) printed copies of the revised Construction Schedule with his/her monthly progress payment request for that period. Preparation and updating of Construction

Schedule shall be performed at Contractor's sole expense.

Failure by the Contractor to submit updated or revised Construction Schedules when required may prevent acceptance of progress payment requests by the Engineer until such updated or revised Construction Schedules have been submitted for review and have been accepted by the Engineer.

Paragraph 6-2 Prosecution of Work

Replace the last sentence of the first paragraph, to read as follows: "Should Contractor fail to take the necessary steps to fully accomplish these purposes, after order of the Engineer to do so, the Board may suspend the work in whole or in part, until the Contractor takes such steps at no cost to the Board."

Paragraph 6-6.1.1 Schedule Delay

Add: If the Contractor has fallen behind the accepted Construction Schedule by more than fifteen (15) percentage points based on earned progress payments, the Contractor shall take steps, including, but not limited to, increasing the number of personnel, shifts, and/or overtime operations, days of work, and/or amount of construction equipment until such time as the Work is back on schedule. The contractor shall also submit for review no later than the next request for partial payment, such supplementary schedule or schedules as may be deemed necessary to demonstrate the manner in which the rate of progress will be regained. All costs required to bring the Project back on schedule shall be borne by the Contractor without additional cost to the Board.

If the Contractor falls behind the accepted construction schedule, as modified by such time extensions as may have been granted by the Board for unavoidable delays, by more than thirty-five (35) percentage points based on earned progress payments, the Contractor shall be deemed in material breach of Contract and the Work turned over to the performance bond Surety for completion within the scheduled time. See Section 6-5 of the SSPWC.

Paragraph 6-6.1.2 Notice of Delays

Add: Whenever the Contractor foresees any delay in the prosecution of the work, and in any event immediately upon the occurrence of any delay which the Contractor regards as unavoidable, the Contractor shall notify the Engineer in writing of the probability of the

occurrence of such delay and its cause in order that the Engineer may take immediate steps to prevent, if possible, the occurrence or continuance of the delay, or, if this cannot be done, may determine whether the delay is to be considered avoidable or unavoidable, how long it continues, and to what extent the prosecution and completion of the work are to be delayed thereby. It will be concluded that any and all delays which have occurred in the prosecution and completion of the work have been avoidable delays, except such delays as shall have been called to the attention of the Engineer at the time of their occurrence and found by him/her to have been unavoidable.

The Contractor shall make no claims for any delay not called to the attention of the Engineer at the time of its occurrence as an unavoidable delay.

Paragraph 6-6.1.3 Avoidable Delays

Avoidable delays in the prosecution or completion of the work shall include all delays which in the opinion of the Engineer would have been avoided by the exercise of care, prudence, foresight and diligence on the part of the Contractor or his/her subcontractors. The following shall be considered avoidable delays within the meaning of the contract: 1) Delays in the prosecution of parts of the work which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work or the completion of the whole work within the time here specified; 2) Reasonable loss of time resulting from the necessity of submitting samples of materials and drawings to the Engineer for approval and from performing tests of materials, measurements and reviews; 3) Reasonable interference of other contractors employed by the Board and/or other contractors working in the area which do not necessarily prevent the completion of the whole work within the time agreed upon; 4) Delays resulting from inaccurate or incomplete shop drawing submittals; and 5) Interference of other contractors performing concurrent work.

Paragraphs 6-6.2, 6-6.3 and 6-6.4

Replace with the Following:

Paragraph 6-6.2 Extensions of Time

If granted, extensions of time will be based upon the effect of delays to the critical path of the Work as determined by the current accepted Contract Schedule. Delays to minor portions of the Work that do not affect the critical path will not be eligible for extensions of time.

Paragraph 6-6.3 Payment for Delays to Contractor

Any payment for compensable delay will be based upon actual costs as set forth in Subsection 5-5 excluding, without limitation, what damages, if any, the Contractor may have reasonably avoided. The Contractor understands that this is the sole basis for recovering delay damages and explicitly waives any right to calculate daily damages for office overhead, profit, or other purported loss, using different formulas including, without limitation, the Eichleay Formula.

Paragraph 6-6.4 Written Notice and Report

If the Contractor desires payment for a delay or an extension of time, it shall give the Engineer written notice of such request not later than five (5) working days after the event or occurrence giving rise to a delay claim. Failure to submit a written request within such amount of time will result in the Contractor waiving its delay claim.

In no event will the Board grant the Contractor an extension of time if the delay is within the Contract Time as identified by the Contract Documents.

Paragraph 6-7.1.1 Punch List Completion

Add: The Contractor shall complete all punch list items within 14 days of the final job walk. If the Contractor fails to complete the punch list work within this period, the Board may hire another Contractor to complete the work and deduct the costs of such work from future payments.

Paragraph 6-7.1.2 Contract Period

Add: The Contractor shall prosecute the work so that all portions of the project shall be completed by the following dates: November 1, 2016 for all in-stream work, November 15, 2016 for substantial completion, and December 2, 2016 for final completion.

Paragraph 6-7.4 Working Hours

Add: Work on other than "working days" as defined in Paragraph 6-7.2 or work between the hours of 5 P.M. and 7 A.M. of the following day is not permitted unless specifically required by the Contract Documents or unless the Contractor receives prior written approval from the Engineer. When in the vicinity of residential properties no

significant noise producing activity, as determined by the Engineer, is allowed outside of these designated working hours.

Paragraph 6-8 Completion and Acceptance

Add: After the first paragraph:

All punch list items shall be completed during the contract period. Failure to do so will not be considered an occasion of unavoidable delay. The effective date of acceptance of the work for purposes of determining commencement of the Guarantee Period shall be date of issuance of the Notice of Completion which will occur within 10 working days of completion of all punch list items.

Paragraph 6-8.1 Final Job Walkthrough Meeting

Add: The Contractor shall attend the Final Job Walkthrough Meeting to be held prior to final payment at a time designated by the Engineer.

The Contractor shall provide the following at the final job walkthrough meeting:

1. Contract Documents
2. All tools and labor to inspect the Contractors work

Full compensation for schedules and meetings shall be considered incidental to the project and no separate payment shall be made. All costs related to schedules and meetings shall be included in the various other applicable items of work.

Paragraph 6-9: Delete and insert the following:

Paragraph 6-9.1 Liquidated Damages

Consistent with Article 2 of the Contract Agreement, for each and every day that any portion of the work remains unfinished after the time fixed for final completion in the Contract Documents (December 2, 2016) as modified by any extension of time granted, damage will be sustained by the Board. It is determined in advance and agreed to by the parties hereto that the Contractor will pay the Board the amount of damages set forth herein as representing a reasonable forecast of the actual damages which the Board will suffer by the failure of the Contractor to complete the work within the stipulated time. The execution of the agreement shall constitute acknowledgment by the Contractor that he/she has ascertained and agrees that the Board will actually suffer

damages in the amount herein fixed for each and every day during which the completion of the work is avoidably delayed beyond the stipulated completion date, and that these damages are levied in compliance with Government Code Section 53069.85.

Unless otherwise provided in the Contract Documents, the Contractor shall have no claim or right of action against the Board for damages, costs, expenses, loss of profits, or otherwise because or by reason of any delay in the fulfillment of the contract within the time limited therefore occasioned by any cause or event within or without the Contractor's control, and whether or not such delay may have resulted from anything done or not done by the Board under the contract.

Damages for avoidable delays shall be in the amount of **\$750.00** for each consecutive calendar day in excess of the time specified for final completion of the work.

Paragraph 6-11 Guarantee

Add: The Contractor shall warrant and guarantee the entire Work and all parts thereof, including that performed and constructed by subcontractors and others employed directly or indirectly on the Work, against faulty or defective materials, equipment or workmanship for a period of one (1) year from the date of acceptance of the Work. In addition thereto, for a period of one (1) year commencing on the date of acceptance of the Work, the Contractor shall, upon the receipt of notice in writing from the Board, promptly make all replacements or repairs arising out of defective materials, workmanship or equipment and bear the cost thereof. Such Work shall be completed in a manner satisfactory to Board and within the time set forth in the Notice. The Board is hereby authorized to make such replacements or repairs and the Contractor and its performance bond Surety shall bear the cost thereof if, ten (10) days after the giving of such notice to the Contractor, the Contractor has failed to make or undertake with due diligence the repairs or has failed to complete the Work in a manner satisfactory to the Board; provided, however, that, in the case of an emergency where, in the opinion of the Board, delay could cause serious loss or damage, replacements or repairs may be made without notice being sent to the Contractor or Surety, and all expense in connection therewith shall be charged to the Contractor and Surety.

For the purpose of this article "Acceptance of the Work" shall mean the acceptance of the Work by the Board in accordance with Paragraph 6-8 but

not for the purpose of extinguishing any covenant or agreement on the part of the Contractor to be performed or fulfilled under this Contract which has not in fact been performed or fulfilled at the time of such acceptance, all of which covenants and agreements shall continue to be binding on the Contractor until they have been fulfilled.

The effective date of acceptance of the Work and commencement of the Guaranty Period shall be the date of issue of the Notice of Completion.

SECTION 7 - RESPONSIBILITY OF THE CONTRACTOR

Paragraph 7-2.2.1 Overtime and Shift Work

Add: Overtime and shift work may be established as a regular procedure by the Contractor only with the written permission of the Engineer. Such permission may be revoked at any time. No work other than overtime and shift work established as a regular procedure shall be done between the hours of 5:00 p.m. and 8:00 a.m., nor on Saturdays, Sundays or legal holidays, except such work as is necessary for the proper care and protection of the work already performed or except in case of an emergency.

All costs for overtime inspection, except those occurring as a result of overtime and shift work established as a regular procedure, shall be paid by the Contractor. Overtime inspection shall include inspection required during holidays observed by the AGC and Trade Unions, Saturdays, Sundays, and any weekday between the hours of 5:00 p.m. and 8:00 a.m.. Such costs will include but will not necessarily be limited to engineering, inspection, general supervision and other overhead expenses which are directly chargeable to the overtime work. All such charges shall be deducted by the Agency from payments due the Contractor.

Paragraph 7-3 Liability Insurance

Delete and replace with Insurance Requirements for Contractor, which forms part of the Contract Documents.

Paragraph 7-4 Workers' Compensation Insurance

Add to the last paragraph:

The Contractor and all subcontractors shall cover or insure all of their employees working on or about the construction site regardless of whether such coverage or insurance is mandatory or

merely elective under the law.

Coverage value shall be: \$1,000,000

Workers' Compensation Insurance and Employer's Liability

Paragraph 7-6 The Contractor's Representative

Add the following language:

The Contractor's representative shall be designated at the pre-construction conference and cannot be changed thereafter without the consent of the Engineer.

The Contractor's Representative shall be the Construction Manager, designated by Contractor, as set forth in Article 1 of the Contract Agreement, unless otherwise designated by Contractor and approved by the Board.

Paragraph 7-6.1 Pre-Construction Conference

Add: A pre-construction conference will be held at a time and place to be designated by the Engineer. The Contractor's project manager and Representative and representatives of significant sub-contractors for this project shall attend. The Engineer will advise the Contractor as to which sub-contractors are deemed significant. Note that the project schedule shall be submitted seven (7) calendar days prior to the Pre-Construction Conference.

Paragraph 7-6.1 Weekly Meetings

Add: Engineer will hold weekly progress meetings. The Contractor's Representative and project representatives from the active subcontractors shall attend these meetings. The contractor shall be prepared to address any outstanding issues from previous meetings and provide a list of activities from the previous week and a forecast of tasks to be accomplished in the following two weeks. The Engineer will prepare agendas and minutes for these meetings.

Paragraph 7-8.1.1 Work Area Appearance

Add: The Contractor shall maintain a neat appearance to the Work.

All unsuitable construction materials and rubbish and debris shall be regularly removed from the job site, be transported to a suitable location and be disposed of in a proper and legal manner.

Paragraph 7-8.6.3 Storm Water Pollution Prevention Plan (SWPPP)

Water pollution control work shall conform to the provisions in Section 7-8.6, "Water Pollution Control," of the Standard Specifications and these special provisions. This project lies within the boundaries of the Central Coast Regional Water Quality Control Board (RWQCB). The Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP), file a Notice of Intent (NOI), and pay permit fees as required under the Construction Activities General Permit (General Permit).

The Contractor shall implement, monitor and maintain storm water pollution prevention measures in accordance with requirements of the Regional Water Quality Control Board General Permit and the approved SWPPP.

The SWPPP shall be prepared in conformance with the requirements of the Regional Water Quality Control Board, the General Permit, and in conformance with Caltrans "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual," and Caltrans "Construction Site Best Management Practices (BMPs) Manual," including addenda to those permits.

The Contractor shall be responsible for penalties assessed or levied on the Contractor or the Board as a result of the Contractor's failure to comply with the provisions in this section, including, but not limited to, compliance with the applicable provisions of the Permit, the Manuals, and Federal, State and local regulations and requirements as set forth therein. Penalties as used in this section shall include fines, penalties and damages, whether proposed, assessed, or levied against the Board or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred in settlement for alleged violations of the Permit, the Manuals, or applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, in mitigation or to remediate or correct violations.

Upon the Engineer's approval of the SWPPP, the SWPPP shall be considered to fulfill requirements for development and submittal of a SWPPP. No work, having potential to cause water pollution, shall be performed until the SWPPP has been approved by the Engineer. Approval shall not constitute a finding that the SWPPP complies with applicable requirements of

the Permit, the Manuals and applicable Federal, State and local laws, regulations, and requirements.

The Contractor shall designate a Water Pollution Control Manager qualified and authorized by the State and Regional Water Quality Control Board in the preparation and implementation of SWPPPs. The Water Pollution Control Manager shall be responsible for the preparation of the SWPPP and required modifications or amendments, and shall be responsible for the implementation and adequate functioning of the various water pollution control practices employed. The Contractor may designate different Water Pollution Control Managers to prepare the SWPPP and to implement the water pollution control practices. The Water Pollution Control Managers shall serve as the primary contact for issues related to the SWPPP or its implementation. The Contractor shall submit to the Engineer a statement of qualifications, describing the training, previous work history and expertise of the individual selected by the Contractor to serve as Water Pollution Control Manager. The Water Pollution Control Manager shall have a minimum of 24 hours of formal storm water management training or certification as a Certified Professional in Erosion and Sediment Control (CPESC). The Engineer will reject the Contractor's submission of a Water Pollution Control Manager if the submitted qualifications are deemed to be inadequate.

The SWPPP shall incorporate water pollution control practices in the following categories:

- A. Soil stabilization.
- B. Sediment control.
- C. Wind erosion control.
- D. Tracking control.
- E. Non-storm water management.
- F. Waste management and materials pollution control.

Construction Erosion Control Measures

Unless otherwise specified, upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, removing, and disposing of the water pollution control practices specified in the SWPPP and in the amendments. Unless otherwise directed by the Engineer, the Contractor's responsibility for SWPPP implementation shall continue throughout temporary suspensions of work.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved SWPPP or amendments, the deficiency shall be corrected immediately unless requested by the Contractor and approved by the Engineer in writing, but shall be corrected prior to the onset of precipitation. If the Contractor fails to conform to the provisions of this section, the Engineer may order the suspension of construction operations until the project complies with the requirements of this section.

Implementation of water pollution control practices may vary by season. The Caltrans Construction Site BMPs Manual and these special provisions shall be followed for control practice selection of year-round, rainy season and non-rainy season water pollution control practices. Erosion control features identified on the project plans minimally address erosion control and are not necessarily adequate to address water pollution prevention requirements.

Contractor shall maintain construction erosion control program until post construction erosion control measures are placed and seeded areas become adequately established to prevent erosion.

Year-Round Implementation Requirements

The Contractor shall have a year-round program for implementing, inspecting and maintaining water pollution control practices for wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control. Contractor shall have materials available on-site and adequate labor resources to implement sediment control measures should rain be predicted.

The National Weather Service weather forecast shall be monitored and used by the Contractor on a daily basis. An alternative weather forecast proposed by the Contractor may be used if approved by the Engineer. If precipitation is predicted, the necessary water pollution control practices shall be deployed prior to the onset of the precipitation.

Disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continue to occur or will occur during the ensuing 21 days. Non-active areas shall be protected as prescribed in the Caltrans Construction Site BMPs Manual within 14 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

In order to provide effective erosion control, the Contractor may be directed by the Engineer to apply permanent erosion control in small or multiple units.

Rainy Season Implementation Requirements

Soil stabilization and sediment control practices shall be provided throughout the rainy season, defined as between October 15 and April 15. For construction activities beginning during the rainy season, the Contractor shall implement applicable soil stabilization and sediment control practices.

Soil stabilization and sediment control materials shall be maintained on site in sufficient quantities to allow protection of disturbed soil areas. A detailed plan for the mobilization of sufficient labor and equipment shall be maintained to deploy the water pollution control practices required to protect disturbed soil areas prior to the onset of precipitation.

To ensure the proper implementation and functioning of water pollution control practices, the Contractor shall regularly inspect and maintain the construction site for the water pollution control practices identified in the SWPPP. The construction site shall be inspected by the Contractor as follows:

- A. Prior to a forecast storm.
- B. After a precipitation event which causes site runoff.
- C. At 24 hour intervals during extended precipitation events.
- D. Routinely, a minimum of every 5 work days.

The Contractor shall use the Storm Water Quality Construction Site Inspection Checklist or an alternative inspection checklist provided by the Engineer. One copy of each site inspection record shall be submitted to the Engineer within 24 hours of completing the inspection.

Analytical Requirements

In compliance with the General Permit or approved SWPPP prepared by the Contractor, there may be a requirement of the Contractor to implement specific sampling and analytical procedures to determine whether BMPs implemented on the construction site are:

- A. Preventing pollutants that are known or should be known by permittees to occur on construction sites that are not visually detectable in storm water discharges, to

cause or contribute to an exceedance of water quality objectives, and

- B. Preventing further impairment by sediment in storm waters discharged into water bodies listed as impaired due to sediment, siltation or turbidity.

Paragraph 7-12 Advertising

Delete.

SECTION 8 - FACILITIES FOR AGENCY PERSONNEL

Delete. No facilities are required for Board personnel.

SECTION 9 - MEASUREMENT AND PAYMENT

Paragraph 9-2 Lump Sum Work

Items for which quantities are indicated as "lump sum," in the Cost Schedule will be paid for at the price indicated in the Cost Schedule. Such payment will be full compensation for all costs for labor, equipment, materials and plant necessary to furnish, construct and install the lump sum item of work, complete, in place, and for all necessary appurtenant work, including, but not limited to, all necessary cutting, patching, repair and modification of existing facilities, and cleanup of site.

If requested by COMB, Contractor shall furnish three copies of a detailed Schedule of Values which breaks down the lump sum work into its component parts and cost for each part, in a form and sufficiently detailed as to satisfy Engineer that it correctly represents a reasonable apportionment of the lump sum. This schedule is subject to approval by Engineer as to both the components into which the lump sum item is broken down, and the proportion of cost attributable to each component. If a more detailed Bid Schedule is not requested by COMB, the proposed Bid Schedule submitted by the Contractor may become the basis for progress payments.

This schedule will be the basis for progress payments for the lump sum work and shall be submitted to the Engineer for review and revisions sufficiently in advance to allow acceptance by the Engineer prior to submittal of the first progress payment request.

Paragraph 9-3.1.1 General Description of the Work

Add: Payment for Work conforming to the Standard Specifications and all the General and Special Provisions Modifications as stated in these specifications shall be considered to be included in the Contract lump sum price for the items of Work bid and shall include all costs for labor, materials, and equipment required for the execution of the Work unless otherwise set forth.

Paragraph 9-3.2 Partial and Final Payment

Add: Contractor shall furnish monthly progress payment requests to the Board.

The Board will retain five percent (5%) of any progress payment as retention for the protection and payment of any person or persons, mechanics, subcontractor, or material men who shall perform any labor upon the Contract or work thereunder, and all persons who shall supply such person or persons or subcontractors with components and supplies for carrying on such work. Retention can also be used for correction of defective work if Contractor refuses to perform corrective work after being so directed by Board.

Withholding and disbursement of retention proceeds shall be done in accordance with Public Contract Code Sections 7107 and 7201.

Contractor's attention is drawn to Public Contract Code Section 7200, relating to retention proceeds and the furnishing of bonds by and for

subcontractors.

No progress payment made to the Contractor or its sureties will constitute a waiver of the liquidated damages specified in Paragraph 6-9.

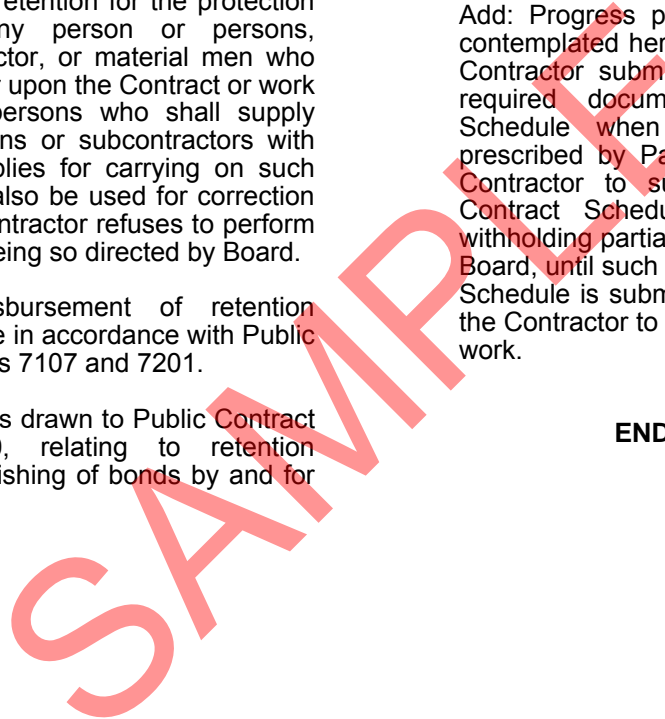
A final balancing Change Order will be issued prior to submission of final pay request to incorporate all quantity variances from bid quantities into the final contract amount.

In accordance with Section 22300 of the California Public Contract Code, the Contractor will have the option of posting securities of equal or greater value in lieu of a cash retention.

Paragraph 9-3.2.2 Withholding Progress Payment

Add: Progress payment paid by the Board as contemplated herein, will be contingent upon the Contractor submitting, in addition to any other required documents, an updated Contract Schedule when required and in the form prescribed by Paragraph 6-1.2. Failure of the Contractor to submit an acceptable updated Contract Schedule will result in the Board withholding partial payment, without liability to the Board, until such an acceptable updated Contract Schedule is submitted. Nothing herein will allow the Contractor to suspend or slow progress of the work.

END OF SECTION



SECTION C - SPECIAL PROVISIONS – TECHNICAL
PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

SECTION D – DESIGN DRAWINGS

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

SECTION E – PROJECT PERMITS and PLANS

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

Permits:

Project Plans:

SECTION F – GRANT AGREEMENT

PROJECT: CACHUMA OPERATION & MAINTENANCE BOARD – (PROJECT NAME)

Project Grant Agreements:

CACHUMA OPERATION & MAINTENANCE BOARD

BOARD MEMORANDUM

Date:	March 27, 2017
Submitted by:	Janet Gingras

SUBJECT: Long-Term Pumping Facility Alternatives Study - Emergency Pumping Facility (EPF)

SUMMARY:

In November 2016, the Board of Directors approved a proposal for phase one professional engineering services to be conducted by HDR Engineering, Inc. (HDR) for the EPF long-term pumping facility alternatives. The tasks included the design of secured EPF pipelines (part 1 and part 2), project management, preliminary pipeline engineering, hydraulic and transient analysis, and geotechnical analysis. As previously assured, COMB hosted a meeting for the South Coast Member Agency General Managers and technical staff to discuss the results of the Long-Term Pumping Facility Alternatives Study produced and presented by Dan Ellison. The report examines alternatives for long-term pumping facilities when water at Lake Cachuma becomes too low for gravity flow to the Tecolote Tunnel.

The temporary floating pump station and two miles of pipeline have recently been removed from service, approximately three years after the initial design of the facility. Although the facility has been removed from service, both the pipeline and floating pump station remain at the lake. COMB has the option of (1) acquiring these items (all or part), (2) continuing to pay the contractor to rent to maintain them, (3) direct the contractor to remove all materials, or (4) a combination thereof. The pipeline and pump station can be acquired now at a reduced cost, but the need for these facilities may not return for at least two years or perhaps longer.

At the technical meeting, Dan Ellison, Project Engineer from HDR Engineering, Inc., presented the six facility alternatives as outlined in the table below.

Matrix of Facility Alternatives Studied

	Existing Floating PS (COMB Owned)	New Floating PS (Contractor Owned)	New Secured PS (COMB Owned)
Floating Pipeline	Not recommended	Alternative 1	Not recommended
Secured Pipeline	Alternative 2	Not recommended	Alternative 3

Mr. Ellison will present summary findings during the presentation to the Board of Directors.

Subsequent to the presentation and lengthy discussion among the technical staff and the Project Engineer, a favorable option emerged which was to explore was a combination of alternatives. The idea of leasing key components from the barge with an option of purchasing them so they may potentially be used for future drought conditions was found to be of most interest to the group. The notion of securing essential items from the temporary facility which could be re-deployed by the contractor within a short time frame (90 days) seemed to be a viable approach without committing to a single project alternative at this time. Cushman Contracting, Inc. has quoted a monthly rental price of \$13,500 for short-term retention of these components. The cost for a long-term lease with an option to purchase the components has not been confirmed with the Contractor. In the meantime, staff is recommending renting the components in the interim at the quoted price.

While the concept of the secured pipeline and pump station was well received, the timing of the financial commitment from the participating Member Agencies could not be rationalized in the face of already strained budgets.

FISCAL IMPACTS:

The expenditure affiliated with leasing components of the system with an option to purchase is included in the fiscal year 2016-17 operating budget for the Emergency Pumping Facility Project. The cost to purchase the components at the end of the lease (April 2018) and re-establish a temporary pumping facility within 90 days would be budgeted in the fiscal year 2017-18 operating budget.

ENVIRONMENTAL:

The participating Member Agencies encouraged staff to continue the effort on securing the environmental and permitting documents necessary to implement a secured pipeline and secured pump station in the future.

COMMITTEE STATUS:

The Operations Committee reviewed the draft report, followed the presentation, discussed the alternatives with the Project Engineer and technical staff; and forwards a contract change order as stated below to the Board with a recommendation to approve.

RECOMMENDATION:

The Board of Directors receive and file the final HDR report and authorize the General Manager to:

- 1) Continue the effort on securing the environmental and permitting documents necessary to implement a secured pipeline and secured pump station in the future.
- 2) Execute a change order terminating the existing standby rate as of April 1, 2017 and establish a monthly payment of \$13,500 for rental of key equipment (as defined below), to be applied for up to two months, pending negotiation of a future change order which will include a one-year lease of the key equipment, an option for its purchase after one year, and a firm price for reinstallation and commissioning of the Emergency Pumping Facility (EPF). The key equipment shall be all items needed to re-establish the EPF within 90-days, including:
 - Shipping container and all associated electrical equipment
 - On-shore electrical switchboard and automatic transfer switch
 - Electrical conductor cables
 - Pumps
 - Steel manifold pipe and all valves
 - Fish screens

The future change order will be presented to the Board through the Operations Committee.

LIST OF EXHIBITS:

- 1) Long-Term Pumping Facility Alternatives Study

EMERGENCY PUMPING FACILITY PROJECT FY 2016/2017

Attachment A

AS OF: 2/28/2017

FY 16/17 APPROVED BUDGET

Emergency Pumping Facility Project

ACCT #6120

\$ 2,160,374.00 Total Budget Approved FY 16/17

FY 16/17 EMERGENCY PUMPING FACILITY PROJECT				
CONSULTANTS	BUDGET	EXPENDED	BALANCE	Description
Cushman Contracting	2,060,374.00	1,379,464.84	680,909.16	Construction - Phase II/Operations
HDR Engineering	100,000.00	67,320.06	32,679.94	Contract Management tasks
Musick, Peeler & Garrett	-	437.00	(437.00)	Legal costs
American Riviera Bank	-	7,045.23	(7,045.23)	Loan fees/Interest (CVWD/GWD/MWD)
Misc	-	-	-	Materials, supplies, Permits, etc.
Totals	\$ 2,160,374.00	\$ 1,454,267.13	\$ 706,106.87	

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.
Totals	\$ 2,709,250.00	\$ 2,240,882.96	\$ 468,367.04	

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.
Totals	\$ 4,125,565.00	\$ 4,125,565.00	\$ 0.00	

*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/RFP-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
Totals	\$ 986,000.00	\$ 917,292.25	\$ 68,707.75	

COMBINED FY 13/14; 14/15; 15/16 & 16/17 Totals			
BUDGET	EXPENDED	BALANCE	
\$ 9,981,189.00	\$ 8,738,007.34	\$ 1,243,181.66	



Long-Term Pumping Facility Alternatives Study

Cachuma Operations and Maintenance Board

Secured Pipelines Project
Preliminary Engineering Report

March 2017





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Report Summary

This report examines alternatives for long-term pumping facilities when water at Lake Cachuma is too low for gravity flow to the Tecolote Tunnel. A temporary floating pump station and 2-mile pipeline were recently removed from service, about 3 years after design of this facility started. With the lake currently less than half full, the need for a similar facility could return quickly. This “Emergency Pumping Facility” (EPF) was the second to be constructed in the last 30 years. In the future, a more frequent need for these facilities is foreseen, due to changes in climate and changes in how water from the lake will be allocated.

Although the EPF has been removed from service, both the pipeline and floating pump station remain at the lake. COMB has the options of (1) acquiring these items (all or part), (2) continuing to pay the EPF Contractor to rent and maintain them, or (3) directing that they be removed. The pipeline and pump station can be acquired at a much reduced cost, but the need for these facilities will not return for at least one or two years—perhaps much longer.

This report examines alternative pumping facilities for the next drought. Because the EPF was implemented on an emergency basis, it was designed to be permitted and constructed quickly. This resulted in a facility that was difficult to operate and maintain. A particular issue was keeping the floating barge and floating pipeline securely in position. With changes in lake level, the floating pumping barge had to be moved to different locations, and the pipeline had to be lengthened or shortened. Although the EPF served its purpose, many lessons have been learned over the last two years. COMB now has time to plan, design, and permit a facility that better matches long-term needs.

Future Facility Alternatives

Pump station (PS) alternatives for the next drought are:

- **Existing Floating Pump Station.** COMB could acquire the existing pump barge, store and maintain it. When needed, it would be re-installed and operated by COMB.
- **New Floating Pump Station.** A new floating pump station could be acquired when needed. Similar to the EPF, the facility would likely be owned and operated by a contractor.
- **New Secured Pump Station.** COMB could construct own, and operate a shore-mounted pump station.

Pipeline alternatives for the next drought are:

- **Temporary Floating Pipeline.** This would likely be similar to the EPF pipeline; owned and maintained by a contractor.
- **Secured Pipeline.** This pipeline would be at the lake bottom, ballasted by concrete collars. This pipeline would be owned by COMB.

These facility alternatives create six possible system alternatives. This report studied three of these alternatives, as shown in the following matrix (Table 1).



Table 1. Facility Alternatives Studied

	Existing Floating PS (COMB Owned)	New Floating PS (Contractor Owned)	New Secured PS (COMB Owned)
Floating Pipeline	Not recommended	Alternative 1	Not recommended
Secured Pipeline	Alternative 2	Not recommended	Alternative 3

For reasons discussed later, the following alternatives are not recommended for consideration:

- COMB-Owned Floating Pipeline (too difficult to manage)
- COMB-Owned *New* Floating PS (the current one is far less expensive than a new one)
- Indefinite facility rental (too costly--the facility will not be needed for at least two years)
- Long-term storage of pipeline (logistically difficult for only minor cost savings)
- Contractor-owned PS with secured pipeline (provides no particular advantage and operational costs are high)

Recommended Long-term Pumping Facility

The analysis presented in this report shows the most economical alternative is likely a secured pipeline with a secured pump station (Alternative 3). This alternative provides the lowest long-term cost, assuming a pumping facility is required at least one more time in the next 30 years.

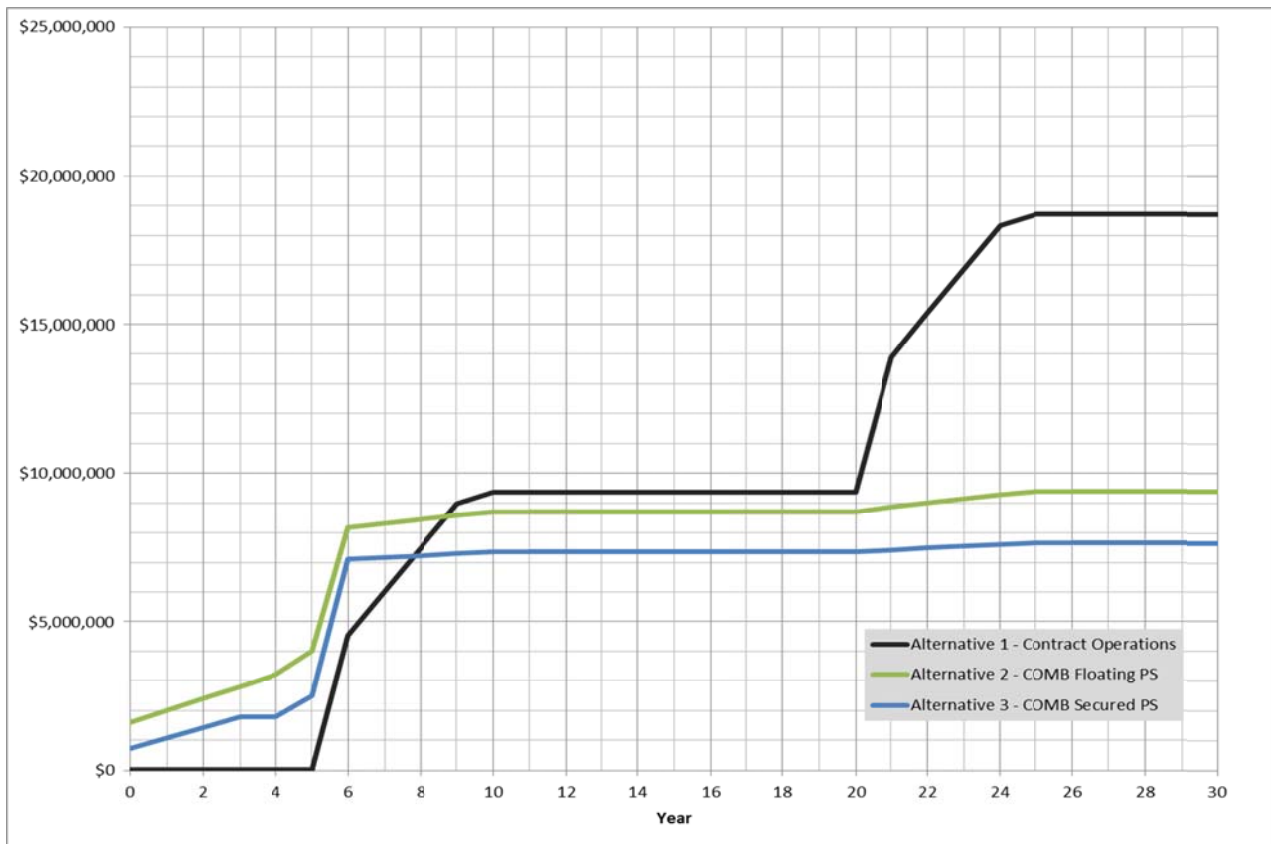


Figure 1. Comparison of Life-Cycle Costs

Figure 1 graphically summarizes the cost analysis, and is based on specific assumptions regarding when the facility would be needed and how long it would be used. While different assumptions will produce different numerical results, several important conclusions can be drawn from this graph:

- Initially lower in cost, Alternative 1 becomes more expensive after about 20 months of operations. It is also more costly to decommission.
- If a pumping facility is needed a second time, the cost advantage of Alternative 3 becomes much greater.
- When not in use, Alternative 3 requires little maintenance; it would not be a long-term burden on COMB. A floating pump station, on the other hand, will require regular maintenance, even when not in service.

The suggested capital budget of approximately \$7 million includes allowances for engineering, administration, permits and contingency. As a point of comparison, costs to date for the EPF facility have totaled over \$8.7 million. Most of this cost can be deferred until the need for the facility becomes more apparent. However, a near-term investment in some EPF equipment (e.g., electrical equipment and fish screens) is recommended, since it can be acquired at “fire-sale” prices. This equipment can be reused for any of the alternatives, and does not commit COMB to any particular action. The cost of this equipment is approximately \$200,000 to \$400,000.

Moreover, continued work on environmental clearance for the secured pipeline should be considered, as this could take many months to complete, and would need to be in hand before starting construction. Taking this action keeps all options available.

Other recommendation from this study include:

- COMB should direct the removal of the EPF pipeline and pump station materials from the lake, except those items which can be used for the new project.
- COMB should defer action on Part 2 of the Secured Pipeline Project (the connection to Central Coast Water Authority - CCWA). With the higher lake level, this pipeline is less beneficial than a few months ago and can no longer be constructed as economically.

Background

This study began as a preliminary design report for the “Secured Pipelines Project”, which envisioned a pipeline at the bottom of the lake consisting of two parts. The “Part 1 Pipeline” would extend from a pumping barge located near the County campground to the Tecolote Tunnel. The “Part 2 Pipeline” would extend from the pumping barge to the Bradbury Dam spillway, where it would connect to the Central Coast Water Authority (CCWA) pipeline that conveys State Water Project (SWP) water to the lake. With lake levels at historically low levels, there seemed to be an opportunity to construct both of these pipelines in trenches, at substantially reduced cost.

Construction of the Part 1 Secured Pipeline was easily justified based on economics. Constructing this pipeline avoids the need to reconstruct a temporary pipeline every time a pumping facility is required, and it avoids costs associated with moving the pumping barge back and forth, and disconnecting, storing, and removing the materials from the site. It also enables COMB to take ownership of the pumping facility, eliminating monthly fees paid to the contractor. Non-monetary benefits include: (1) fewer planned and unplanned service interruptions, (2) improved safety for boaters, and (3) enhanced public enjoyment of the lake.

Construction of the Part 2 Secured Pipeline was more difficult to justify. To date, such a pipeline has never been needed and there is no guarantee it ever will. But by providing a means for SWP water to bypass the lake, the Part 2 pipeline provided insurance against various events that might prevent the lake from being used for SWP water conveyance. Among these possible events are:

- Physical impediments
 - Lake contamination (natural, accidental, or terrorism)
 - Catastrophic pump station malfunction (fire, barge sinks, or terrorism)
 - Very low lake level (shrinkage of the minimum pool or penstock valve malfunctions)
- Litigation impediments
 - Disputes regarding “stranded water”
 - Future biological opinions regarding issues with imported water, temperature, lake water temperature, or other
 - Disputes regarding pumping from the “minimum pool”
 - Disputes regarding use of Bureau facilities for non-project use
 - Other disputes that may arise in the next 50 years

Because the Part 2 pipeline would make use of surplus material from the EPF, the cost of the Part 2 Pipeline was relatively inexpensive. If constructed concurrently with the other pipeline, the Part 2 Pipeline also took advantages of economies of scale. Costs could be saved on design, permitting, and construction, by tackling both pipelines together. When the lake level was low, about 80 percent of the Part 2 Pipeline could be constructed on a dry exposed lake shelf.

A Project Description for the Secured Pipelines Project was prepared to facilitate acquisition of permits, preparation of environmental (CEQA / NEPA) documentation, and the pursuit of grant funding. This document described in greater detail the purpose, necessity, and benefits of

these pipelines and provided criteria for their design. Pursuant to this project, in December 2016, COMB authorized HDR to prepare a preliminary design report that would better refine design concepts and costs.

The Secured Pipelines Project originally envisioned a floating pump station, located near the County Campground, connected to a lake-bottom pipeline extending to the Tecolote Tunnel. Although not directly discussed in the Project Description, the floating pump station was assumed to be the EPF facility currently at the lake. Contract provisions allow COMB to acquire this pump station at a cost of \$724,000, whereas construction of a similar facility would cost approximately \$2.3 million. Earlier analysis had demonstrated that long-term COMB ownership of the pump station made economic sense, given the monthly fee paid to the EPF Contractor for operations was \$124,000.

Two events altered this course:

- (1) The rapid rise in the lake level changed several important conditions. A secured pipeline was no longer an immediate need, and how such a pipeline would be constructed changed. Costs of construction will now be higher.
- (2) A different concept for the pump station was developed, in recognition that a floating pump station is not ideal.

The dramatic increase in lake elevations this January and February may have only “paused” the need for pumping. Pumping could be needed again relatively soon. With no major storms in the forecast, the lake level on April 1 will be shy of the 720-ft level. The last time the lake was at a similar elevation, COMB was only 7 months away from starting the EPF project and was 2 years away from its operation (Figure 2).

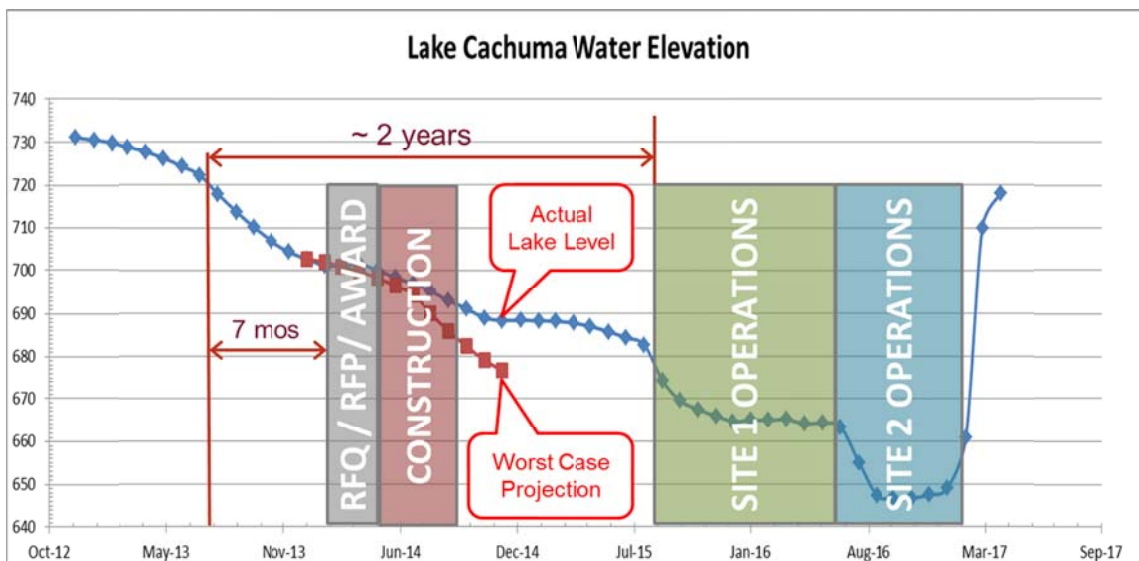


Figure 2. Recent Lake Levels and Pumping Barge Operations

Pump Station Alternatives

The pump station alternatives for the next drought are:

- **Existing Floating Pump Station.** As soon as practical, COMB would acquire the existing pump barge. The facility would be stored on the lake or partially dismantled and stored on-shore. For future droughts, COMB would install and operate this facility.
- **New Floating Pump Station.** A new floating pump station would be constructed when needed. Similar to the EPF, the facility would be owned and operated by a contractor. EPF plans might be used for construction.
- **New Secured Pump Station.** COMB would construct (by contract), own and operate a shore-mounted pump station.

Existing Floating Pump Station

The original concept for the Secured Pipelines Project envisioned eventual COMB acquisition of the existing pumping barge. COMB ownership would save the monthly operational fee, which would quickly pay for the cost its acquisition. Moreover, with a secured pipeline, there would be no need to move the pump station back and forth between locations on the lake, which saved costs and reduced risks. Maintenance could be handled through the acquisition of modest additional resources.

In further developing this concept, several disadvantages of pumping barge ownership became more apparent:

- **Equipment maintenance.** Eliminating the floating pipe did not eliminate all maintenance difficulties associated with a floating pump station. When a pump needs replacement or similar work is required, a barge-mounted crane is required. Mobilizing such equipment can be difficult, costly, and time consuming, particularly with launching facilities impaired by low water levels.

Adding to this concern is the fact that the pump station was not designed for long-term operations. Although the facility is well-constructed, its equipment and materials were selected for short-term operations, and are not always well-protected from sun and water.

- **Barge maintenance.** The “flexifloat” rafts that make up the barge require occasional inspection and recoating, meaning the facility would need to be removed periodically from the water. To do this, the facility would likely need to be partially dismantled. Figure 3, which shows the EPF pumping barge under construction, illustrates some of the complexity involved in dismantling for maintenance.
- **Pump operations.** The EPF Contractor selected pumps based on what was readily available and easy to construct; as a result, operations can be difficult. Following power outages, the Contractor has had to dispatch an operator to manually restart the facility. This

is partly due to problems maintaining the prime on the pumps and keeping the water in the pipeline from draining.



Figure 3. Photo of EPF Pump Station during construction. Not shown is the shipping container that houses the electrical switchgear and variable frequency drives and a wooden platform constructed across the center opening.

- **Connecting a floating pump station to a fixed pipe.** Design concepts which would allow a pump station to move up and down as lake elevations change, also present operations and maintenance difficulties, particularly when these changes occur quickly. (This subject is further discussed below.)
- **Barge Mooring System.** The EPF barge was held in position by two mooring spuds that were jacked down into the lake bed, as shown in the photo above. These spuds work well in relatively shallow areas, but if the barge is to operate at Pumping Site 2 when the lake is higher, a different mooring system may be required. This report assumes a self-tightening anchored system would be needed. The costs of these mooring systems can be significant.

Connecting a Floating Pump Station to a Secured Pipeline

Connecting a floating pump station to a lake-bottom pipeline is somewhat problematic. The design must allow the pump station to go up and down with the lake level, without buckling the pipe or causing the pump station to move out of position. Also, the pump station needs to be connected and disconnected relatively easily, as it is placed into operations and removed from service.

SCISSOR-PIPE CONCEPT

A ball-jointed, “scissor pipe” (Figure 4), allows the pump station to stay stationary, but presents some disadvantages:

- The ball joints are not easily maintained or replaced, and may not function well enough in the long-term to prevent leakage.
- Connecting and disconnecting the pumping barge likely requires a barge-mounted crane.

- When not in use, the pipe and float could be a hazard to boaters.

Construction of this facility would not be particularly challenging, but would likely require the use of divers to connect the riser pipe to the lake-bottom pipeline.

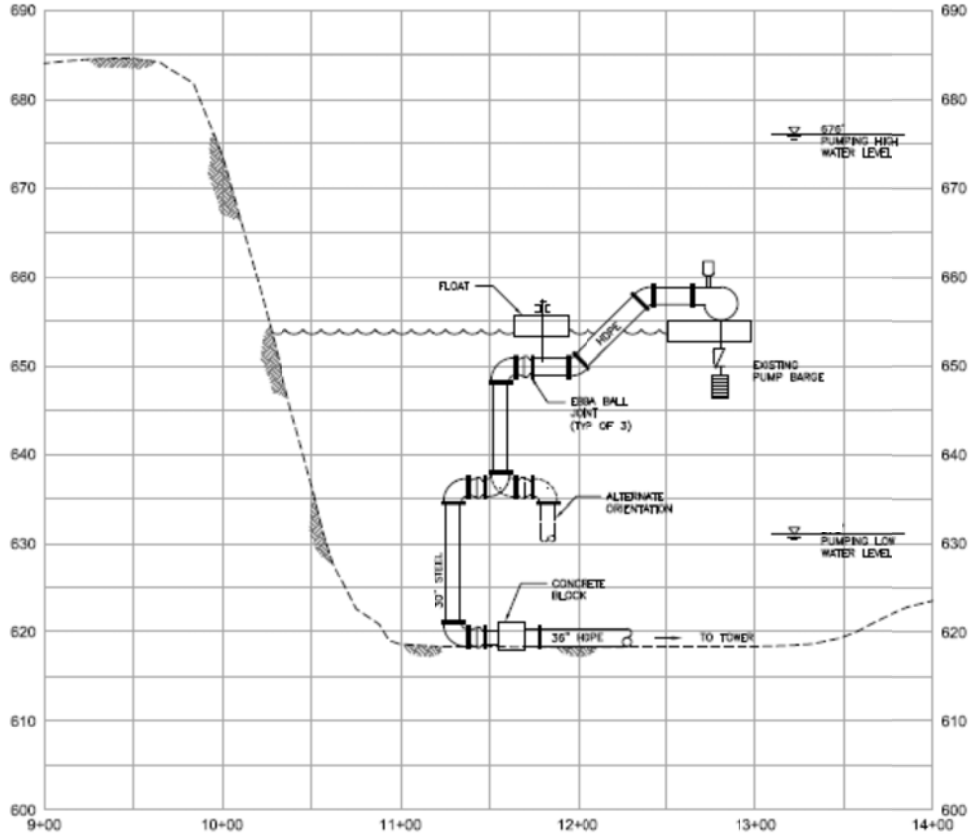


Figure 4. Ball-jointed Scissor Pipe Concept

STANDPIPE CONCEPT

Connecting the barge to a standpipe at the shoreline (Figure 5) keeps the moving parts accessible for maintenance. With the pipe at the shoreline, a boating hazard is avoided and a land-based crane perhaps can be used for connecting and disconnecting the barge. A disadvantage is the need to occasionally reposition the barge, since the pipe will pull the barge towards shore, as the lake level drops.

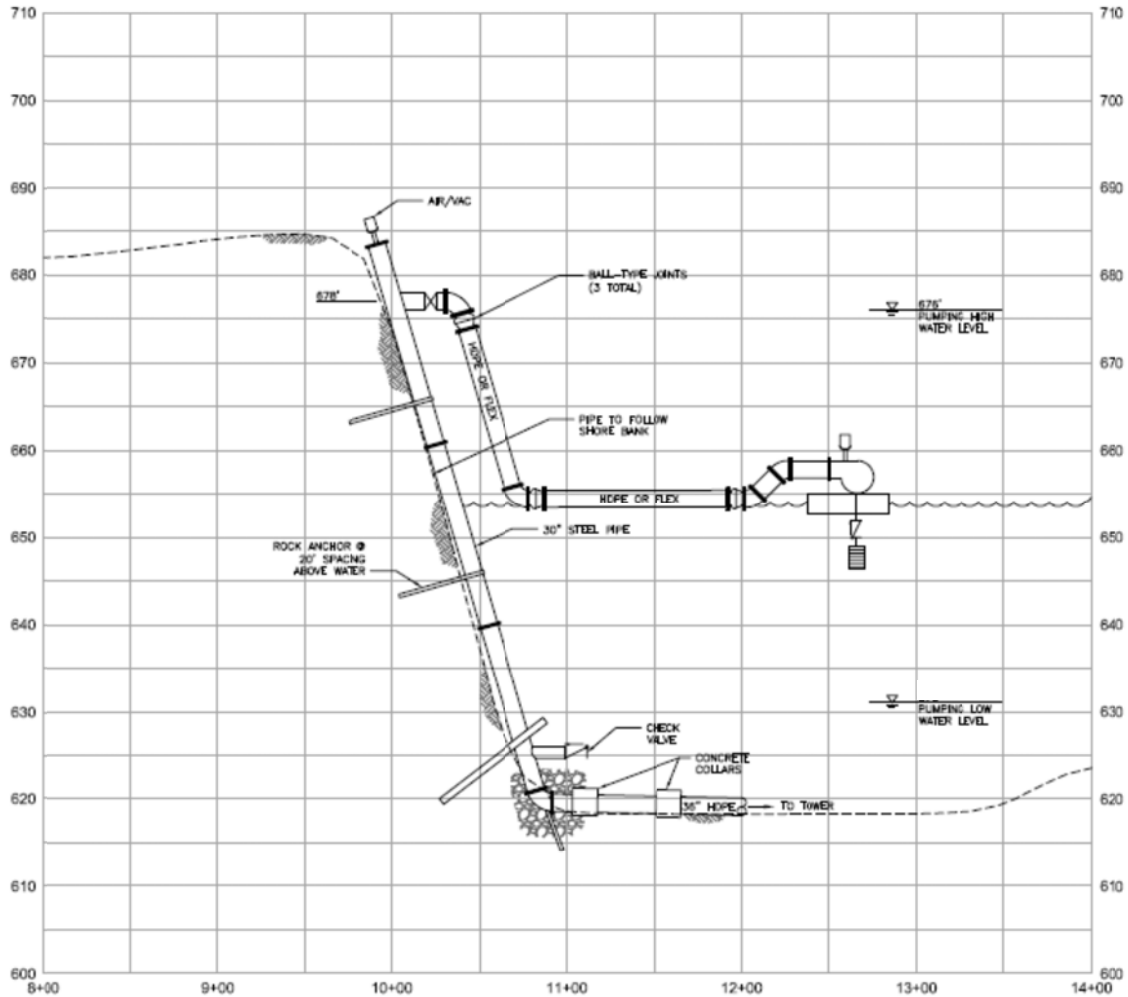


Figure 5. Standpipe Concept

Construction of the standpipe could prove somewhat difficult. The proposed location is along a bench area near the EPF Pumping Site 2 (Figure 6). This makes it within reach of existing electrical facilities. However, the construction window could be short. The area is only accessible when the lake is at 680 feet or lower, but construction would need to be completed before gravity flow to the tower is interrupted, which occurs at 676 feet (or a few feet lower¹). Alternatively, the standpipe could be located to the northwest, extending all the way to the campground. This requires a much longer pipeline and much bigger crane for its installation.

The standpipe concept is further illustrated in the drawings found in Appendix C.

¹ By using the pipeline now connected to Tower Gate 5, it may be possible to extend gravity flow operations by a few additional feet.



Figure 6. Bench area where standpipe or shore-mounted pump station would be located.

New Floating Pump Station

A new floating pump station, owned and operated by a contractor would be similar to the EPF facility, and would likely be constructed using at least some of the existing plans. The prime advantage of this alternative is that risks are placed on the contractor, but this comes at a cost. A fee must be paid for every month the facility exists, whether it is active or not.

An advantage of this option is the ability to relocate the facility as conditions change. As with the EPF, “Site 1” and “Site 2” options exist. If the drought is short-lived, costs can be saved by only pumping from Site 1.

Constructing a new floating PS at some point in the future allows COMB to defer near-term expenditures, but with potentially higher long-term costs. Future prices could be higher or lower than those paid over the last 2.5 years. The prices charged by the current contractor were only about half those proposed by the only other bidder.

New Secured Pump Station

Like the “Secured Pipeline”, a “Secured Pump Station” would largely remain in one place, no matter the lake level. Two concepts are discussed: (1) Shore-mounted, slant-well facility and (2) prefabricated submerged facility.

SHORE-MOUNTED SLANT-WELL FACILITY

This pumping station would be a much larger version of the pumping facility employed by the County to serve the campground’s water demands. As shown in Figure 7, vertical turbine pumps with submersible motors are placed at the bottom of a slanted steel casing pipe, which draws water from the lake through fish screens salvaged from the current EFP pumping facility. The pumps are similar to well pumps, except their casings are slanted, following the steeply sloped bank near EPF Pumping Site 2 (Figure 6).

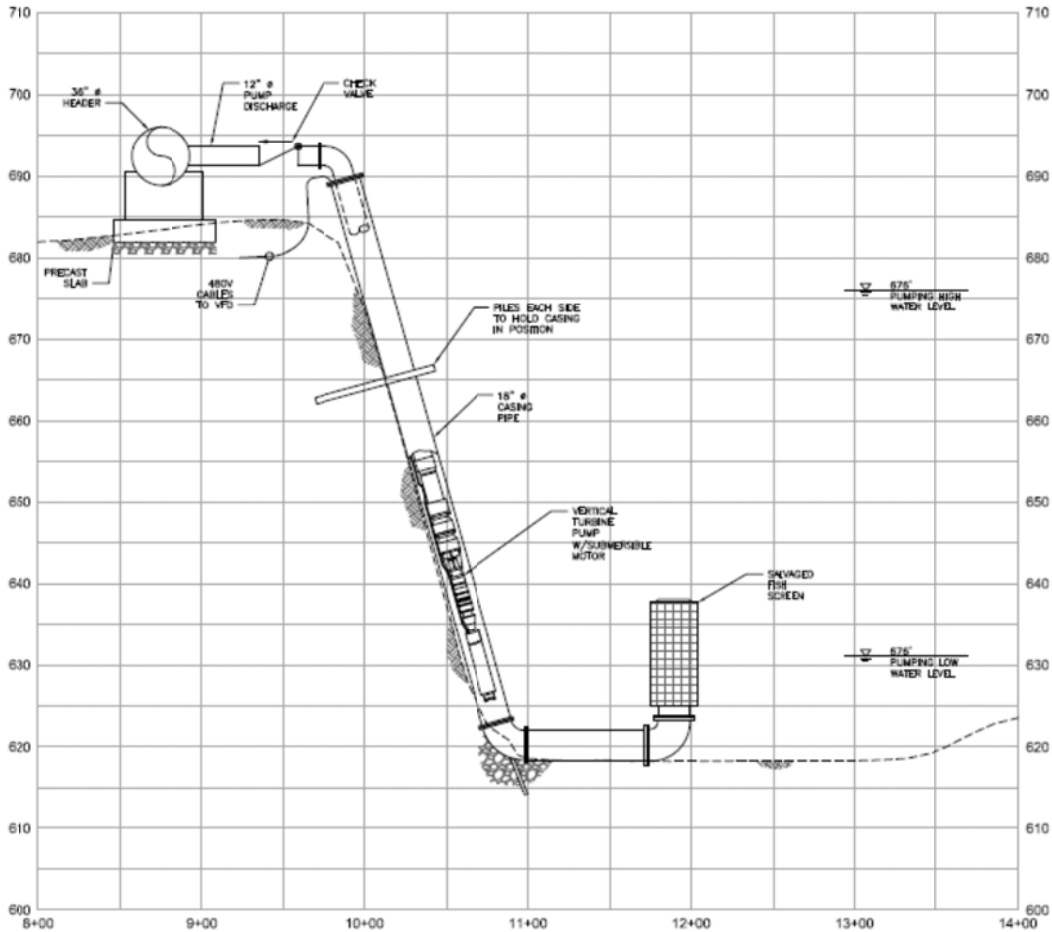


Figure 7. Slant-Well Pump Station Concept

Six 100-HP pumps are envisioned, delivering a combined flow of 25 mgd against a total dynamic lift of 70 feet, when the lake is at 643 feet (minimum pool level). At higher lake elevations, higher flows would be possible. These pumps would discharge to a common header pipe, which would connect to a standpipe similar to what is shown in Figure 5 (except that the connection would be at approximately elevation 685). The header pipe would be equipped with meter, pressure transducer, and turbidity meter, to monitor operations. Both the header pipe and the pumps would be removed when the facility is not in use. This could be accomplished with a small, truck-mounted crane.

The pumps would be powered by the same variable-frequency drives (VFD) and electrical switchgear used to power the existing barge. The “Con-Ex” box that houses this switchgear and controls/communications equipment would be salvaged from the barge and mounted on a trailer for easy deployment. This “electrical room” in turn is powered from the same PG&E transformer and service switchgear formerly used for the Site 2 EPF. Power would be delivered through 480V cables also salvaged from the EPF. These cables would be installed within permanent conduits and buried in trenches. The cost of acquiring the VFDs, switchgear, cable and other electrical equipment would be at a “fire-sale” price of about \$200,000 to \$400,000.

The EPF Contractor has also offered the existing 600kW/750 kVA emergency power generator at a cost of \$150,000. While this is a reasonable price, COMB has no current use for such equipment, and would prefer to rent a unit when needed, rather than keeping it maintained and permitted. If one of the member agencies could use this generator, COMB might be able to rent it back when needed. COMB would likely acquire the existing automatic transfer switch, along with the on-shore service switchgear. The cost of this equipment is approximately \$10,000.

As with construction of the standpipe facility described earlier, construction of this pump station could be somewhat challenging. The proposed location is at the same bench area near EPF Pumping Site 2 described earlier (Figure 6). The advantage of this location is proximity to existing electrical facilities and it is a perfect elevation for the header pipe, but this elevation also means the site is inaccessible until shortly before gravity flow is lost. To construct this facility within a possibly short construction window (when the lake is below 680 feet but above 676 feet) requires considerable prefabrication and planning, but is believed to be feasible.

The slant-well pump station concept is further illustrated in the drawings found in Appendix C.

PREFABRICATED SUBMERGED FACILITY

Several other concepts for a secured pump station facility emerged from this study. Among the more promising is a prefabricated pump station that would be assembled on shore, floated into position, and then lowered to the lake bottom. The idea is similar to how off-shore oil exploration facilities are constructed.

The advantage of such a facility is that it could be constructed well in advance of when it is needed. It would not be subjected to a short construction window like the slant-well facility. The chief disadvantage is that the pumping equipment would not be easily accessible. The facility might also encounter conflicts with boaters and their anchors. Due to these limitations, it was not investigated in detail. A concept for such a facility is presented in Appendix C.

Pipeline Alternatives and Criteria

The *Secured Pipelines Project Description* described the purpose, necessity, background and basic design criteria for two pipelines:

- The “Part 1 Pipeline” is a 36-inch diameter pipeline which runs from the Tecolote Tunnel Inlet Tower to a future pumping facility located near the County campground (EPF Pumping Site 2). Approximate total length is 10,100-ft.
- The “Part 2 Pipeline” is a 36-inch diameter pipeline which would run from the future 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.

Figure 8 shows schematically the pumping and pipeline system.² At the interface between the CCWA and Part 2 Pipeline, valves would allow SWP water to be directed into the lake or into the pipeline. A standpipe at the dam, enables the CCWA and COMB systems to operate independently and helps to control surges.

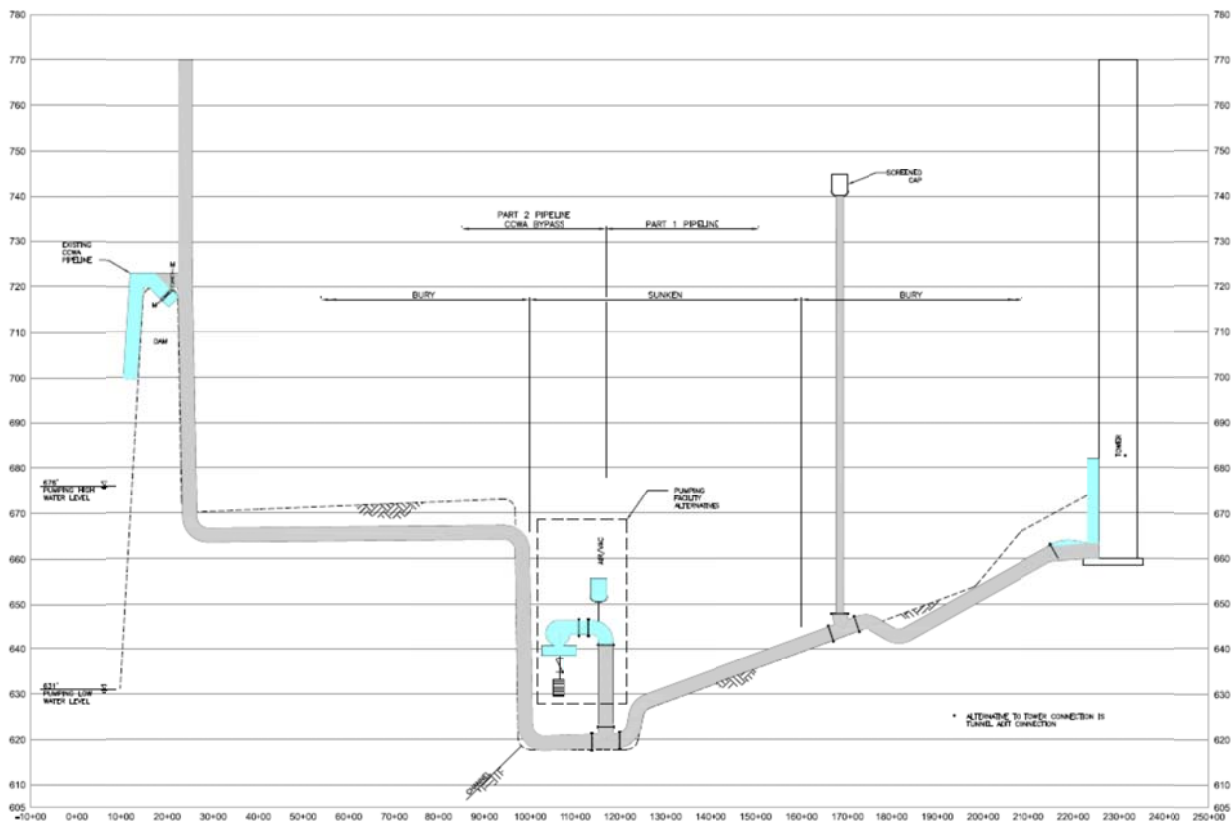


Figure 8. Schematic showing future pumping facility and proposed the Secured Pipeline Parts 1 and 2

² This figure was prepared when lake levels were low and trench installation was possible.

Part 1 Pipeline

Pipeline alternatives for the next drought pumping facility are:

- **Temporary Floating Pipeline.** This would be similar to the EPF pipeline which was recently removed. Any floating pipeline would likely be owned and maintained by a contractor.³
- **Secured Pipeline.** This pipeline would be at the lake bottom and would be owned by COMB. The pipeline would be ballasted by concrete collars from end to end. The alternative of burying approximately half the pipeline within a trench is no longer feasible.

Both of these pipeline alternatives would generally follow the EPF pipeline alignment, as shown in the figures found in Appendices C and D. At the tunnel end, the secured pipeline alternative might eventually connect to the old tunnel adit, by coring through the concrete and steel bulkhead, but this connection would not occur until the lake water level drops sufficiently to provide access. Connection to the existing steel box attached to the tower should be considered temporary, as it was not designed to be a long-term facility.

Part 2 Pipeline

The Secured Pipelines Project also originally envisioned a Part 2 Pipeline, which would allow SWP water to bypass the lake. Although the Part 2 Pipeline had not been needed to date, conditions were such that it could be constructed relatively inexpensively, taking advantage of existing pipeline material, following an alignment that was easily trenched, and applying economies of scale. This low-cost bypass pipeline provided insurance against various events that might impede the conveyance of SWP water through the lake over the next 50 years. In addition to providing valuable redundancy, the Part 2 pipeline provides other benefits.⁴

Over the last two months, the attractiveness of this “add on” project has significantly declined:

- With the recent rise in the lake level, the proposed alignment is no longer trenchable, making the project much more expensive in the near-term.
- The higher lake level also ameliorates many of the risks that the pipeline was intended to mitigate.
- Transient hydraulic analysis indicated the pipeline is not as effective for surge protection of the Part 1 pipeline as other alternatives.
- Use of the surplus pipeline material will require that it be stored until the project is authorized and awarded, which could be several years away.

³ Depending on lake level, a shorter version of this pipeline could be installed, extending from EPF Pumping Site 1 to the Tecolote Tunnel Inlet Tower, which could save money, if the need for the pipeline is short-lived. The analysis in this report assumes that a full-length (i.e., “Site 2”) pipeline will be installed.

⁴ It would reduce the amount of SWP water lost to evaporation, marginally increase emergency supply to the South Coast, during wild fires and other emergencies, and reduce pumping costs.



- Direct conveyance of the SWP water would create treatment challenges at the South Coast Water Treatment facilities that have not been fully resolved.

For these reasons, design and construction of the Part 2 pipeline is not recommended at this time, however, concepts for the pipeline are included in this report, for future possible use.

Pipeline Design Criteria

The following criteria apply to the design of these pipelines. Due to the recent changes in the lake elevation, no portion of the Part 1 pipeline is expected to be buried. For the Part 2 pipeline to be feasible, the lake level will need to be below 670 feet.

Table 2. Lake Cachuma Submerged Pipelines Design Criteria

	Part 1 Pipeline		Part 2 Pipeline	
Alignment	Tunnel Inlet Tower to Pumping Facility		Pumping Facility to CCWA Bypass Pipe Discharge at Bradbury Dam	
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 (static lift + headloss)		720 feet (crest of Bradbury Dam spillway)	
Reaches	Trenched	Sunken	Trenched	Sunken
Reach length (Note 3)	~ 0 feet	~ 10,100 feet	~7500 feet	~ 2000 feet
Minimum pipe elevation	n/a	619 feet	660 feet	618 feet
Maximum internal pressure	n/a	44 psi (720 ft–619 ft)	45 psi (765-660 ft)	63 psi (765 ft – 618 ft)
Maximum external differential pressure	n/a	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
Table notes:				
1. Elevations are based on “tower” datum (NGVD 1929). Conversion is: NGVD29 + 2.38 ft = NAVD88				
2. Maximum lake level during pumping operations = 676 feet				
3. Portions of pipelines installed in trench depend on the lake levels 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				

Transient Hydraulic (Surge) Analysis

HDR engaged the services of Northwest Hydraulics Consultants (NHC) to perform a transient hydraulic analysis of the Part 1 pipeline, to determine requirements for protection of the facilities and design of the pipeline. NHC analyzed the effects of a sudden power outage and devised means of preventing a potentially damaging water “hammer”. Water hammers occur when vapor bubbles produced by vacuum conditions suddenly collapse and two columns of water slam together.

NHC was also tasked with determining if proposed materials are adequate for the transient pressures that will be experienced, including both positive and negative pressures. When the

pump station suddenly stops due to a power outage, the water in the pipe keeps moving, which pulls in air. NHC investigated means of minimizing the introduction of air into the pipe which would reduce the amount of ballasting needed for the pipeline (as discussed below).

The NHC report is found in Appendix B. Recommendations that are pertinent to the design of the pipeline are:

- A floating pump station should connect to a 36-inch standpipe that extends across the bench area and up the steep slope toward the campground, terminating at elevation of 760 feet (Figure 9). Water in this standpipe helps minimize negative pressures and the intake of air. Under most (but not all) operating conditions, this standpipe eliminates the intake of air.



Figure 9. Standpipe recommended for surge protection. This pipeline is not needed for the shore-mounted PS.

- A minimum 8-inch diameter lake water inlet swing check valve (e.g., APCO Series 6000, or equivalent) should be installed about 1200 feet from the tower (STA 20+28 on the EPF Site 1 plans). The valve should be installed in a screened vault to provide protection from debris.
- The existing 8-inch diameter combination air valves at the pump station should be converted to controlled venting vacuum relief valves by installing a surge check feature (e.g., an 8-inch diameter APCO CSV-1600, or equivalent) on the inlet of the combination air valve.
- The pipeline should be designed to accommodate air throughout.



NHC’s analysis assumed the EPF pumping barge would be employed with a scissor-pipe connection. If a secured pumping facility is selected instead of a floating pump station, the hydraulic analysis and report should be revised, taking into account the specific pumps and other equipment, but only minor changes to the recommendations are expected. This reanalysis can be part of final design. Based on discussions with NHC, there should not be a need for the long standpipe (Figure 9), if a shore-mounted slant-well facility is constructed or if a floating pump station is connected to a shore-mounted standpipe, as shown in Figure 5.

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.⁵

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}).⁶ The ballasting must also be greater than the buoyancy force, with an appropriate margin of safety.⁷

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. 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 3 shows the preliminary ballasting requirements.

Table 3. 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	30%	100%	20%	20%
“K” factor ⁸	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 ⁹	2 ft	N/A	2 ft	N/A

* If applicable

⁵ 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.

⁶ Reference: Chapter 10, Marine Installations, HDPE Pipeline Design Manual

⁷ 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.

⁸ Per Table 1, Chapter 10, HDPE Pipeline Design Manual



To determine pipeline cover requirements for the trenched pipeline areas, Fugro Consultants was engaged, which took samples of poorly consolidated lake-bed sediment. Based on these samples, Fugro determined that the buoyant weight of native material will range from 35 to 47 pounds per cubic feet, which is slightly greater than the assumptions used in Table 3.

⁹ Buoyant weight of backfill material assumed to be 30 lbs. per cubic ft



Comparison of System Alternatives

In this section, three alternative systems are examined for the next drought pumping facility, as defined in Table 4.

Table 4. Matrix of Facility Alternatives Studied

	Existing Floating PS (COMB Owned)	New Floating PS (Contractor Owned)	New Secured PS (COMB Owned)
Floating Pipeline	Not recommended	Alternative 1	Not recommended
Secured Pipeline	Alternative 2	Not recommended	Alternative 3

These systems employ the pump station and pipeline alternatives previously discussed:

- For the New Secured Pump Station, a shore-mounted slant-well facility is assumed.
- For the Secured Pipeline, concrete collars are assumed for the entire pipeline.

Alternatives that are not recommended for consideration are:

- **COMB-Owned Floating Pipeline.** Alternatives involving COMB ownership of a floating pipeline are not recommended. The challenges faced by the EPF Contractor during the last month with managing the pipeline as the lake level rapidly rose, are not something that COMB is prepared to handle. To reliably maintain a floating pump station and pipeline requires the resources and wherewithal of an experienced, capable contractor.
- **COMB-Owned New Floating PS.** If COMB is to purchase a floating pump station, it should purchase the existing one, which can be acquired for about 30 percent of the cost of a new facility. Any new facility would not be substantially better than the current one.
- **Indefinite facility rental.** The option of continuing to pay a monthly rental fee to the EPF Contractor to maintain the current pumping barge is not recommended. Approximately one year of monthly “standby” charges will pay the cost of pumping barge acquisition. It is fairly certain that these facilities will not be needed for at least 2 years.
- **Long-term storage of pipeline.** The option of acquiring and storing the existing pipeline for possible future installation is not recommended. Earlier studies have failed to identify a good method of storing the pipe that would be cost-effective.
- **Contractor-owned PS with secured pipeline.** If a secured pipeline is constructed, the need to have a contractor involved in pump station operations and maintenance is largely negated. This avoids the need for costly monthly payments during operations. Leasing the pump station does not save much money, since the pumping facility must be custom-built and is largely scrapped when decommissioned. COMB pays virtually the full cost of ownership, whether COMB owns it or not.



The cost estimates used for this analysis are found in Appendix A. These opinions of probable construction cost are based on HDR’s experience as a designer of water conveyance facilities and utilize bid prices, published data, and other sources of information. Many of the costs derive from the EPF contract and various discussions with the EPF Contractor. These estimates are expected to vary from actual bid prices due to market conditions and the perceptions of bidders.

Table 5 summarizes the costs found in the detailed estimates. The costs include allowances for contingency, engineering, permits and other owner expenses, but do not include power or fuel costs, which are assumed to be roughly identical, no matter the alternative.

Table 5. Summary of Cost Used for Alternative Comparison

	Alternative 1	Alternative 2	Alternative 3
Capital	\$ 0	\$8,020,000	\$7,110,000
Commissioning	\$4,520,000	\$150,000	\$74,000
Decommissioning	\$380,000	\$117,000	\$59,000
Annual O&M (active)	\$1,488,000	\$140,000	\$59,000
Annual O&M (standby)	\$612,000	\$90,000	\$32,000
Annual O&M (decommissioned)	\$0	\$21,000	\$2,000

To compare these costs requires assumptions regarding how often the facilities are needed and how long they will operate. Figure 10 provides a life-cycle analysis, using the assumptions listed below.

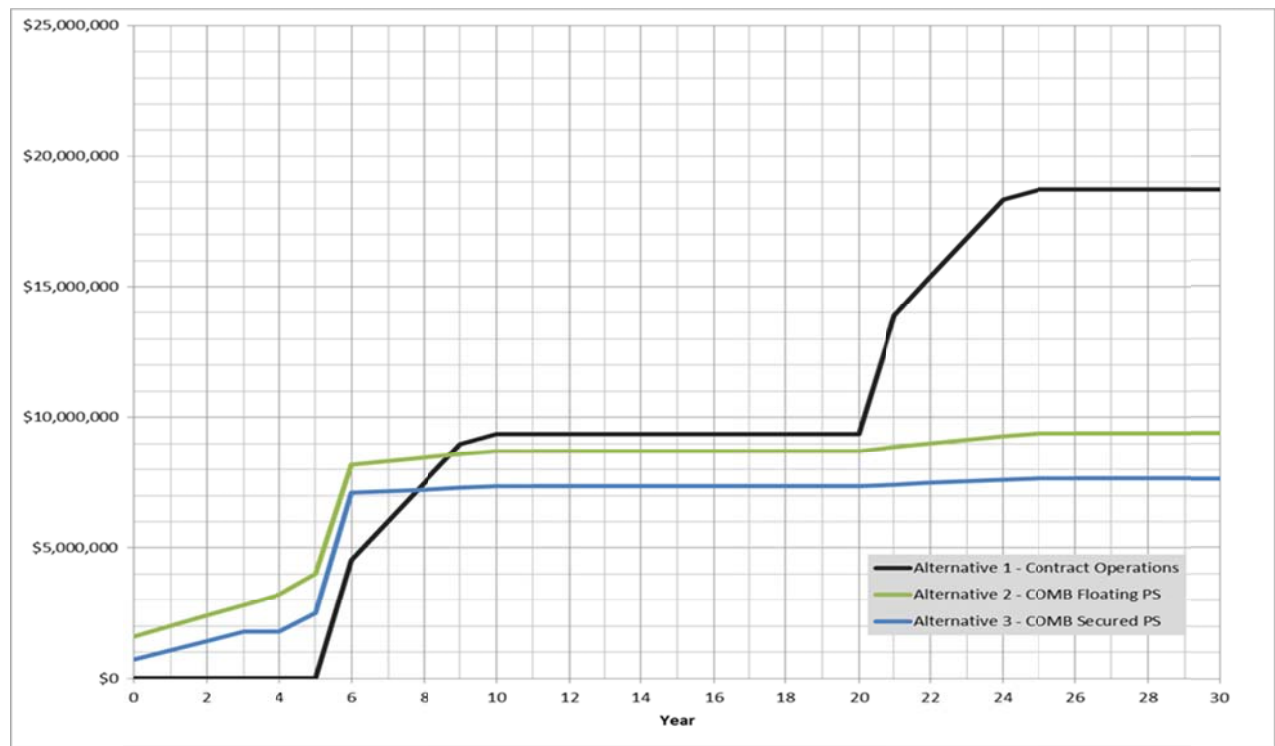


Figure 10. Comparison of Life-Cycle Costs

Assumptions Used for Life-Cycle Comparison

1. A pumping facility will be needed again in 6 years and in 21 years.
2. Capital costs for the COMB-owned facilities begin immediately, but accumulate slowly. Initial expenses are for acquiring EPF equipment and pursuing environmental clearance for the pipeline. As the need to the facility becomes more immediate, pipeline and pump station construction occurs, accelerating expenditures.
3. The pumping facility will operate 3 years each time it is needed.
4. The pumping facility will be in standby mode for 1 year before and after each use.
5. Costs are in constant (2017) dollars. (Inflation rate and financial discount rate are assumed to be equal.)

Results

Although different assumptions will produce different numerical results, the graph illustrates the following:

- Although Alternative 1 is initially less expensive, the costs associated with operations and decommissioning will very likely make it a more expensive option with just one use.
- Alternative 1 becomes a very expensive option, if it is needed more than once.
- Of the two COMB-owned options, Alternative 3 is slightly less expensive to acquire, and its cost advantage increases over time because it is much easier to operate.

Alternative 3 eventually requires an investment of approximately \$7 million, but needs relatively minor costs to operate and maintain, remove and redeploy. For rough comparison, costs to date for the EPF have been over \$8.7 million, including the initial costs, operations, relocation, and partial decommissioning.

Most of this capital investment cost can be deferred, until the need for the facility becomes more immediate. However, a near-term investment in some EPF equipment is recommended, since it can be acquired at “fire-sale” prices. This equipment can be reused for any of the alternatives, and does not commit COMB to any particular action. Moreover, the pursuit of environmental clearance for the Secured Pipeline would need to continue, since its deferral may not allow sufficient time for implementation.

Conclusions and Recommendations

1. There is no reason for COMB to take ownership or continue to pay rental costs for the EPF pipeline materials. These materials are only suitable for a floating pipeline operation. Storing the material at the lake for at least two years is logistically difficult and not likely to save much money.
2. COMB should consider moving forward with the Secured Pipelines Project Part 1. This pipeline potentially could save \$10 million, if the pumping facility is needed two more times.

- As a first step, CEQA / NEPA documentation should be completed
 - Subsequently, drawings and specs should be prepared for bidding. The preliminary drawings prepared for this study may be used. As part of the final design, the hydraulic analysis should be updated.
 - Construction of the pipeline itself can wait until a clear need is at hand.
3. If a secured pipeline is constructed, COMB can more easily own and operate the pumping facility. Of the two COMB-owned pumping facilities considered in this report, the shore-mounted, slant-well facility is the lowest cost and easiest to operate and maintain.
 4. COMB should consider acquiring the following items from the EPF Contractor for future use. These materials can be reused in either a floating or shore-mounted facility:
 - The shipping container, with VFDs, switchgear, and controls equipment
 - On-shore electrical switchgear and automatic transfer switch
 - 480 V electrical conductors
 - Fish screens
 5. Assuming that COMB moves forward with the Secured Pump Facility, it should direct the removal of the EPF pump station as soon as possible, excluding the items noted above.
 6. COMB should consult with its member agencies regarding acquisition of the emergency generator from the EPF Contractor, with the possibility that COMB might lease the unit for pumping operations when needed.
 7. Constructing the slant-well facility will require thoughtful planning and preparation, so it can be accomplished in a relatively short window, when the lake level is between 680 and 676 feet.
 8. COMB should defer reconsideration of the Secured Pipeline Part 2, until the lake level returns to elevation 670 or lower, which will enable trenching and will increase its attractiveness.

* * *

HDR appreciates the opportunity to work on this very important and challenging project for COMB. We look forward to discussing this report with you and the member agencies, managers and Board members.



Appendix A – Cost Estimates

Reservoir Water Supply Alternative 2
COMB Owns and Operates Pumping Barge and Installs Secured Pipeline on Lake Bed with Connection to Standpipe
Capital Cost

Item	Quantity	Unit	Unit Cost	Amount	Total
Mobilization / Setup (assume 2% of construction)	1	ls	\$ 102,648.90	\$ 102,649	\$ 102,649
Site Work					\$ 30,445
Access road Allowance	2000	sy	\$ 10	\$ 20,000	
Erosion Controls	500	lf	\$ 5	\$ 2,500	
Site Restoration 1/2 acre	21780	sf	\$ 0.25	\$ 5,445	
Finish Grading	1	ls	\$ 2,500	\$ 2,500	
Purchase Existing Facilities					\$ 884,000
Pumping Barge, Screens, and Electrical	1	ls	\$ 724,000	\$ 724,000	
Generator and on-shore equipment	1	ls	\$ 160,000	\$ 160,000	
Initial Maintenance Needs					\$ 250,000
Upgrade barge for long-term operations	1	ls	\$ 200,000	\$ 200,000	
Maintenance boat, tools, equipment, etc.	1	ls	\$ 50,000	\$ 50,000	
Barge/diver Work					\$ 140,000
Barge / Crane	4	wk	\$ 20,000	\$ 80,000	
Diver Install	10	dy	\$ 6,000	\$ 60,000	
Discharge Standpipe Connection to Secured Pipeline					\$ 374,000
36" dia. dr 17 HDPE pipe	500	lf	\$ 120	\$ 60,000	
36" dia. dr 17 HDPE steel flanges	3	ea	\$ 3,000	\$ 9,000	
36" dia. dr 17 HDPE 45 degree elbows	2	ea	\$ 5,000	\$ 10,000	
Sonic flow meter	1	ea	\$ 20,000	\$ 20,000	
Flexible Connections	2	ea	\$ 50,000	\$ 100,000	
Anchorage of Pipe to Bank	1	ls	\$ 60,000	\$ 60,000	
Pipe Bridge/Flexible Hose	100	lf	\$ 500	\$ 50,000	
Pipe Bridge/Flexible Hose Floatation	1	ls	\$ 40,000	\$ 40,000	
Misc. fittings	1	ls	\$ 25,000	\$ 25,000	
Mooring System					\$ 850,000
Self Tensioning Cables or Piles	1	ls	\$ 800,000	\$ 800,000	
HPU	1	ls	\$ 50,000	\$ 50,000	
Electrical					\$ 12,000
Trailer to place electrical storage container on	0	ls	\$ 30,000	\$ -	
Installing salvaged electrical supply cables	1000	lf	\$ 12	\$ 12,000	
System Start-up and testing					\$ 25,000
1 week of 5 man crew labor (avg labor @ \$100/hr	40	hrs	\$ 500	\$ 20,000	
Misc equipment	1	ls	\$ 5,000	\$ 5,000	
Secured Pipeline					\$ 2,567,000
36" dia. dr 17 HDPE pipe	10200	lf	\$ 120	\$ 1,224,000	
36" dia. dr 17 HDPE steel flanges	6	ea	\$ 3,000	\$ 18,000	
Laydown on floor with concrete collars	337	ea	\$ 3,000	\$ 1,010,000	
Buried pipeline excavation/backfill	0	lf	\$ 39	\$ -	
6" dia. Air vent piping	1000	lf	\$ 40	\$ 40,000	
Misc. fittings/appurtenances	1	ls	\$ 75,000	\$ 75,000	
Inlet Tower Adit Connection	1	ls	\$ 200,000	\$ 200,000	
				Construction Subtotal	\$ 5,235,094
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 1,047,019	\$ 1,047,019	\$ 1,047,019
Bonds and Insurance	1	ls	\$ 10,470	\$ 10,470	\$ 10,470
Subtotal					\$ 6,292,583
Contingency 15% (calc on Constr. Subtotal)					\$ 785,264
Engineering / permits @ 15% of subtotal					\$ 943,887
Total Cost (rounded)					\$ 8,020,000

Reservoir Water Supply Alternative 3
New Onshore Pumping Facility and Secured Pipeline on Lake Bed
Capital Cost

Item	Quantity	Unit	Unit Cost	Amount	Total
Mobilization / Setup (assume 2% of construction)	1	ls	\$ 88,123.22	\$ 88,123	\$ 88,123
Site Work					\$ 55,445
Access road Allowance	2000	sy	\$ 10	\$ 20,000	
Erosion Controls	500	lf	\$ 5	\$ 2,500	
Dredgign at PS site	1	ls	\$ 25,000	\$ 25,000	
Site Restoration 1/2 acre	21780	sf	\$ 0.25	\$ 5,445	
Finish Grading	1	ls	\$ 2,500	\$ 2,500	
Purchase Existing Facilities					\$ 450,000
Electric Panels w/ MCC and VFDs, SCADA/Controls	1	ls	\$ 200,000	\$ 200,000	
Salvaged Screen Assemblies	6	ea	\$ 15,000	\$ 90,000	
Generator and on-shore equipment	1	ls	\$ 160,000	\$ 160,000	
Barge/diver Work					\$ 170,000
Barge / Crane	4	wk	\$ 20,000	\$ 80,000	
Diver Install	15	dy	\$ 6,000	\$ 90,000	
Submersible Pump Assembly					\$ 393,900
18" Sch 20 steel casing	1050	lf	\$ 150	\$ 157,500	
Rock anchors or piles for casing support	41	ea	\$ 2,000	\$ 81,000	
Casing to screen connection tee	6	ea	\$ 4,000	\$ 24,000	
Well pump pipe column (10" steel w centerizers)	870	lf	\$ 120	\$ 104,400	
Connect existing screen assembly to well casing	6	ea	\$ 3,000	\$ 18,000	
Flanged Wye (for pump disconnect)	6	ea	\$ 1,500	\$ 9,000	
Discharge Piping Connection to Secured Pipeline					\$ 139,000
36" dia. dr 17 HDPE pipe	500	lf	\$ 120	\$ 60,000	
36" dia. dr 17 HDPE steel flanges	3	ea	\$ 3,000	\$ 9,000	
36" dia. dr 17 HDPE 45 degree elbows	2	ea	\$ 5,000	\$ 10,000	
36" dia. dr 17 HDPE saddle tap fittings for pump casings	6	ea	\$ 2,500	\$ 15,000	
Sonic flow meter	1	ea	\$ 20,000	\$ 20,000	
Misc. fittings	1	ls	\$ 25,000	\$ 25,000	
Submersible Vertical Turbine Pump (100hp, 3,141gpm@ 71.5ft TDH, 1800 RPM)					\$ 424,816
100 HP Sump Pump (7 pumps)	7	ea	\$ 60,688	\$ 424,816	
Electrical					\$ 161,000
Trailer to place electrical storage container on	1	ls	\$ 30,000	\$ 30,000	
Communications and progamming	1	ls	\$ 80,000	\$ 80,000	
Buring salvaged electrical supply cables	1000	lf	\$ 12	\$ 12,000	
#4/0 conductors (100 ft to panel + 200 ft /pump)	1300	lf	\$ 30	\$ 39,000	
System Start-up and testing					\$ 45,000
2 week of 5 man crew labor (avg labor @ \$100/hr)	80	hrs	\$ 500	\$ 40,000	
Misc equipment	1	ls	\$ 5,000	\$ 5,000	
Secured Pipeline					\$ 2,567,000
36" dia. dr 17 HDPE pipe	10200	lf	\$ 120	\$ 1,224,000	
36" dia. dr 17 HDPE steel flanges	6	ea	\$ 3,000	\$ 18,000	
Laydown on floor with concrete collars	337	ea	\$ 3,000	\$ 1,010,000	
Buried pipeline excavation/backfill	0	lf	\$ 39	\$ -	
6" dia. Air vent piping	1000	lf	\$ 40	\$ 40,000	
Misc. fittings/appurtenances	1	ls	\$ 75,000	\$ 75,000	
Inlet Tower Adit Connection	1	ls	\$ 200,000	\$ 200,000	
				Construction Subtotal	\$ 4,494,284
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 898,857	\$ 898,857	\$ 898,857
Bonds and Insurance	1	ls	\$ 8,989	\$ 8,989	\$ 8,989
Subtotal					\$ 5,402,130
Contingency 20% (calc on Constr. Subtotal)					\$ 898,857
Engineering / permits @ 15% of subtotal					\$ 810,319
Total Cost (rounded)					\$ 7,110,000

**Reservoir Water Supply Add-On Option
Central Coast Water Authority Bypass Pipeline (Part 2 Pipeline)
Capital Cost**

Item	Quantity	Unit	Unit Cost	Amount	Total
Mobilization / Setup (assume 3% of construction)	1	ls	\$ 32,721.68	\$ 32,722	\$ 32,722
Site Work					\$ 30,445
Access road Allowance	2000	sy	\$ 10	\$ 20,000	
Erosion Controls	500	lf	\$ 5	\$ 2,500	
Hydroseedings assume 1/2 acre	21780	sf	\$ 0.25	\$ 5,445	
Finish Grading	1	ls	\$ 2,500	\$ 2,500	
Purchase Existing Facilities					\$ 453,000
36" Pipeline	1	ls	\$ 453,000	\$ 453,000	
Barge/diver Work					\$ 92,000
Barge / Crane	4	wk	\$ 20,000	\$ 80,000	
Diver Install	2	dy	\$ 6,000	\$ 12,000	
Connection to Existing CCWA Pipeline in Spillway					\$ 114,500
5' Dia Concrete Standpipe	1	ls	\$ 20,000	\$ 20,000	
Sonic flow meter	1	ea	\$ 20,000	\$ 20,000	
36" Butterfly Valve	2	ea	\$ 20,000	\$ 40,000	
36" Check Valve	1	ea	\$ 3,000	\$ 3,000	
36" HDPE Tee Fittin	1	ea	\$ 3,500	\$ 3,500	
36" dia HDPE Turnout Pipe	150	lf	\$ 120	\$ 18,000	
Misc. fittings	1	ls	\$ 10,000	\$ 10,000	
System Start-up and testing					\$ 45,000
2 week of 5 man crew labor (avg labor @ \$100/hr)	80	hrs	\$ 500	\$ 40,000	
Misc equipment	1	ls	\$ 5,000	\$ 5,000	
Secured Pipeline					\$ 355,778
36"dia. HDPE steel flanges	6	ea	\$ 3,000	\$ 18,000	
Laydown on floor with concrete collars	17	ea	\$ 1,000	\$ 16,667	
Buried pipeline excavation/backfill	5300	lf	\$ 39	\$ 206,111	
6"dia. Air vent piping	1000	lf	\$ 40	\$ 40,000	
Misc. fittings/appurtenances	1	ls	\$ 75,000	\$ 75,000	
			Construction Subtotal		\$ 1,123,444
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 224,689	\$ 224,689	\$ 224,689
Bonds and Insurance	1	ls	\$ 2,247	\$ 2,247	\$ 2,247
Subtotal					\$ 1,350,380
Contingency 30% (calc on Constr. Subtotal)					\$ 337,033
Engineering / permits @ 15% of subtotal					\$ 202,557
Total Cost (rounded)					\$ 1,890,000

**Reservoir Water Supply Alternative 1
Contractor Continues to Own and Operate Existing EPF
Commisioning**

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Amount</u>	<u>Total</u>
Cushman Contract Cost to Construct	1	ls	\$ 3,700,000	\$ 3,700,000	\$ 3,700,000
Cushman Cost to Move Facility From Site 1 to Site 2	2	ea	\$ 60,000	\$ 120,000	\$ 120,000
Design & Admin	1	ls	\$ 300,000	\$ 300,000	\$ 300,000
Owner's engineering / permits					\$ 250,000
PG&E facilities	1	ls			\$ 150,000
Total Cost					\$ 4,520,000

Reservoir Water Supply Alternative 2
COMB Owns and Operates Pumping Barge and Installs Secured Pipeline on Lake Bed with Pipe Bridge/Flexible Hose
Commisioning

Item	Quantity	Unit	Unit Cost	Amount	Total
Mobilization / Setup (assume 3% of construction)	1	ls	\$ 2,865.00	\$ 2,865	\$ 2,865
Site Work					\$ 10,000
Access road Allowance	1000	sy	\$ 10	\$ 10,000	
Barge/diver Work					\$ 52,500
Barge / Crane	1	wk	\$ 20,000	\$ 20,000	
Diver	5	dy	\$ 6,000	\$ 30,000	
Boat to tow barge	0.5	wk	\$ 5,000	\$ 2,500	
Electrical					\$ 18,000
Truck and driver to tow electrical container	1	ls	\$ 1,000	\$ 1,000	
Install electrical cables	1	ls	\$ 15,000	\$ 15,000	
Electrical component connections	1	ls	\$ 2,000	\$ 2,000	
System Start-up and testing					\$ 15,000
5 man crew labor (avg labor @ \$100/hr)	20	hrs	\$ 500	\$ 10,000	
Misc equipment	1	ls	\$ 5,000	\$ 5,000	
				Construction Subtotal	\$ 98,365
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 19,673	\$ 19,673	\$ 19,673
Bonds and Insurance	1	ls	\$ 197	\$ 197	\$ 197
Subtotal					\$ 118,235
Contingency 30% (calc on Constr. Subtotal)					\$ 29,510
Total Cost (rounded)					\$ 150,000

Reservoir Water Supply Alternative 3
New Onshore Pumping Facility and Secured Pipeline on Lake Bed
Commisioning

Item	Quantity	Unit	Unit Cost	Amount	Total
Mobilization / Setup (assume 3% of construction)	1	ls	\$ 1,440.00	\$ 1,440	\$ 1,440
Site Work					\$ 10,000
Access road Allowance	1000	sy	\$ 10	\$ 10,000	
Pump Install					\$ 20,000
Small Crane	5	dy	\$ 2,000	\$ 10,000	
5 man crew labor	40	hrs	\$ 250	\$ 10,000	
Electrical					\$ 3,000
Truck and driver to tow electrical container	1	ls	\$ 1,000	\$ 1,000	
Electrical component connections	1	ls	\$ 2,000	\$ 2,000	
System Start-up and testing					\$ 15,000
5 man crew labor (avg labor @ \$100/hr)	20	hrs	\$ 500	\$ 10,000	
Misc equipment	1	ls	\$ 5,000	\$ 5,000	
			Construction Subtotal		\$ 49,440
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 9,888	\$ 9,888	\$ 9,888
Bonds and Insurance	1	ls	\$ 99	\$ 99	\$ 99
Subtotal					\$ 59,427
Contingency 30% (calc on Constr. Subtotal)					\$ 14,832
Total Cost (rounded)					\$ 74,000

**Reservoir Water Supply Alternative 1
Contractor Continues to Own and Operate Existing EPF
Decommisioning**

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Amount</u>	<u>Total</u>
Cushman Contract Cost to Decommision	1	ls	\$ 380,000	\$ 380,000	\$ 380,000
Total Cost					\$ 380,000

Reservoir Water Supply Alternative 2
COMB Owns and Operates Pumping Barge and Installs Secured Pipeline on Lake Bed with Pipe Bridge/Flexible Hose
Decommissioning

Item	Quantity	Unit	Unit Cost	Amount	Total
Mobilization / Setup (assume 3% of construction)	1	ls	\$ 2,265.00	\$ 2,265	\$ 2,265
Site Work					\$ 5,000
Access road Allowance	500	sy	\$ 10	\$ 5,000	
Barge/diver Work					\$ 52,500
Barge / Crane	1	wk	\$ 20,000	\$ 20,000	
Diver	5	dy	\$ 6,000	\$ 30,000	
Boat to tow barge	0.5	wk	\$ 5,000	\$ 2,500	
Electrical					\$ 18,000
Truck and driver to tow electrical container	1	ls	\$ 1,000	\$ 1,000	
Reel up electrical conductors	1	ls	\$ 15,000	\$ 15,000	
Electrical component connections	1	ls	\$ 2,000	\$ 2,000	
			Construction Subtotal		\$ 77,765
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 15,553	\$ 15,553	\$ 15,553
Bonds and Insurance	1	ls	\$ 156	\$ 156	\$ 156
Subtotal					\$ 93,474
Contingency 30% (calc on Constr. Subtotal)					\$ 23,330
Total Cost (rounded)					\$ 117,000

**Reservoir Water Supply Alternative 3
New Onshore Pumping Facility and Secured Pipeline on Lake Bed
Decommisioning**

<u>Item</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>Amount</u>	<u>Total</u>
Mobilization / Setup (assume 3% of construction)	1	ls	\$ 1,140.00	\$ 1,140	\$ 1,140
Site Work					\$ 5,000
Access road Allowance	500	sy	\$ 10	\$ 5,000	
Pump Install					\$ 30,000
Small Crane	5	dy	\$ 2,000	\$ 10,000	
5 man crew labor	40	hrs	\$ 500	\$ 20,000	
Electrical					\$ 3,000
Truck and driver to tow electrical container	1	ls	\$ 1,000	\$ 1,000	
Electrical component connections	1	ls	\$ 2,000	\$ 2,000	
			Construction Subtotal		\$ 39,140
Profit and Overhead (10% profit, 10% overhead)	1	ls	\$ 7,828	\$ 7,828	\$ 7,828
Bonds and Insurance	1	ls	\$ 78	\$ 78	\$ 78
Subtotal					\$ 47,046
Contingency 30% (calc on Constr. Subtotal)					\$ 11,742
Total Cost (rounded)					\$ 59,000

**Reservoir Water Supply Alternative 1
Contractor Continues to Own and Operate Existing EPF
Operation and Maintenance**

								Active Total	Standby Total	Decommissioned Total
Total O&M (Labor + Equipment/Supplies. Excluding power)								\$ 1,488,000	\$ 612,000	\$ -
Item	Yearly % Active Op	Yearly % Standby	Yearly % Decommissioned	Full Time Yearly Cost	Active Op Amount	Standby Amount	Decommissioned Amount	Active Total	Standby Total	Decommissioned Total
Fee										
Cushman Contract (rounded)	N/A	N/A	N/A		\$ 1,488,000	\$ 612,000	\$ -	\$ 1,488,000	\$ 612,000	



Reservoir Water Supply Alternative 2
COMB Owns and Operates Pumping Barge and Installs Secured Pipeline on Lake Bed with Pipe Bridge/Flexible Hose
Operation and Maintenance

								Active Total	Standby Total	Decommissioned Total
Total O&M (Labor + Equipment/Supplies. Excluding power)								\$ 140,000	\$ 90,000	\$ 21,000
Item	Yearly % Active Op	Yearly % Standby	Yearly % Decommissioned	Full Time Yearly Cost	Active Op Amount	Standby Amount	Decommissioned Amount	Active Total	Standby Total	Decommissioned Total
Labor										
Operations Engineer / Misc. Utility Management staff	0.15	0.08	0.00	\$ 145,000	\$ 22,308	\$ 11,600	\$ -	\$ 94,808	\$ 67,600	\$ 19,058
Facility Superintendent	0.25	0.10	0.01	\$ 110,000	\$ 27,500	\$ 11,000	\$ 1,058			
Facility Technician	0.50	0.50	0.20	\$ 90,000	\$ 45,000	\$ 45,000	\$ 18,000			
Item	Quantity	Quantity	Quantity	Cost	Cost	Cost	Amount	Total	Total	Total
Equipment, Supplies										
Equipment / year	1	1	0	\$ 40,000	\$ 40,000	\$ 40,000	\$ 1,000	\$ 45,000	\$ 22,500	\$ 2,000
Supplies / year	1	1	0	\$ 5,000	\$ 5,000	\$ 5,000	\$ 1,000			



**Reservoir Water Supply Alternative 3
New Onshore Pumping Facility and Secured Pipeline on Lake Bed
Operation and Maintenance**

								Active Total	Standby Total	Decommissioned Total	
Total O&M (Labor + Equipment/Supplies. Excluding power)								\$ 59,000	\$ 32,000	\$ 2,000	
Item	Yearly % Active Op	Yearly % Standby	Yearly % Decommissioned	Full Time Yearly Cost	Active Op Amount	Standby Amount	Decommissioned Amount	Active Total	Standby Total	Decommissioned Total	
Labor											
Operations Engineer / Misc. Utility Management staff		0.08	0.04	0.00	\$ 145,000	\$ 11,154	\$ 5,577	\$ -	\$ 41,923	\$ 27,885	\$ 1,923
Facility Superintendent		0.15	0.08	0.01	\$ 110,000	\$ 16,923	\$ 8,462	\$ 1,058			
Facility Technician		0.15	0.15	0.01	\$ 90,000	\$ 13,846	\$ 13,846	\$ 865			
Item	Quantity	Quantity	Quantity	Cost	Cost	Cost	Amount	Total	Total	Total	
Equipment, Supplies											
Equipment / year		1	1	0	\$ 15,000	\$ 15,000	\$ 15,000	\$ -	\$ 17,000	\$ 4,250	\$ -
Supplies / year		1	1	0	\$ 2,000	\$ 2,000	\$ 2,000	\$ -			



Reservoir Water Supply
Summary of Costs

	Alternative 1	Alternative 2	Alternative 3
Capital	\$0	\$8,020,000	\$7,110,000
Commissioning	\$4,520,000	\$150,000	\$74,000
Decommissioning	\$380,000	\$117,000	\$59,000
Annual O&M (active)	\$1,488,000	\$140,000	\$59,000
Annual O&M (standby)	\$612,000	\$90,000	\$32,000
Annual O&M (decommissioned)	\$0	\$21,000	\$2,000

Reservoir Water Supply
Life-Cycle Costs

Reference	Commissioning/ Decommissioning/			Alt 1 - Contract Ops				Alt 2 - COMB Floating PS Capital &				Alt 3 - COMB Secured PS Capital &				
	Year	Year	Status	O&M	Commissioning	Year Total	Cumulative	O&M	Commissioning	Year Total	Cumulative	O&M	Commissioning	Year Total	Cumulative	
0	2017	Acquisition of EPF				\$ -	\$ -	\$ 1,604,000	\$ 1,604,000	\$ 1,604,000	\$ 1,604,000			\$ 711,000	\$ 711,000	\$ 711,000
1	2018	Planning		\$ -	\$ -	\$ -	\$ -	\$ 10,500	\$ 401,000.00	\$ 411,500	\$ 2,015,500	\$ 1,000	\$ 355,500	\$ 356,500	\$ 1,067,500	
2	2019	Planning		\$ -	\$ -	\$ -	\$ -	\$ 10,500	\$ 401,000.00	\$ 411,500	\$ 2,427,000	\$ 1,000	\$ 355,500	\$ 356,500	\$ 1,424,000	
3	2020	Planning / design		\$ -	\$ -	\$ -	\$ -	\$ 10,500	\$ 401,000.00	\$ 411,500	\$ 2,838,500	\$ 1,000	\$ 355,500	\$ 356,500	\$ 1,780,500	
4	2021	Design		\$ -	\$ -	\$ -	\$ -	\$ 10,500	\$ 401,000	\$ 411,500	\$ 3,250,000	\$ 1,000	\$ -	\$ 1,000	\$ 1,781,500	
5	2022	Constructing		\$ -	\$ -	\$ -	\$ -	\$ 21,000	\$ 802,000	\$ 823,000	\$ 4,073,000	\$ 2,000	\$ 711,000	\$ 713,000	\$ 2,494,500	
6	2023	Constructing	Commissioning / standby	\$ -	\$ 4,520,000	\$ 4,520,000	\$ 4,520,000	\$ 21,000	\$ 4,010,000.00	\$ 4,031,000	\$ 8,104,000	\$ 2,000	\$ 4,621,500	\$ 4,623,500	\$ 7,118,000	
7	2024	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 6,008,000	\$ 140,000	\$ -	\$ 140,000	\$ 8,244,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,177,000	
8	2025	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 7,496,000	\$ 140,000	\$ -	\$ 140,000	\$ 8,384,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,236,000	
9	2026	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 8,984,000	\$ 140,000	\$ -	\$ 140,000	\$ 8,524,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,295,000	
10	2027	Standby	Decommissioning	\$ 612,000	\$ 380,000	\$ 992,000	\$ 9,976,000	\$ 90,000	\$ 117,000	\$ 207,000	\$ 8,731,000	\$ 32,000	\$ 59,000	\$ 91,000	\$ 7,386,000	
11	2028	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,752,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,388,000	
12	2029	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,773,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,390,000	
13	2030	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,794,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,392,000	
14	2031	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,815,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,394,000	
15	2032	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,836,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,396,000	
16	2033	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,857,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,398,000	
17	2034	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,878,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,400,000	
18	2035	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,899,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,402,000	
19	2036	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,920,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,404,000	
20	2037	Decommissioned		\$ -	\$ -	\$ -	\$ 9,976,000	\$ 21,000	\$ -	\$ 21,000	\$ 8,941,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,406,000	
21	2038	Standby	Commissioning	\$ 612,000	\$ 4,520,000	\$ 5,132,000	\$ 15,108,000	\$ 90,000	\$ 150,000	\$ 240,000	\$ 9,181,000	\$ 32,000	\$ 74,000	\$ 106,000	\$ 7,512,000	
22	2039	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 16,596,000	\$ 140,000	\$ -	\$ 140,000	\$ 9,321,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,571,000	
23	2040	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 18,084,000	\$ 140,000	\$ -	\$ 140,000	\$ 9,461,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,630,000	
24	2041	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 19,572,000	\$ 140,000	\$ -	\$ 140,000	\$ 9,601,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,689,000	
25	2042	Standby	Decommissioning	\$ 612,000	\$ 380,000	\$ 992,000	\$ 20,564,000	\$ 90,000	\$ 117,000	\$ 207,000	\$ 9,808,000	\$ 32,000	\$ 59,000	\$ 91,000	\$ 7,780,000	
26	2043	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,829,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,782,000	
27	2044	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,850,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,784,000	
28	2045	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,871,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,786,000	
29	2046	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,892,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,788,000	
30	2047	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,913,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,790,000	
31	2048	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,934,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,792,000	
32	2049	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,955,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,794,000	
33	2050	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,976,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,796,000	
34	2051	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 9,997,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,798,000	
35	2052	Decommissioned		\$ -	\$ -	\$ -	\$ 20,564,000	\$ 21,000	\$ -	\$ 21,000	\$ 10,018,000	\$ 2,000	\$ -	\$ 2,000	\$ 7,800,000	
36	2053	Standby	Commissioning	\$ 612,000	\$ 4,520,000	\$ 5,132,000	\$ 25,696,000	\$ 90,000	\$ 150,000	\$ 240,000	\$ 10,258,000	\$ 32,000	\$ 74,000	\$ 106,000	\$ 7,906,000	
37	2054	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 27,184,000	\$ 140,000	\$ -	\$ 140,000	\$ 10,398,000	\$ 59,000	\$ -	\$ 59,000	\$ 7,965,000	
38	2055	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 28,672,000	\$ 140,000	\$ -	\$ 140,000	\$ 10,538,000	\$ 59,000	\$ -	\$ 59,000	\$ 8,024,000	
39	2056	Active		\$ 1,488,000	\$ -	\$ 1,488,000	\$ 30,160,000	\$ 140,000	\$ -	\$ 140,000	\$ 10,678,000	\$ 59,000	\$ -	\$ 59,000	\$ 8,083,000	
40	2057	Standby	Decommissioning	\$ 612,000	\$ 380,000	\$ 992,000	\$ 31,152,000	\$ 90,000	\$ 117,000	\$ 207,000	\$ 10,885,000	\$ 32,000	\$ 59,000	\$ 91,000	\$ 8,174,000	
41	2058	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 10,906,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,176,000	
42	2059	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 10,927,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,178,000	
43	2060	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 10,948,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,180,000	
44	2061	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 10,969,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,182,000	
45	2062	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 10,990,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,184,000	
46	2063	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 11,011,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,186,000	
47	2064	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 11,032,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,188,000	
48	2065	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 11,053,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,190,000	
49	2066	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 11,074,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,192,000	
50	2067	Decommissioned		\$ -	\$ -	\$ -	\$ 31,152,000	\$ 21,000	\$ -	\$ 21,000	\$ 11,095,000	\$ 2,000	\$ -	\$ 2,000	\$ 8,194,000	





Appendix B – Transient Hydraulics

**LAKE CACHUMA EMERGENCY PUMP STATION
PRESSURE SURGE ANALYSIS
CACHUMA OPERATIONS AND MAINTENANCE BOARD**

DRAFT

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DISCLAIMER

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EXECUTIVE SUMMARY

This report presents findings from a pressure surge analysis of the Lake Cachuma Emergency Pump Station (LCEPS) and associated proposed pipeline. A hydraulic transient computer model was developed for the pump station and pipeline and both pump power failure and pump start-up analyses were performed for the LECPS. As part of the pressure surge analysis, surge protection measures were developed to protect the integrity of the system.

When lake levels are low, the existing floating LCEPS will convey raw water through an approximately 1.9 mile long, 36-inch diameter fusion welded high density polyethylene (HDPE) pipeline that will be partially anchored to the bottom of the lake and partially buried below the lake bottom. Downstream of the floating barge pump station the first approximately 4000 ft of pipeline will be DR17 HDPE 4710 (31.51-inch ID) and will be anchored to the lake bottom. The remainder of the pipeline to the Intake Tower will be buried DR19 4710 HDPE (32-inch ID). The existing floating pump station is equipped with seven split case (horizontal shaft) centrifugal pumps that are operated on variable frequency drives. There are two 8-inch diameter combination air valves installed at the pump station, which has a design capacity of 30 MGD.

Pump Power Failure

Power failures are unpredictable and will therefore occur at the LCEPS without anticipation. Following a loss of power to a pump, there will be a rapid drop in both the flow rate and pressure at the barge pump station because at least several seconds will elapse before backup power (if available) activates and restarts the pumps, and the variable frequency drives will not function following a loss of power. The results of the pump power failure analysis show that a traveling low pressure (i.e., pressure drop) wave will be created by the drop in pressure at the barge pump station. This low pressure wave will propagate out from the pump station and into the pipeline toward the Intake Tower, where wave reflections will occur. The minimum HGL is predicted to drop to vapor pressure (i.e., approximately 32 ft below the crown of the pipeline) in a significant segment of the pipeline. The pressure is reduced to vapor pressure long enough for vapor cavities to form in the pipeline. Upon re-pressurization of the pipeline by flow reversal/water hammer wave reflection, the vapor cavities will collapse and produce very large magnitude positive pressures that could damage the pipeline. Also, if the pipeline does not have sufficient strength to resist the large magnitude negative pressures associated with vapor pressure, it could collapse. At the barge pump station the combination air valves are predicted to open and prevent large magnitude negative pressures from developing at the barge pump station. However, the combination air valves are also predicted to vent air in an uncontrolled manner from the pipeline and eventually slam closed, which could damage the valve float and create adverse waterhammer pressure waves that could also damage the pipeline.

To eliminate predicted vapor cavity formation and collapse, prevent combination air valve slam at the LCEPS, control negative pressures to acceptable limits, and minimize the introduction of air to the pipeline, surge control is recommended as follows:

- Install a 36-inch diameter DR17 (Class 125 psi) HDPE 4710 (31.51-inch ID) standpipe from the main pipeline just below the barge pump station to El. 770 ft on the adjacent embankment to the west. A preliminary alignment and elevation drawing for the standpipe was prepared by HDR and is shown in Appendix B (inside this report) with a few minor comments and edits added by NHC.
- Install a minimum 8-inch diameter lake water inlet swing check valve (e.g., APCO Series 6000, or equivalent) at STA 20+28 on the pipeline (see Figure 1 inside this report) in a manner such that lake water (if the lake level is high) or air (if the lake level is low) will enter the pipeline when the pressure on the inside of the pipeline drops below the pressure on the outside of the pipeline at this location. It is understood that the pipeline will be inclined upward from this location to the Intake Tower so any air that enters the pipeline will be vented from the pipeline at the Intake Tower. The valve could be installed in a screened vault to provide protection from debris.
- Convert the existing 8-inch diameter combination air valves at the barge pump station to controlled venting vacuum relief valves by installing a surge check feature (e.g., an 8-inch diameter APCO CSV-1600, or equivalent) on the inlet of the combination air valve. A photo of a controlled venting vacuum relief valve that utilizes a surge check feature is shown in Figure 7 inside this report. Regular maintenance should be performed on the valves to ensure that they are always in good working order.

With the recommended surge control installed negative pressure heads are controlled to a magnitude of 14 ft below the crown elevation of the pipeline following loss of power to the pumps with a low lake level. Negative pressure heads of this magnitude should not damage the pipeline, but a negative pressure head of 14 ft (6 psi) should be added to the loading on the HDPE pipeline and the pipe integrity should be checked by the pipeline design engineer.

Pump Start-up

Prior to pump start the double-disc check valve just above the fish screen through which the pump receives water will be closed and there will be static pressure in the pipeline and on both the suction and discharge sides of the pump. When a pump at the LCEPS is started, the pressure will increase rapidly and the pump will convey flow into the pipeline. Acceleration of the flow into the pipeline will create a traveling pressure upsurge wave that will propagate out from the pump station and into the pipeline toward the Intake Tower. Control of pressure surges that are created upon pump start-up is simply a matter of controlling the rate of fluid acceleration at the pump. Usually this is accomplished by adjusting the pump speed on the variable frequency drive (VFD).

It is recommended that each pump at the LCEPS be brought from idle (i.e., 0 rpm) to full operating speed (i.e., 1780 rpm) in 120 seconds or longer with at least a 120 second lag between each pump start. The pump ramp should be linear and the total start-up time sequence for six duty pumps should be at least 12 minutes. The pumps can be started in any order, but they should be started one at a time.

When there is sufficient water in the lake that the elevation of the barge pump station exceeds the base elevation of the Intake Tower the proposed controlled venting vacuum relief valves will allow air into the piping at the barge pump station when the pumps are idle and when they are operating, but not generating sufficient pressure at the pump station to fully pressurize the air valves. If the piping at the barge pump station contains air prior to pump start-up, one or more pumps should be ramped up to speed slowly to fully pressurize the air valves prior to starting additional pumps. Once the air valves are pressurized pumps can be started as recommended above.

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1 INTRODUCTION

The Cachuma Operations and Maintenance Board (COMB) plans to replace the existing pipeline that 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. When lake levels are low, the floating Lake Cachuma Emergency Pump Station (LCEPS) conveys raw water through an existing, approximately 1.9 mile long, 36-inch diameter fusion welded high density polyethylene (HDPE) pipeline that floats on the lake. The COMB plans to replace the existing pipeline with a new pipeline that is partly anchored to the bottom of the lake and partly buried beneath the lake. HDR is providing engineering services for the project and retained Northwest Hydraulic Consultants Inc. (NHC) to perform a pressure surge analysis for the operation of the LCEPS and associated proposed pipeline.

Downstream of the floating pump station the first approximately 4000 ft of pipeline will be DR17 HDPE 4710 (31.51-inch ID) and will be anchored to the lake bottom. The remainder of the pipeline to the Intake Tower will be buried DR19 4710 HDPE (32-inch ID). The existing floating pump station is equipped with seven split case (horizontal shaft) centrifugal pumps that are operated on variable frequency drives. There are two 8-inch diameter combination air valves installed at the pump station, which has a design capacity of 30 MGD.

The results of the pressure surge analysis performed by NHC are described in this report along with recommendations to protect the LCEPS and associated proposed pipeline from adverse pressure surges caused by loss of power to the pumps at the LCEPS. Pump power failure and pump start-up simulations were performed for the pump station, and the results of the most pertinent simulations are included in this report. Also, movies of the pressure surge analysis simulations are included on a CDROM as Appendix A and can be viewed with Microsoft Windows Media Player or other comparable software.

This report also includes a description of the pressure surge analysis modeling approach, which is the focus of the next section.

2 UNSTEADY FLOW AND TRANSIENT ANALYSIS

Unsteady flow in pipelines can be represented by a set of one-dimensional hyperbolic partial differential equations. In their simplified hydraulic grade line form, the continuity and momentum equations are

$$\frac{a^2}{g} \frac{\partial v}{\partial x} + \frac{\partial H}{\partial t} + v \frac{\partial H}{\partial x} = 0 \quad (1)$$

$$\frac{\partial v}{\partial t} + v \frac{\partial v}{\partial x} + g \frac{\partial H}{\partial x} + \frac{4}{\rho D} \tau = 0 \quad (2)$$

in which t = time; x = distance along the pipe centerline; H = piezometric head (i.e., elevation plus pressure head); a = acoustic wave speed; v = average fluid velocity; g = acceleration due to gravity; D = inside diameter of the pipe; ρ = mass density of the fluid; and τ = shear stress at the pipe wall. Line pressure (lb/ft²) can be calculated as the product of the specific gravity (1.0 for water) and specific weight of water (i.e., 62.4 lb/ft³), and the pipeline pressure head (ft). The wall shear stress can be approximated as $\tau = \rho f |v| v / 8$ where f = Darcy-Weisbach friction factor for steady pipe flow.

The Method of Characteristics (MOC) is considered the most numerically efficient solution of the above continuity and momentum equations when modeling transient pressures in pipe systems^{1,2}. Solving these equations using MOC yields a system of ordinary differential equations. Following integration, these equations may be written in their simplified form and solved for the head and flow at pipe junctions and boundary conditions using the approach of Karney and McInnis, 1992².

NHC constructed a hydraulic transient analysis model of the system and associated facilities using the TransAM hydraulic transient analysis software. This MOC based computer model has been used to perform both steady state and hydraulic transient analysis of pipelines with diameters as large as 22 ft and flow rates up to 1,485 cfs. TransAM has been extensively verified by comparison of computed transient pressures and flow with those measured in the field (e.g., Axworthy and Chabot, 2004³) and laboratory (e.g., Axworthy, et al., 2000⁴), and predicted by codes developed by others.

The TransAM code, which was originally developed in 1984 and is co-authored by NHC's lead for hydraulic transient analysis, Dr. Axworthy, is compiled with the most recent version of FORTRAN so as to fully leverage the computing power of multi-core processors and is one of the first transient analysis programs to fully exploit the parallel processing capabilities of multi-core processors. The resulting fast

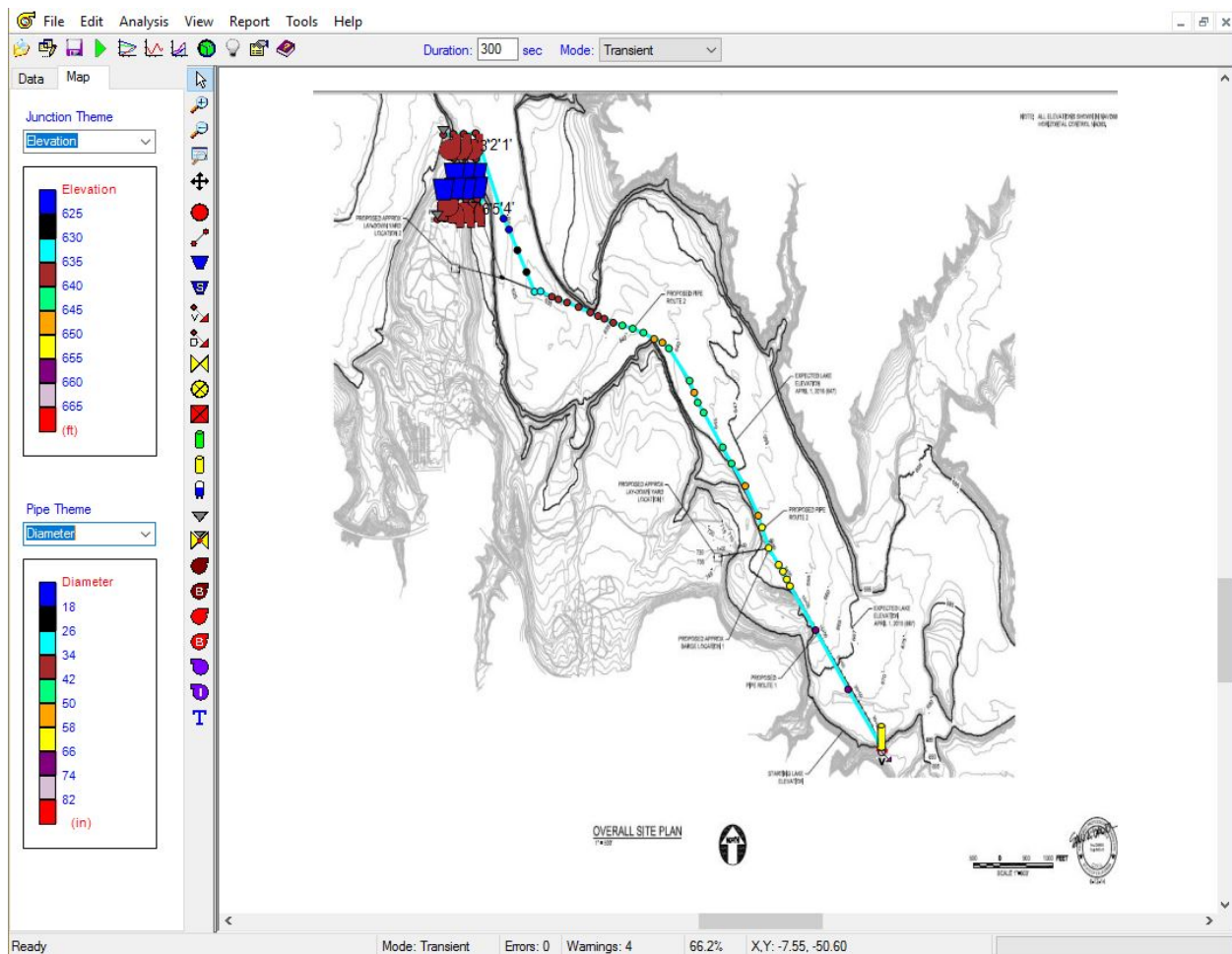
¹ Wylie, E.B., and Streeter, V.L. (1993). *Fluid Transients in Systems*. Prentice-Hall, Englewood Cliffs, NJ.

² Karney, B.W., and McInnis, D. (1992). "Efficient calculation of transient flow in simple pipe networks." *Journal of Hydraulic Engineering*, ASCE, 118(7), 1014-1030.

³ 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

⁴ Axworthy, D.H., Ghidaoui, M.S., and McInnis, D.A. (200). "Extended thermodynamics derivation of energy dissipation in unsteady pipe flow." *Journal of Hydraulic Engineering*, ASCE, 126(4), 276-287

computer execution time makes the transient analysis software ideal for performing analyses of large and complex pipeline systems.



TransAM Transient Analysis Software

3 SYSTEM FACILITIES AND CHARACTERISTICS

The facilities and characteristics associated with the Lake Cachuma Emergency Pump Station (LCEPS) and the associated pipeline are presented in this section. A schematic of the pipeline and pump station are depicted in Figure 1. This figure shows the location of the LCEPS and the North Portal Intake Tower as well as locations and elevations discussed in Section 4 for illustration of the results of the pressure surge analysis. Also, illustrated in Figure 1 are the high and low lake levels under which the LCEPS will operate.

The Cachuma Operations and Maintenance Board (COMB) plans to replace the existing pipeline that 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. When lake levels are low, the floating Lake Cachuma Emergency Pump Station (LCEPS) conveys raw water through an existing, approximately 1.9 mile long, 36-inch diameter fusion welded high density polyethylene (HDPE) pipeline that floats on the lake. The COMB plans to replace the existing pipeline with a new pipeline on the bottom of the lake. Downstream of the floating pump station the first approximately 4000 ft of pipeline will be DR17 (Class 125 psi) HDPE 4710 (31.51-inch ID) and will be anchored to the lake bottom. The remainder of the pipeline to the Intake Tower will be buried DR19 (Class 111 psi) 4710 HDPE (32-inch ID). The maximum allowable pressure for the HDPE pipeline was taken to be the pressure class of the piping plus a 30 percent surge allowance. However, as will be illustrated in Section 4, the surge pressures are predicted to not exceed the rated pressure of the pipeline with surge control measures in place. The acoustic wavespeed for the HDPE piping ranged from about 800 to 850 ft/s and the Darcy-Weisbach friction factor was calculated based on a Manning's n of 0.009, which is typical for plastic pipe. A few hundred feet downstream of the Intake Tower there is a 27-inch jet-flow gate valve, which is fully open when the pump station is operating. At 30 MGD, this valve provides sufficient back pressure to back up the water level by about 5 ft above the base of the Intake Tower.

The LCEPS is equipped with seven (7) Grundfos split case (horizontal shaft) centrifugal pumps that are operated on variable frequency drives (VFDs). 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. A pump receives water from the lake through a fish screen. A 16-inch diameter Pratt double disc check valve (fully open $C_v = 3,949$ gpm/vft) is installed between the fish screen and the pump to 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 (fully open $C_v = 2,934$ gpm/vft), which is used for isolation, just before the pump discharge line connects to one of the pump station's 30-inch diameter headers. 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. Piping at the barge pump station is Schedule 10 steel pipe with a minimum wall thickness of 0.25 inches.

The rated characteristics for the pumps at the LCEPS are summarized in Table 1 and the performance curve for the pumps that was supplied by HDR is shown in Figure 2. The total polar moment of inertia (WR^2) of the rotating parts of the pump-motor unit was estimated from manufacturer data for similarly sized pumps and motors. High and low lake levels of 676 ft and 631 ft, respectively, define the range of operation for the pump station.

Table 1: Rated characteristics for pumps at the Lake Cachuma Emergency Pump Station

<i>Characteristic</i>	<i>Emergency Pump Station</i>
No. of Pumps	6 duty, 1 standby
Rated Discharge/Pump (gpm)	5,000
Rated Head (ft)	61.11
Rated Speed (rpm)	1,780
Rated Efficiency (%)	80
Motor Power (hp)	100
Pump and Motor Inertia, WR^2 (lb-ft ²)	47

For this analysis, we have relied on data (e.g., engineering drawings, pump performance curve, lake levels, pipe material type and DR ratio, etc.) provided to us by HDR. Should any component of this system be significantly modified relative to its current design as specified above, it would be necessary to update the pressure surge analysis and recommendations based on the modified design.

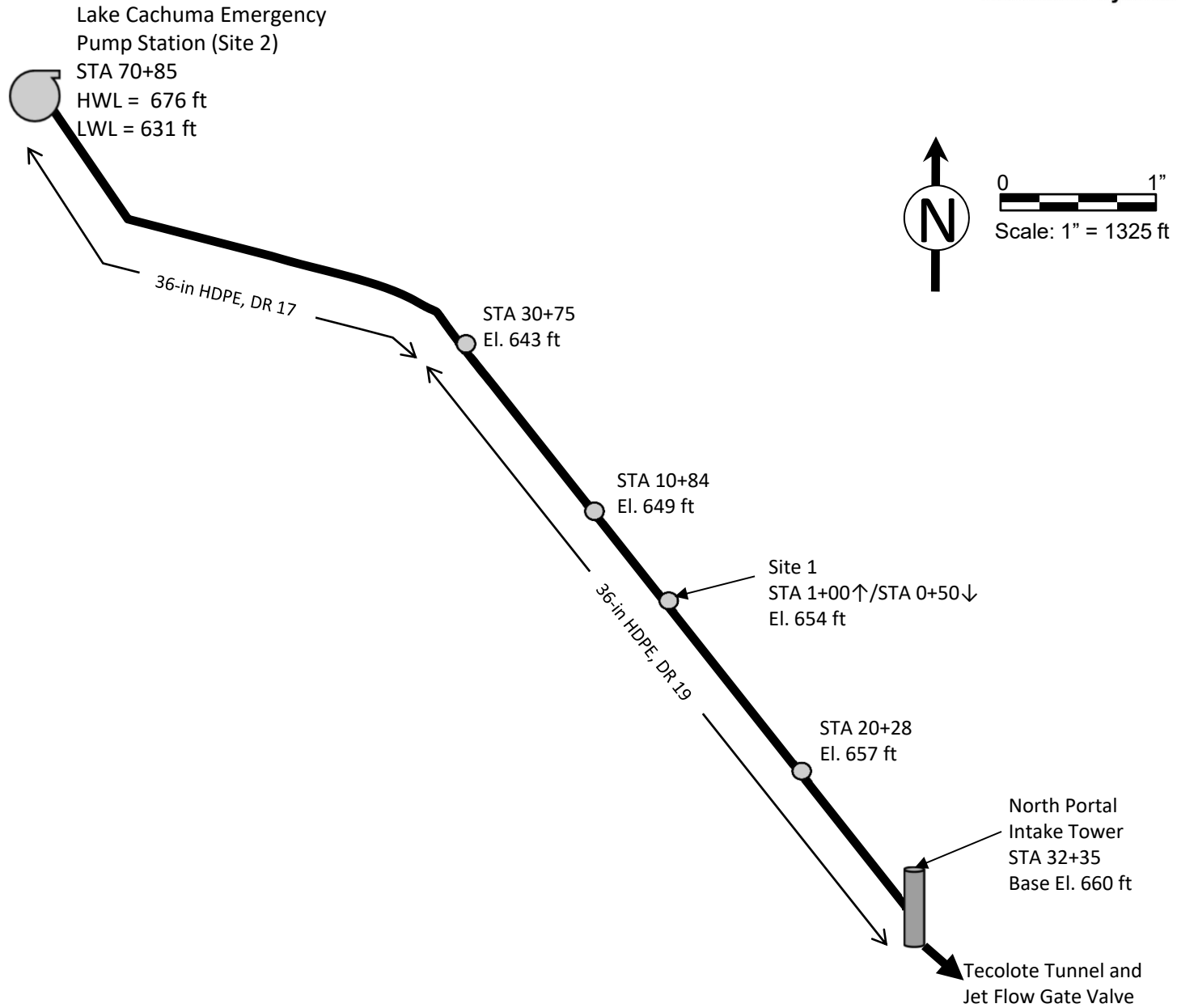


Figure 1: Schematic (Plan) of the Lake Cachuma Emergency Pump Station and associated pipeline

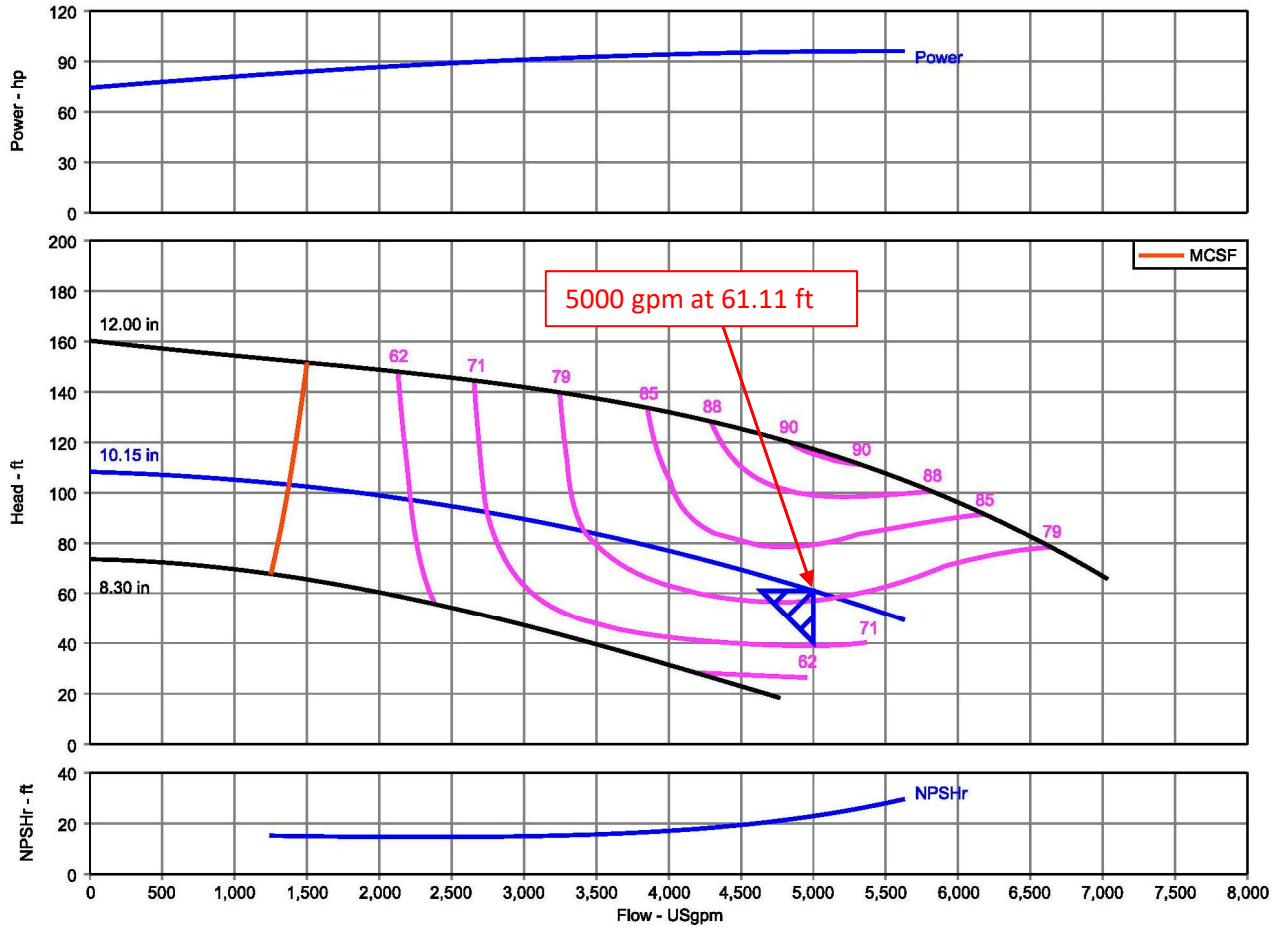


Figure 2: Head-discharge performance curve for centrifugal pumps at the Lake Cachuma Emergency Pump Station (Courtesy of Grundfos)

4 PRESSURE SURGE ANALYSIS

This section presents the results of pump power failure and pump start-up simulations for the Lake Cachuma Emergency Pump Station (LCEPS) and the associated proposed pipeline. Surge control measures are recommended to protect the system from adverse pressure surges created by a loss of power to the pumps at the LCEPS. Recommendations for safely starting the pumps are also provided.

4.1 Pump Power Failure

Power failures are unpredictable and will therefore occur at the LCEPS without anticipation. Following a loss of power to a pump, there will be a rapid drop in both the flow rate and pressure at the barge pump station because at least several seconds will elapse before backup power (if available) activates and restarts the pumps, and the variable frequency drives will not function following a loss of power. The results of the pump power failure analysis show that a traveling low pressure (i.e., pressure drop) wave will be created by the drop in pressure at the barge pump station. This low pressure wave will propagate out from the pump station and into the pipeline toward the Intake Tower, where wave reflections will occur.

The results of the simulations for pump power failure that are presented in this section focus on the operation of the LCEPS when there is a low lake level because these conditions are predicted to create the worst-case transients in the system.⁵ Figures illustrating the results of the pump power failure analysis show the maximum/minimum hydraulic grade line (HGL) envelope predicted by the transient simulation, the initial steady state HGL elevation, the pipeline elevation profile, and the pipeline rated HGL. The rated HGL is equal to the elevation of the pipeline plus the rated pressure (see Section 3) converted to a pressure head for the pipeline. When the duty pumps (i.e., 6 pumps) are operating at the LCEPS and there is a low lake level, the maximum steady state operating flow rate at the barge pump station is predicted to be 30.3 MGD (at 84 ft of head).

Simulations were performed both with and without the barge pump station combination air valves (CAV) in service. Figure 3 shows the results of the pump power failure analysis with 6 duty pumps initially operating at the LCEPS, a low lake level and the combination air valves at the pump station out-of-service. As this figure shows, the minimum HGL is predicted to drop to vapor pressure (i.e., approximately 32 ft below the crown of the pipeline) in a significant segment of the pipeline. The pressure is reduced to vapor pressure long enough for vapor cavities to form in the pipeline. Upon re-pressurization of the pipeline by flow reversal/water hammer wave reflection, the vapor cavities will collapse and produce very large magnitude positive pressures that could damage the pipeline. Also, if the pipeline does not have sufficient strength to resist the large magnitude negative pressures associated with vapor pressure, it could collapse.

⁵ Note that simulations were also performed for high lake levels. The results of these simulations and the conclusions derived from the results of these simulations are similar to the simulation results and conclusions presented in this report for a low lake level.

This figure does not reflect the large magnitude positive pressures that are created by vapor cavity collapse. This is because it is impossible to predict with any certainty the magnitude and location of positive pressures associated with vapor cavity collapse. However, it is known that the magnitude of these positive pressures may be hundreds of psi (Bergant and Simpson, 1999)⁶, which when added to the steady state pressure would exceed the maximum allowable pressure of the pipeline. NHC recommends preventing the possible formation and collapse of vapor cavities in the system to ensure safe operation of the pump station and pipeline. The following Surge Protection section discusses how to reduce the likelihood of vapor cavity formation and collapse and describes surge protection recommendations for the system.

A movie of the simulation summarized in Figure 3 is provided on the CDROM enclosed as Appendix A. The movie (i.e., `power-failure.avi`) shows the animation of the pipeline HGLs prior to and after loss of power to the duty pumps at the LCEPS. The movie file can be viewed with Microsoft Windows Media Player© or comparable software. Note that the results of the hydraulic transient analyses are computed in real-time, but may be accelerated in the movie for the convenience of the reader.

Figure 4 depicts the predicted pressure head histories at the barge pump station and STA 10+84 and STA 20+28 on the pipeline (see Figure 1) after a loss of power to the duty pumps at the LCEPS. This figure shows that the pressure is predicted to drop to vapor pressure at STA 10+84 and STA 20+28 following pump power failure. It also shows that the pressure head is predicted to drop to -10 ft at the pump station because the combination air valves are out-of-service, which could damage the steel piping at the floating pump station if the piping does not have sufficient strength to resist this low pressure.

The above simulation was repeated for a loss of power to 6 duty pumps initially operating at the LCEPS with a low lake level and the combination air valves at the pump station in service. The results of this power failure simulation are depicted in Figure 5 and show that at the pump station the minimum HGL is controlled to approximately the elevation of the pump station, but the minimum HGL is predicted to drop sufficiently below the pipeline to create vapor pressure over a significant segment of the pipeline. The predicted pressure head histories at the barge pump station and STA 10+84 and STA 20+28 on the pipeline (see Figure 1) after a loss of power to the duty pumps at the LCEPS with the barge pump station combination air valves in service are depicted in Figure 6. As this figure shows, the combination air valves open and prevent large magnitude negative pressures from developing at the barge pump station. However, the combination air valves are also predicted to vent air in an uncontrolled manner from the pipeline and eventually slam closed, which could damage the valve float and create adverse waterhammer pressure waves that could damage the pipeline.

Similar pump power failure simulations were performed for a high lake level. Under this condition vapor pressure and large magnitude negative pressures are predicted to occur in the pipeline after a loss of power to the duty pumps.

⁶ Bergant, A. and Simpson, A.R. (1999). "Pipeline column separation flow regimes." *Journal of Hydraulic Engineering*, ASCE, 125(8), 835-848.

Surge Control Design Criteria

The following criteria were used to determine if surge control is necessary for the system and to guide the sizing of surge control measures:

- If the predicted surge pressure at the pump station or in the pipeline drops low enough to reach vapor pressure, surge control measures will be designed to prevent the surge pressures from dropping to vapor pressure.
- If the predicted surge pressure at the pump station or in the pipeline drops low enough to create large magnitude negative pressures, surge control measures will be designed to reduce the magnitude of the negative pressures to acceptable limits that will protect the integrity of the pipeline.
- If the predicted surge pressure at the pump station or in the pipeline drops low enough to open a combination air valve that subsequently is predicted to slam closed on re-pressurization and create adverse surge pressures that could damage the pipelines and the valve float, surge control measures will be designed to prevent combination air valve slam.
- If the predicted maximum HGL in the pipeline exceeds the maximum allowable HGL (see Section 3), surge control measures will be designed to prevent the surge pressures from exceeding the maximum allowable HGL.

Surge Protection

Several surge control measures were considered for this system and are described as follows:

- Surge anticipating valves were considered, but are not recommended for the LCEPS, because they will not prevent vapor cavity formation and collapse in the pipeline following pump power failure. The installation of a surge anticipating valve at the pump station would increase both the magnitude of the negative pressure and the extent of the pipelines over which vapor pressure is predicted to occur following pump power failure. The surge-anticipating valve fully opens on pump power failure, causing the pressure at the pump station and the resulting pressure drop wave to fall faster than if a surge-anticipating valve was not installed. This is because the surge anticipating valve fully opens on power failure and discharges a large quantity of water back to the lake in the anticipation of a returning high pressure surge wave.
- Although useful for pump start-up, VFDs will not function following a power outage at the LCEPS and therefore would not prevent vapor cavity formation and collapse in the pipeline.
- Flywheels are an attractive option because of their minimal maintenance requirements, but are difficult to install between the pumps and motors at the pump station without significantly expanding the barge. In addition, they could create harmonic issues with VFDs.

- A pressurized surge tank could eliminate vapor cavity formation and collapse in the pipeline following pump power failure, but would not be suitable because it would drain and introduce a significant volume of air to the pipeline. It would also be impractical to install a surge tank on the barge. If installed on the adjacent embankment to the west, a surge tank would be too far from the barge pump station to be effective and would also drain and introduce air to the pipeline following a loss of power to the pumps.

NHC believes that a surge control strategy involving the installation of a standpipe on the embankment adjacent to the LCEPS in combination with a check valve that introduces lake water to the pipeline and surge check features on the barge pump station CAVs is best suited for this system, because this strategy will protect the pipeline from adverse surges, eliminate CAV slam, maximize the effective life of the pipeline, and minimize the introduction of air to the pipeline.⁷

More specifically, a 36-inch diameter DR17 (Class 125 psi) HDPE 4710 (31.51 inch ID) standpipe should be installed from the main pipeline just below the barge pump station to El. 770 ft on the adjacent embankment to the west. A preliminary alignment and elevation drawing for the standpipe was prepared by HDR and is shown in Appendix B with a few minor NHC comments and edits.

In addition to the standpipe, it is recommended that a minimum 8-inch diameter lake water inlet swing check valve (e.g., APCO Series 6000, or equivalent) be installed at STA 20+28 on the pipeline (see Figure 1) in a manner such that lake water (if the lake level is high) or air (if the lake level is low) will enter the pipeline when the pressure on the inside of the pipeline drops below the pressure on the outside of the pipeline. It is understood that the pipeline will be inclined upward from this location to the Intake Tower so any air that enters the pipeline will be vented from the pipeline at the Intake Tower. The valve could be installed in a screened vault to provide protection from debris.

To prevent combination air valve slam at the barge pump station it is recommended that the existing 8-inch diameter combination air valves at the barge pump station be converted to controlled venting vacuum relief valves by installing a surge check feature (e.g., an 8-inch diameter APCO CSV-1600, or equivalent) on the inlet of the combination air valve. A photo of a controlled venting vacuum relief valve that utilizes a surge check feature is shown in Figure 7. Regular maintenance should be performed on the valves to ensure that they are always in good working order.

Figure 8 shows the results of the pump power failure analysis when there are 6 duty pumps initially operating at the LCEPS, a low lake level, barge pump CAVs with surge check features in service, and the surge protection measures recommended above installed. As this figure illustrates, the minimum HGL elevation is predicted to drop low enough to open the water inlet swing check valve at STA 20+28 on the pipeline. Because the lake water level is below the elevation of the swing check valve, air (as opposed to water) is introduced to the pipeline, which should be vented at the Intake Tower downstream. The opening of the swing check valve controls the predicted negative pressures in the pipeline to a

⁷ The introduction of air to the pipeline makes it more difficult to anchor the pipeline to the bottom of the lake.

magnitude not exceeding 14 ft. Negative pressure heads of this magnitude should not damage the pipeline, but a negative pressure head of 14 ft (6 psi) should be added to the loading on the HDPE pipeline and the pipe integrity should be checked by the pipeline design engineer. The maximum HGL is predicted to not exceed the rated HGL following a loss of power to the duty pumps with surge protection installed.

A movie of the simulation summarized in Figure 8 is provided on the CDROM enclosed as Appendix A. The movie (i.e., `power-failure-wp.avi`) shows the animation of the pipeline HGLs prior to and after a loss of power to the pumps at the LCEPS with the recommended surge control installed.

Figure 9 depicts the predicted pressure head histories at the barge pump station and STA 10+84 and STA 20+28 on the pipeline after a loss of power to the duty pumps at the LCEPS with surge protection installed. This figure shows that the controlled venting vacuum relief valves at the pump station are predicted to briefly open, introduce air to the pipeline and then close in a controlled manner. Since it will not be possible to prevent the opening of the barge pump station controlled venting vacuum valves following pump power failure, the pipeline should be designed to accommodate air in the pipeline. Figure 9 also shows that the water level in the standpipe is predicted to drop from about El. 710 ft to no lower than the lake level, which means that the standpipe will not drain and air will not be introduced to the pipeline by the standpipe.

A simulation was also performed for loss of power to 6 duty pumps at the LCEPS with a high lake level, and the surge protection measures recommended above installed. For this simulation, each pump was operated at a reduced speed of 1380 rpm for a total pump station flow rate of 30 MGD. Figure 10 shows that the maximum and minimum HGLs are predicted to be within acceptable limits for the pipeline following loss of power to the pumps with the recommended surge protection measures in place. The lake water inlet swing check valve at STA 28+28 is predicted to open and discharge lake water into the pipeline during the power failure event. The standpipe is predicted to not drain and therefore will not introduce air to the pipeline. The predicted pressure head histories at the barge pump station and STA 10+84 and STA 20+28 on the pipeline are shown in Figure 11. Figure 11 also shows the water level history in the standpipe and that the controlled venting vacuum relief valves are predicted to open and will introduce air to the pipeline, while controlling the predicted negative pressure at the pump station to a magnitude not exceeding 2 ft.

Although an unlikely event, a simulation was performed for loss of power to 6 barge pumps initially operating at full speed (total pump station flow 38 MGD) with a high lake level and surge protection installed. Figure 12 shows that the minimum HGL elevation is predicted to drop no more than 3 ft below the crown elevation of the pipeline and the maximum HGL elevation is predicted to not exceed the rated HGL for the pipeline. The lake water inlet swing check valve at STA 28+28 is predicted to open and discharge lake water into the pipeline during the power failure event and the standpipe is predicted to not drain. Figure 13 illustrates the predicted pressure head histories at the barge pump station and at STA 10+84 and STA 20+28 on the pipeline and shows that the controlled venting vacuum relief valves at the barge pump station are predicted to open. The water level history in the standpipe is also illustrated.

Simulations were performed for the simultaneous operation of both duty and standby pumps prior to a loss of power to the barge pump station with both high and low lake levels and the surge protection recommended above in place. For brevity, the results of these analyses are not illustrated in this report. However, the results of these simulations show that the recommended surge control measures will provide satisfactory surge protection for the pipeline under these unlikely conditions.

The results of an air entrainment sensitivity analysis, which are not illustrated in this report, show that the recommended surge control measures will provide satisfactory surge protection for the pipeline should the fluid be entrained with air prior to loss of power to the pumps.

4.2 Pump Start-Up

Prior to pump start the double-disc check valve just above the fish screen through which the pump receives water will be closed and there will be static pressure in the pipeline and on both the suction and discharge sides of the pump. When a pump at the LCEPS is started, the pressure will increase rapidly and the pump will convey flow into the pipeline. Acceleration of the flow into the pipeline will create a traveling pressure upsurge wave that will propagate out from the pump station and into the pipeline toward the Intake Tower. Control of pressure surges that are created upon pump start-up is simply a matter of controlling the rate of fluid acceleration at the pump. Usually this is accomplished by adjusting the pump speed on the VFD.

It is recommended that each pump at the LCEPS be brought from idle (i.e., 0 rpm) to full operating speed (i.e., 1780 rpm) in 120 seconds or longer with at least a 120 second lag between each pump start. The pump ramp should be linear and the total start-up time sequence for six duty pumps should be at least 12 minutes. The pumps can be started in any order, but they should be started one at a time.

The results of the analysis for pump startup at the LCEPS with a low lake level and surge protection installed are illustrated in Figure 14. This figure shows that the maximum HGL elevation is predicted to not exceed the rated HGL of the pipeline when the pumps are started as recommended above. The minimum HGL is predicted to remain above the pipeline. Figure 15 shows the predicted pressure head records at the barge pump station and at STA 10+84 and STA 20+28 on the pipeline following pump startup. The water level history in the standpipe is also illustrated.

A movie of the simulation summarized in Figure 14 is provided on the CDROM enclosed as Appendix A. The movie (i.e., *start-up-wp.avi*) shows the animation of the pipeline HGLs after pump startup at the LCEPS with the recommended surge protection installed.

In the above simulation, there was sufficient static pressure at the barge pump station to ensure that the proposed controlled venting vacuum relief valves would remain closed. However, when there is sufficient water in the lake that the elevation of the barge pump station exceeds the base elevation of the Intake Tower the proposed controlled venting vacuum relief valves will allow air into the piping at the barge pump station when the pumps are idle and when they are operating, but not generating sufficient pressure at the pump station to fully pressurize the air valves. If the piping at the barge pump station contains air prior to pump start-up, one or more pumps should be ramped up to speed slowly to

fully pressurize the air valves prior to starting additional pumps.⁸ Once the air valves are pressurized (i.e., closed), pumps can be started as recommended above.

Figure 16 illustrates the results of the pump start-up analysis for a high lake level with surge protection installed. Initially three pumps were operated at low speed to fully pressurize the controlled venting vacuum relief valves at the barge pump station. These pumps were ramped from low speed to full speed in accordance with the start-up recommendations above and then the idle pumps were started one at a time. This figure shows that the maximum HGL is predicted to not exceed the rated HGL and the minimum HGL is predicted to remain above the base elevation of the Intake Tower. Since the initial steady state HGL at STA 20+28 is below the lake level, the lake water inlet check valve is initially open and then closes when the pressure in the pipeline is increased by the start-up of additional pumps. The predicted pressure head records at the barge pump station and at STA 10+84 and STA 20+28 on the pipeline following pump startup are depicted in Figure 17. The water level history in the standpipe is also illustrated.

⁸ The flow rate in a pipeline containing air should be controlled so as not to exceed 1 ft/s velocity in the pipeline until the air has been evacuated from the pipeline and it is flowing full (i.e., pressurized). However, when there is a high lake level it will be necessary for the velocity to exceed 1 ft/s in this pipeline if the piping at the barge pump station is to be fully pressurized.

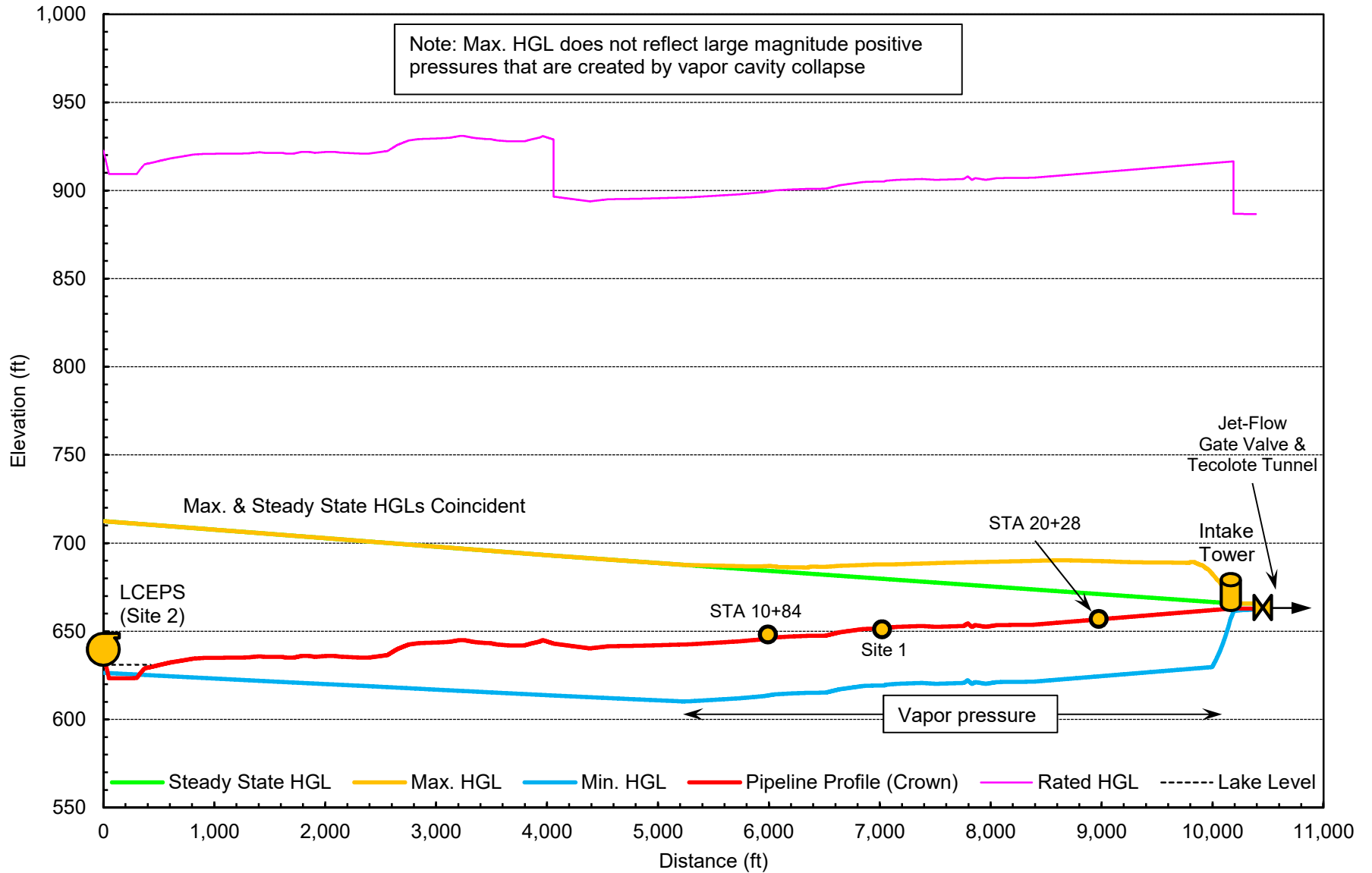


Figure 3: HGL elevations in pipeline following loss of power to pump station with low lake level, and without surge protection

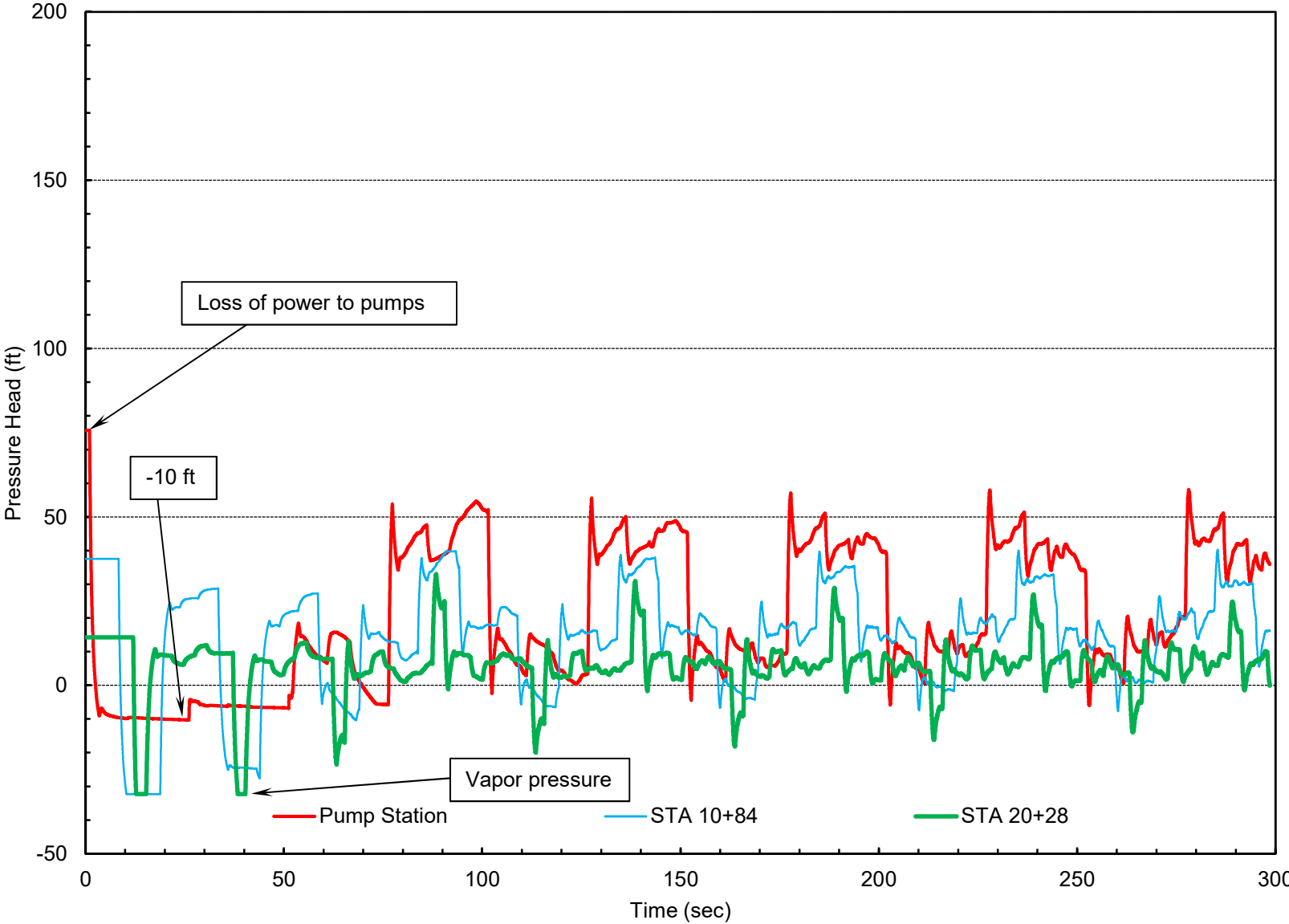


Figure 4: Pressure head records following loss of power to pump station with low lake level, and without surge protection

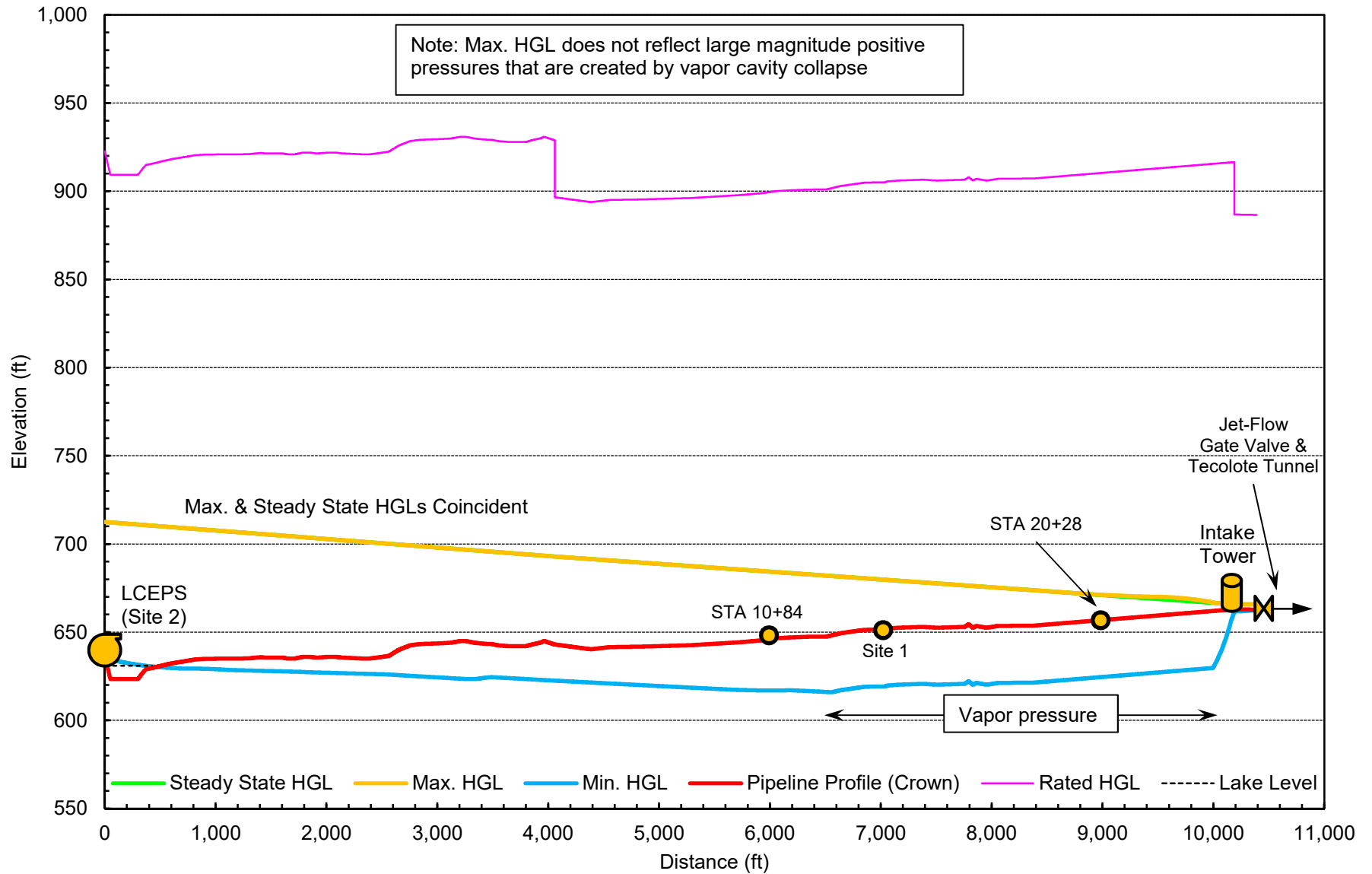


Figure 5: HGL elevations in pipeline approximately 100 seconds after loss of power to pump station with low lake level and combination air valves at pump station

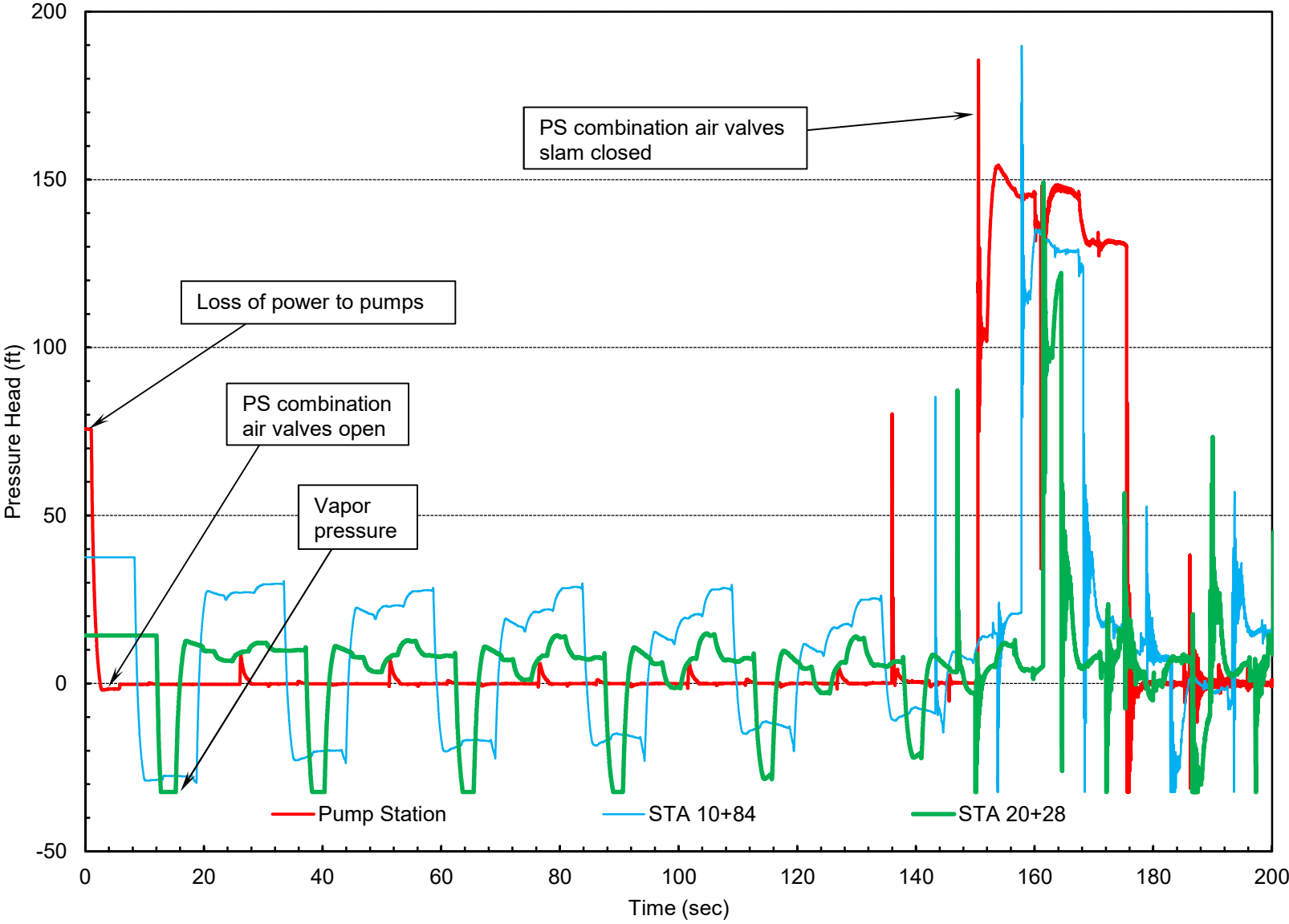
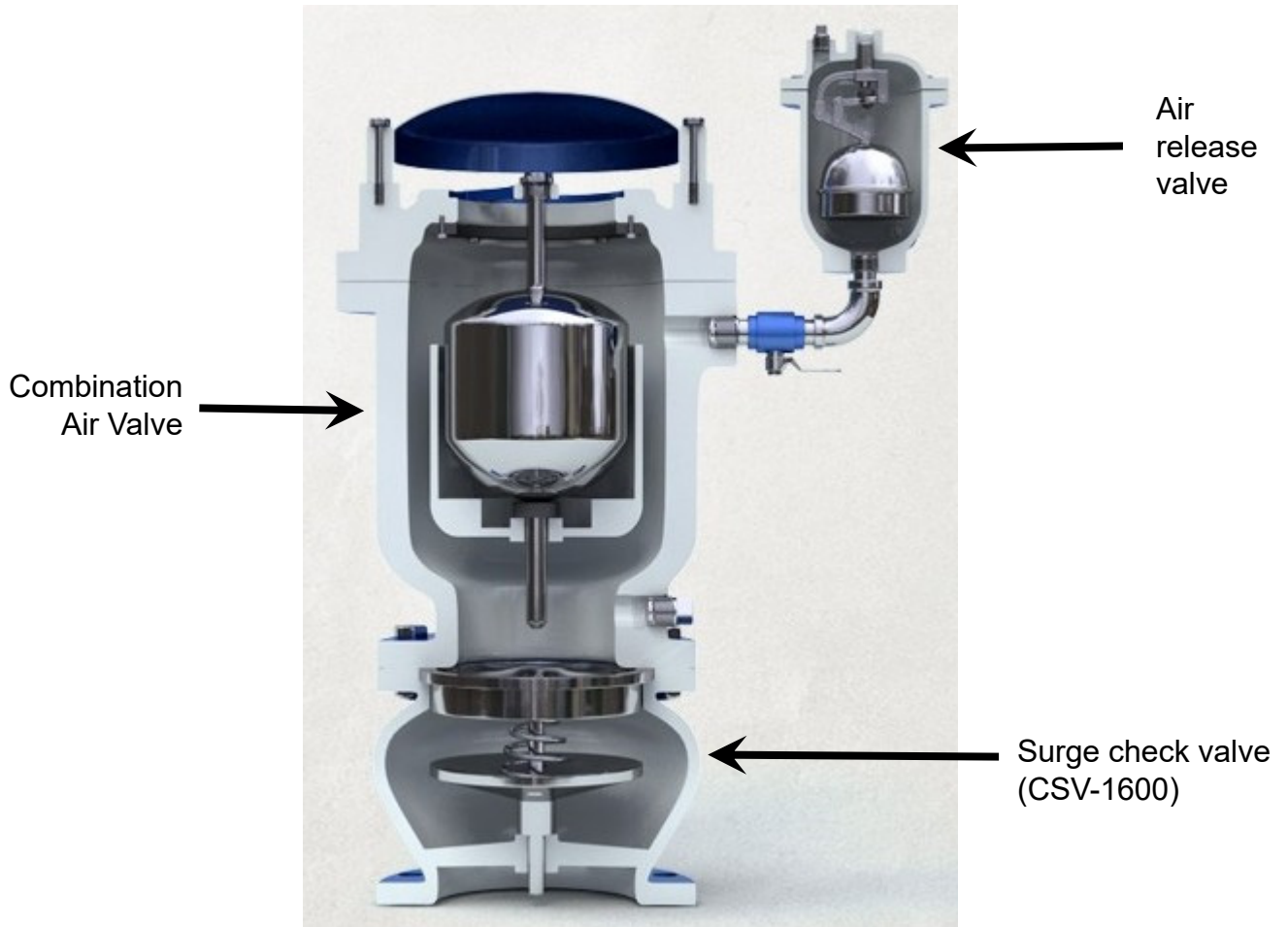


Figure 6: Pressure head records following loss of power to pump station with low lake level and combination air valves at pump station



**Figure 7: Controlled venting vacuum relief valve
(APCO Series 1700 courtesy of APCO Valves)**

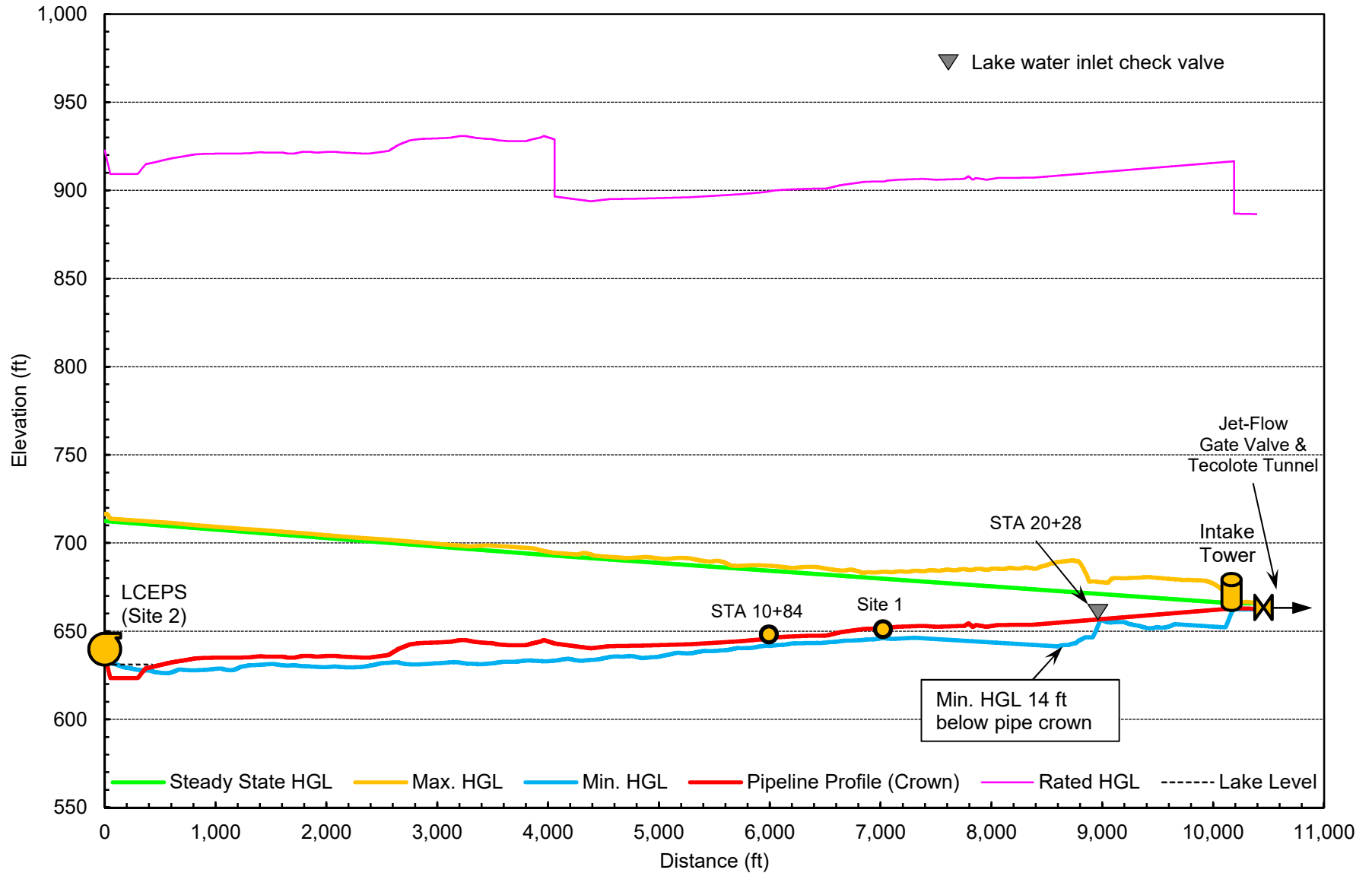


Figure 8: HGL elevations in pipeline following loss of power to pump station with low lake level and surge protection

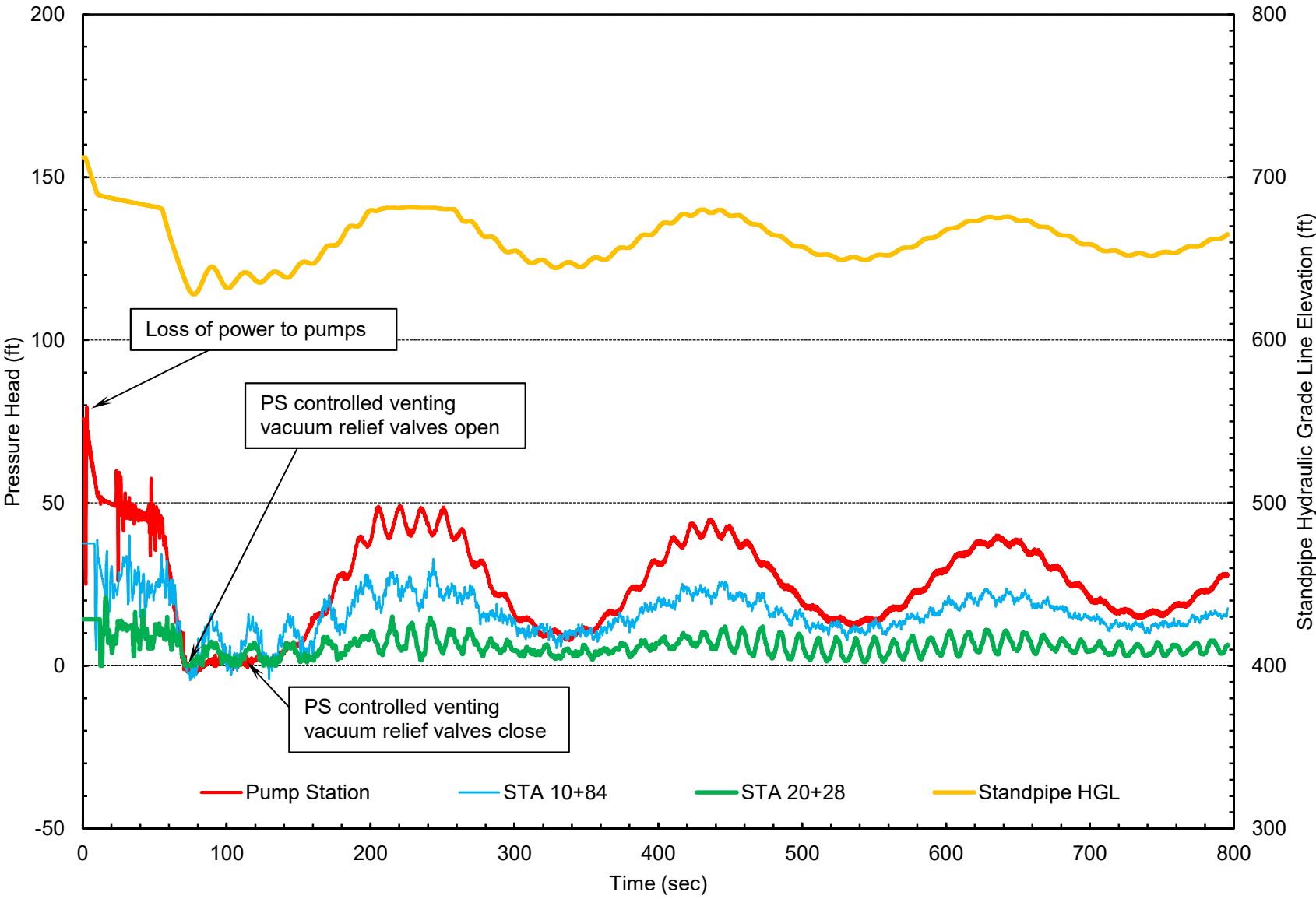


Figure 9: Pressure head and HGL records following loss of power to pump station with low lake level and surge protection

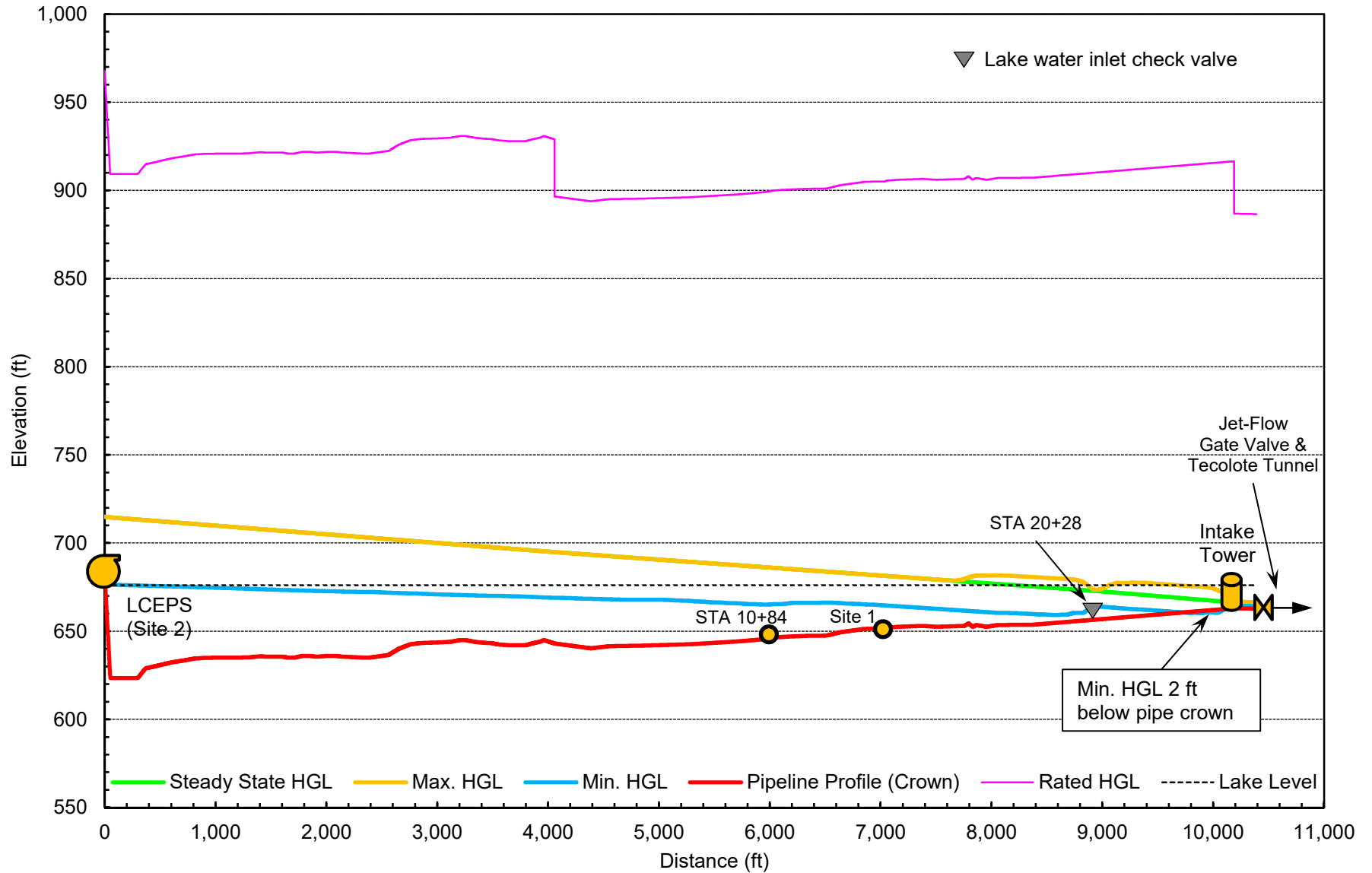


Figure 10: HGL elevations in pipeline following loss of power to pumps initially operating at reduced speed with high lake level and surge protection

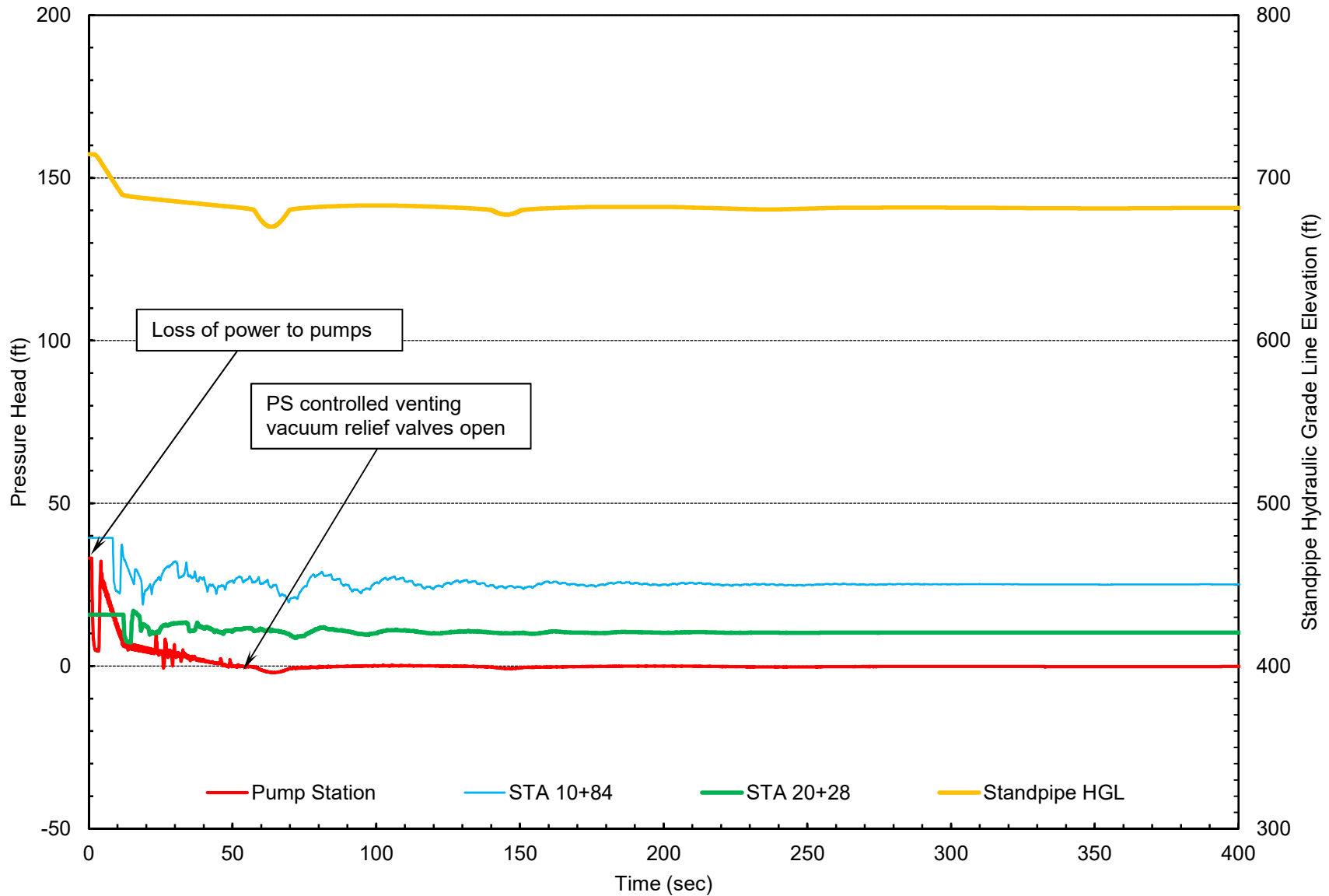


Figure 11: Pressure head and HGL records following loss of power to pumps initially operating at reduced speed with high lake level and surge protection

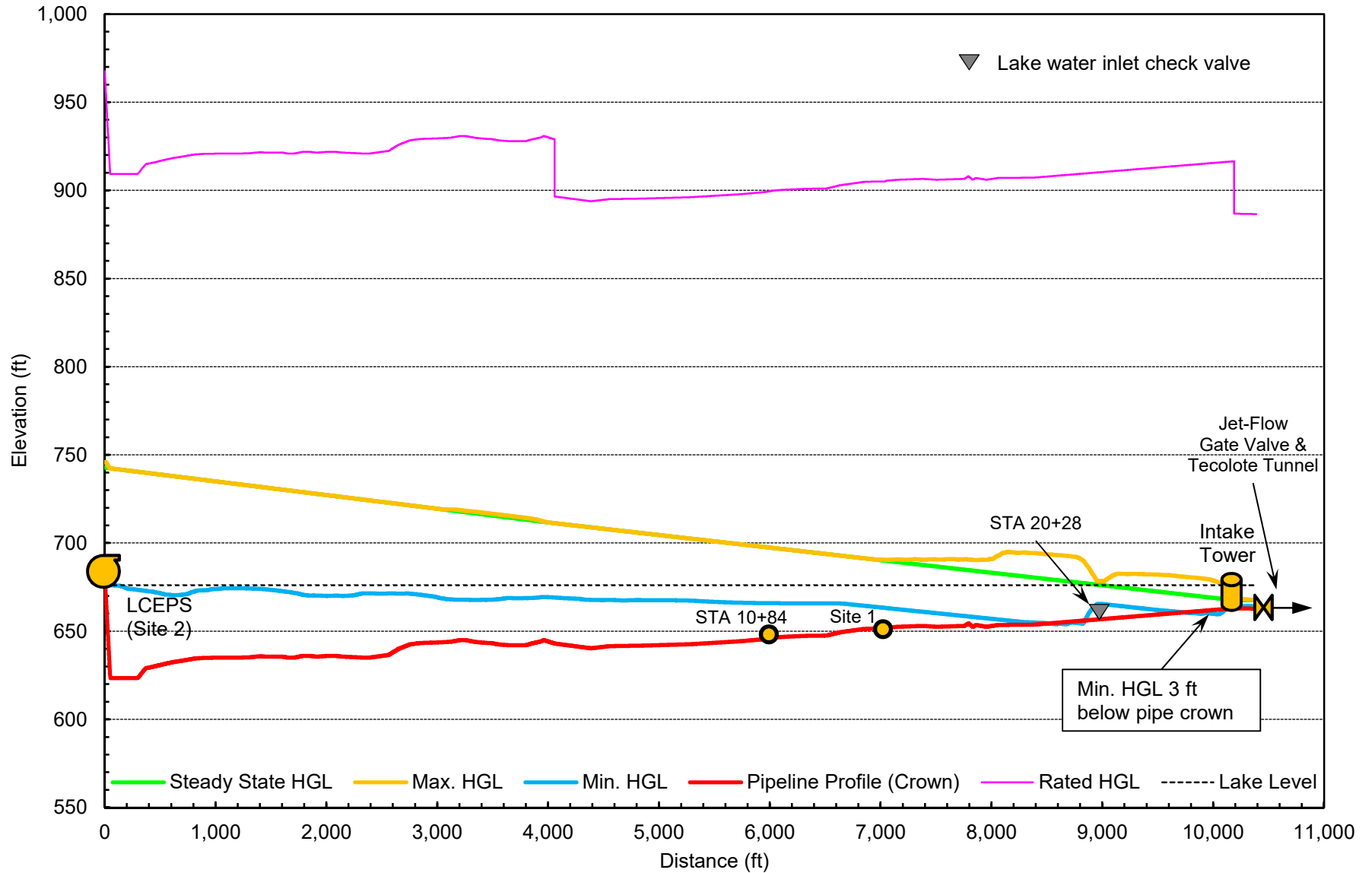


Figure 12: HGL elevations in pipeline following loss of power to pumps initially operating at full speed with high lake level and surge protection

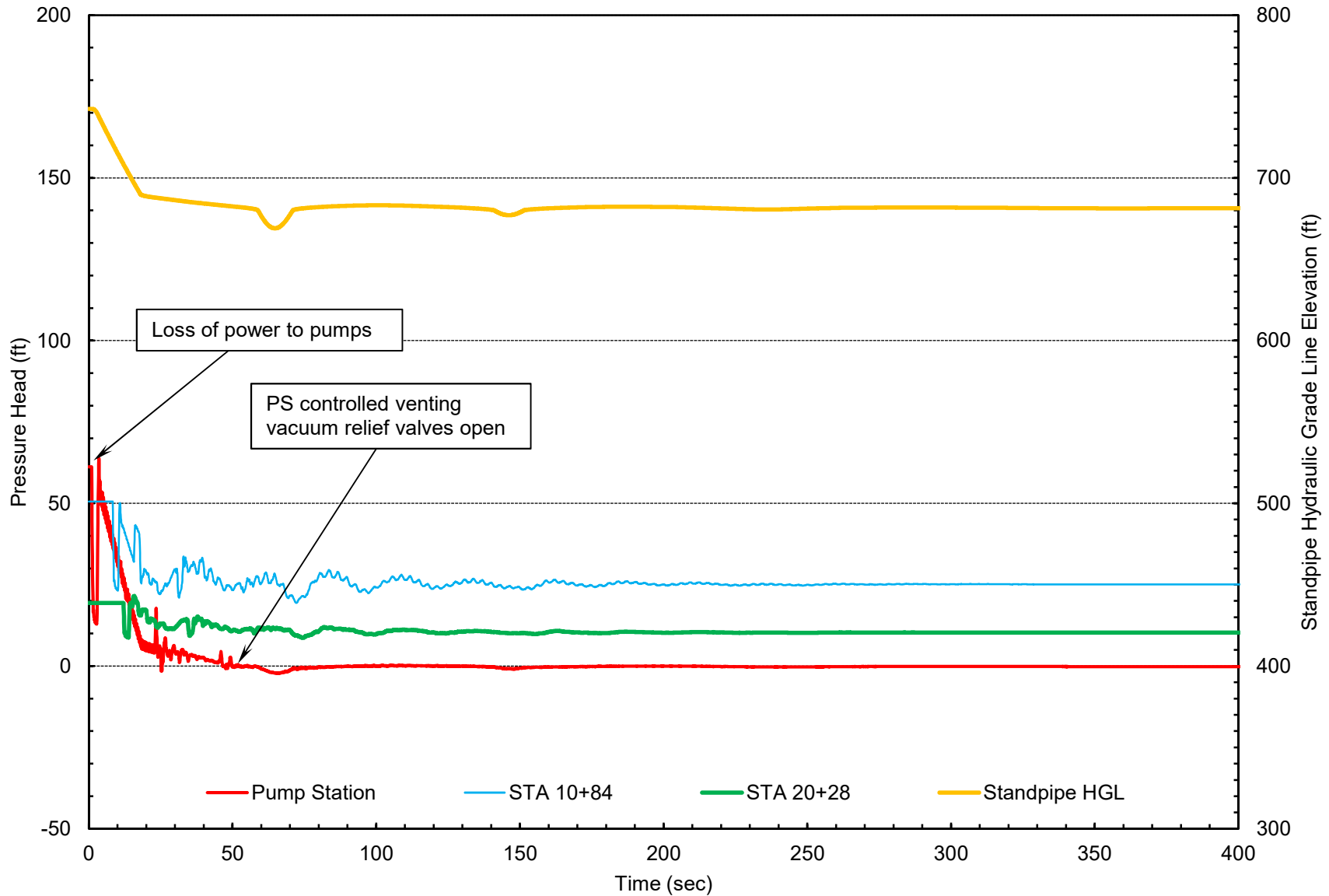


Figure 13: Pressure head and HGL records following loss of power to pumps initially operating at full speed with high lake level and surge protection

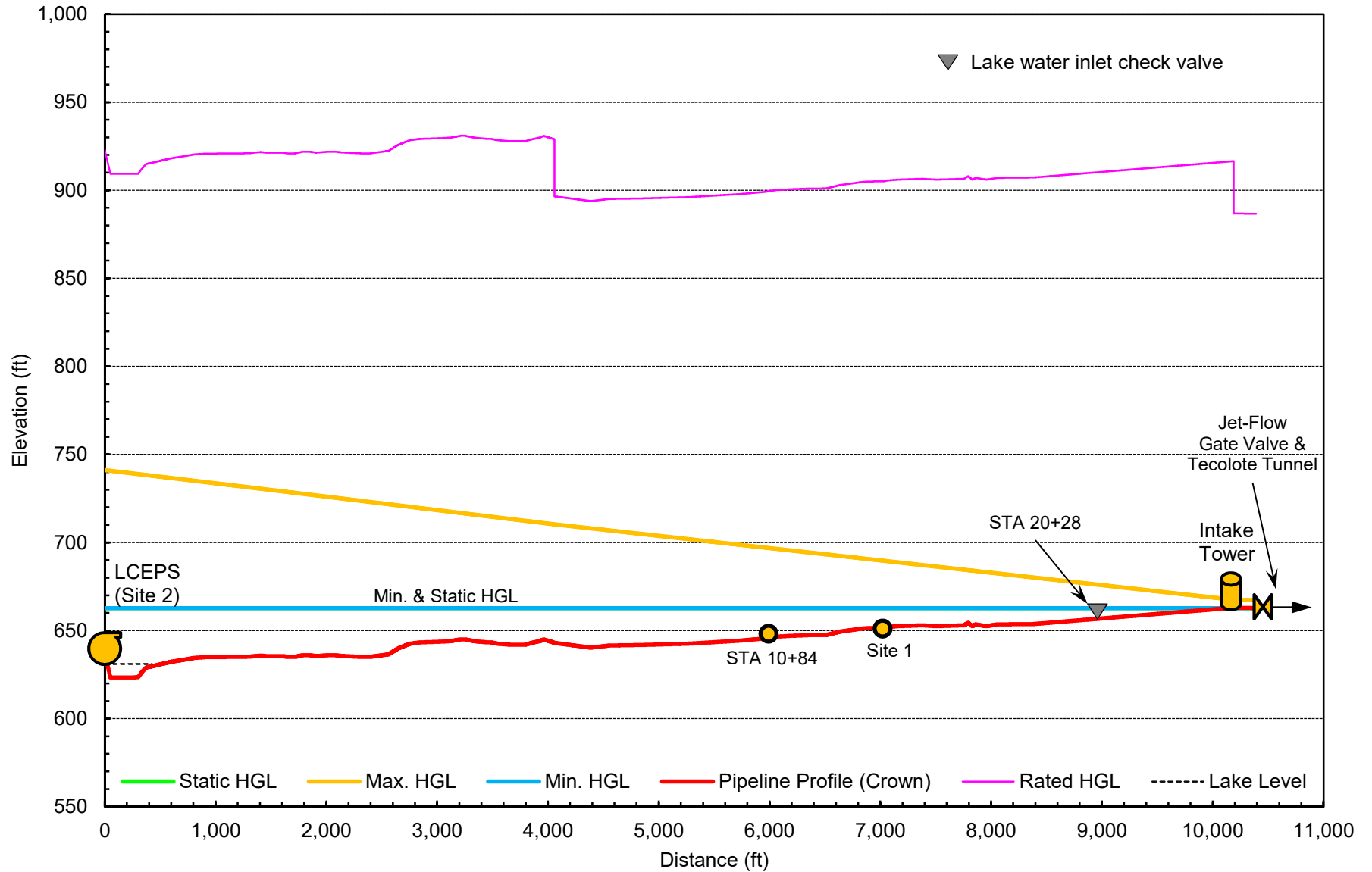


Figure 14: HGL elevations in pipeline after start-up of pump station with low lake level and surge protection

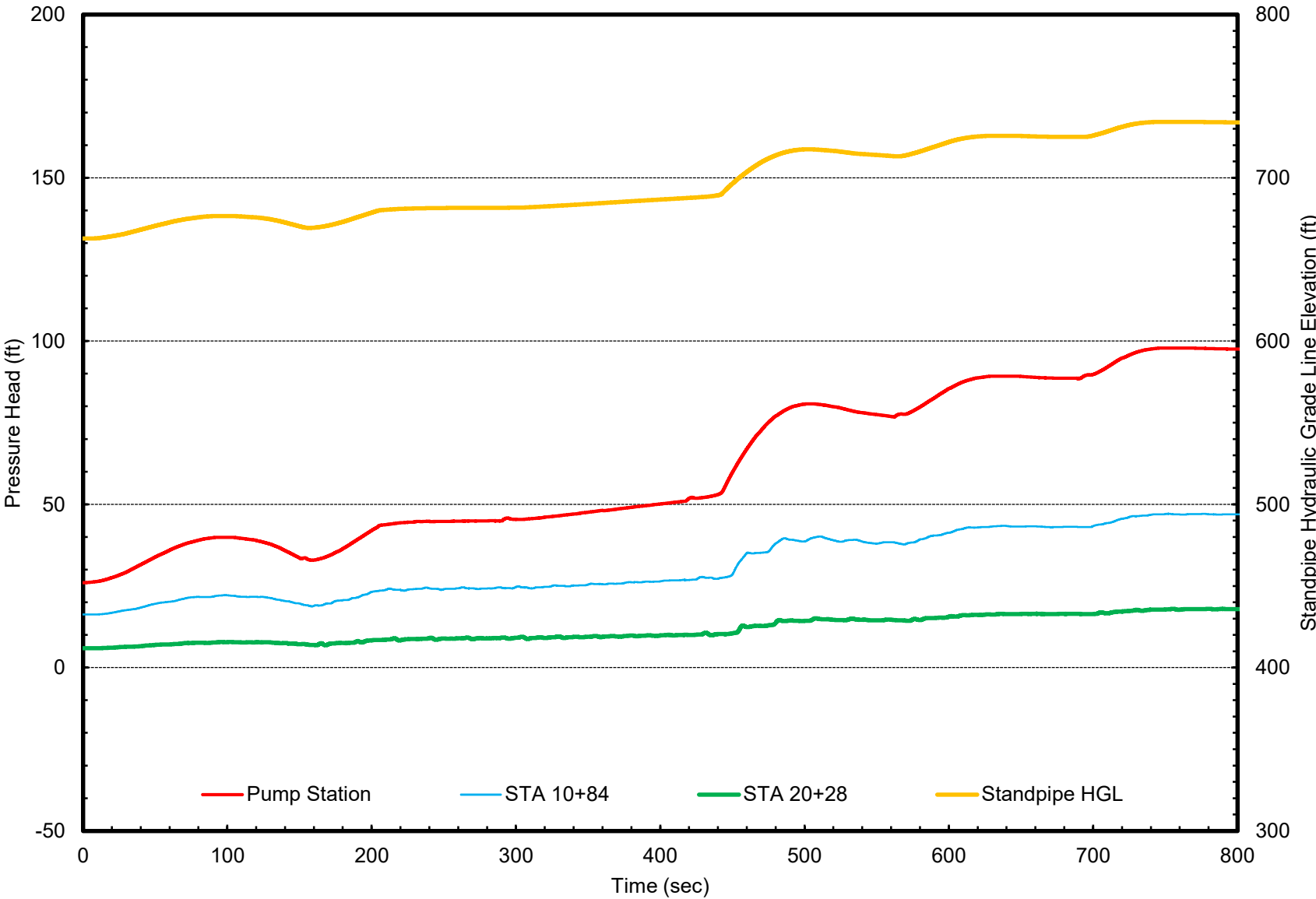


Figure 15: Pressure head and HGL records after start-up of pump station with low lake level and surge protection

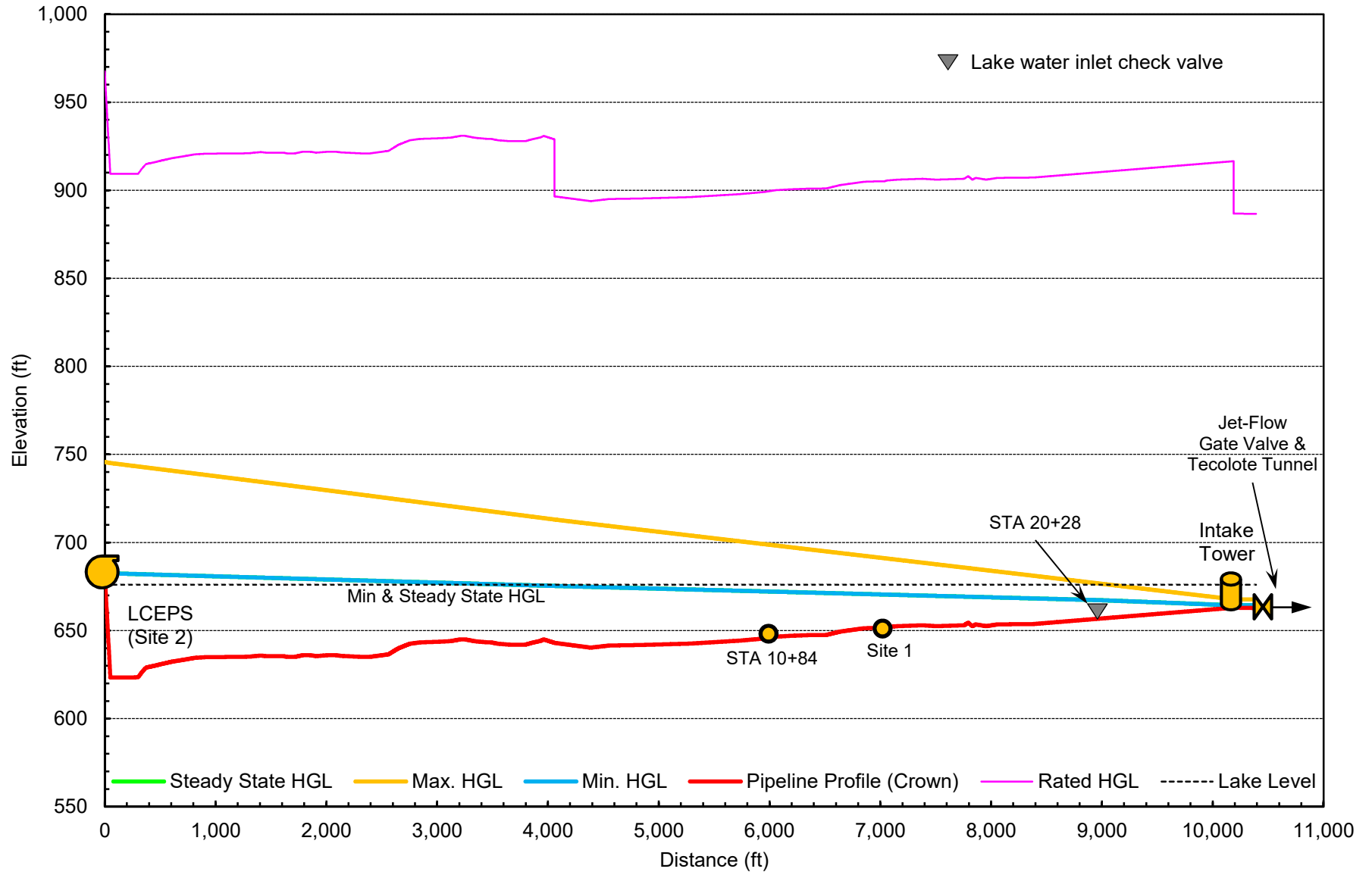


Figure 16: HGL elevations in pipeline after start-up of pump station with high lake level and surge protection

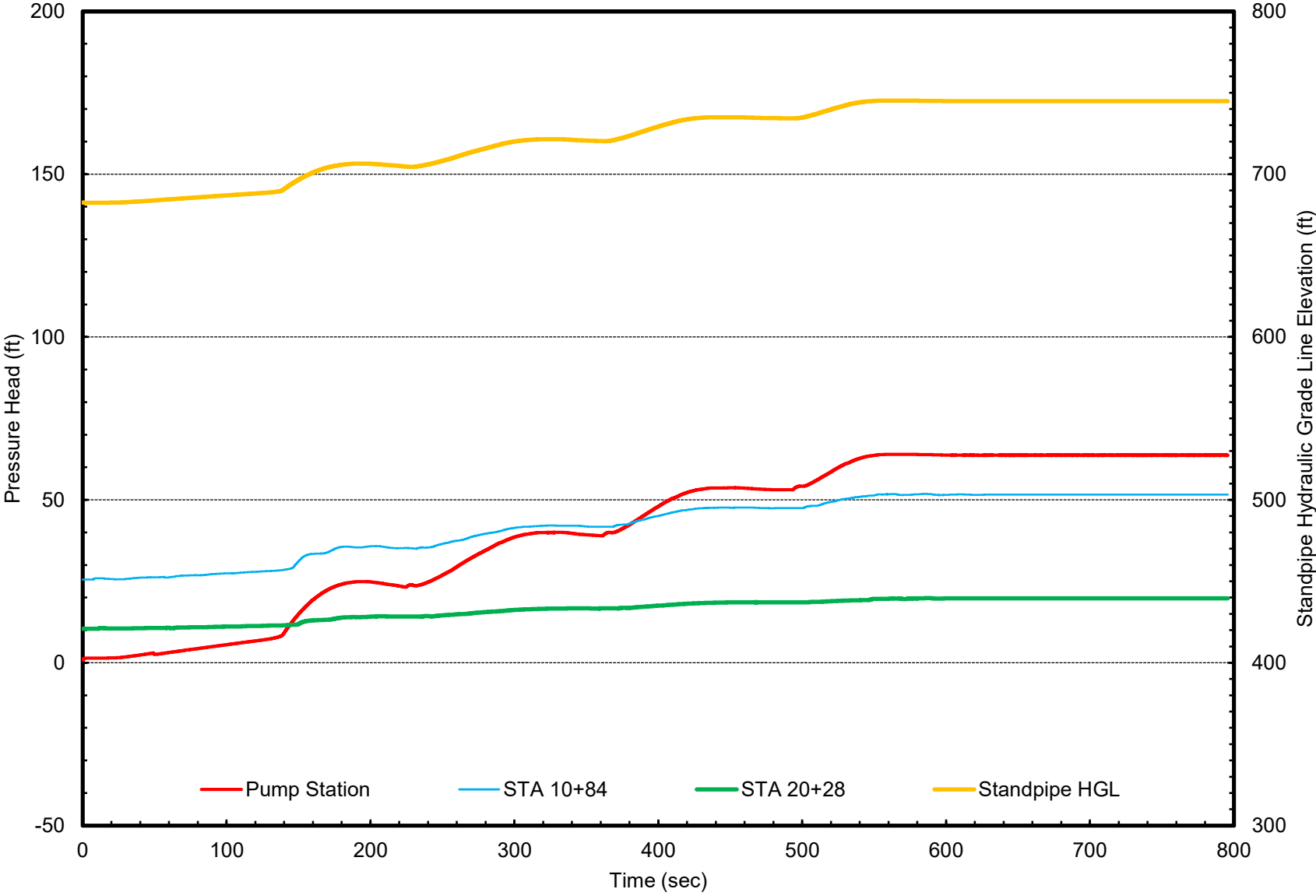


Figure 17: Pressure head and HGL records after start-up of pump station with high lake level and surge protection

5 CONCLUSIONS AND RECOMMENDATIONS

A pressure surge analysis has been completed for the Lake Cachuma Emergency Pump Station (LCEPS) and associated proposed pipeline. Northwest Hydraulic Consultants (NHC) constructed a hydraulic transient analysis model of the system and performed pump power failure and pump start-up simulations for the LCEPS at high and low lake levels. The results of the pressure surge analysis and recommendations for surge control are presented in this report.

Pump Power Failure

Based on the results of the pressure surge analysis described in this report, surge control is necessary to protect the proposed pipeline from adverse pressure transients created by a loss of power to the pumps at the LCEPS. To eliminate predicted vapor cavity formation and collapse, prevent combination air valve slam at the LCEPS, control negative pressures to acceptable limits, and minimize the introduction of air to the pipeline, surge control is recommended as follows:

- Install a 36-inch diameter DR17 (Class 125 psi) HDPE 4710 (31.51-inch ID) standpipe from the main pipeline just below the barge pump station to El. 770 ft on the adjacent embankment to the west. A preliminary alignment and elevation drawing for the standpipe was prepared by HDR and is shown in Appendix B (inside this report) with a few minor comments and edits added by NHC.
- Install a minimum 8-inch diameter lake water inlet swing check valve (e.g., APCO Series 6000, or equivalent) at STA 20+28 on the pipeline (see Figure 1 inside this report) in a manner such that lake water (if the lake level is high) or air (if the lake level is low) will enter the pipeline when the pressure on the inside of the pipeline drops below the pressure on the outside of the pipeline at this location. It is understood that the pipeline will be inclined upward from this location to the Intake Tower so any air that enters the pipeline will be vented from the pipeline at the Intake Tower. The valve could be installed in a screened vault to provide protection from debris.
- Convert the existing 8-inch diameter combination air valves at the barge pump station to controlled venting vacuum relief valves by installing a surge check feature (e.g., an 8-inch diameter APCO CSV-1600, or equivalent) on the inlet of the combination air valve. A photo of a controlled venting vacuum relief valve that utilizes a surge check feature is shown in Figure 7 inside this report. Regular maintenance should be performed on the valves to ensure that they are always in good working order.

With the recommended surge control installed negative pressure heads are controlled to a magnitude of 14 ft below the crown elevation of the pipeline following loss of power to the pumps with a low lake level. Negative pressure heads of this magnitude should not damage the pipeline, but a negative pressure head of 14 ft (6 psi) should be added to the loading on the HDPE pipeline and the pipe integrity should be checked by the pipeline design engineer.

Pump Start-up

Prior to pump start the double-disc check valve just above the fish screen through which the pump receives water will be closed and there will be static pressure in the pipeline and on both the suction and discharge sides of the pump. When a pump at the LCEPS is started, the pressure will increase rapidly and the pump will convey flow into the pipeline. Acceleration of the flow into the pipeline will create a traveling pressure upsurge wave that will propagate out from the pump station and into the pipeline toward the Intake Tower. Control of pressure surges that are created upon pump start-up is simply a matter of controlling the rate of fluid acceleration at the pump. Usually this is accomplished by adjusting the pump speed on the variable frequency drive (VFD).

It is recommended that each pump at the LCEPS be brought from idle (i.e., 0 rpm) to full operating speed (i.e., 1780 rpm) in 120 seconds or longer with at least a 120 second lag between each pump start. The pump ramp should be linear and the total start-up time sequence for six duty pumps should be at least 12 minutes. The pumps can be started in any order, but they should be started one at a time.

When there is sufficient water in the lake that the elevation of the barge pump station exceeds the base elevation of the Intake Tower the proposed controlled venting vacuum relief valves will allow air into the piping at the barge pump station when the pumps are idle and when they are operating, but not generating sufficient pressure at the pump station to fully pressurize the air valves. If the piping at the barge pump station contains air prior to pump start-up, one or more pumps should be ramped up to speed slowly to fully pressurize the air valves prior to starting additional pumps. Once the air valves are pressurized pumps can be started as recommended above.

6 APPENDIX A – MOVIES

The enclosed CDROM contains movies of HGL elevation animations for pump power failure and pump start-up at the Lake Cachuma Emergency Pump Station. The movie files can be viewed with Microsoft Corporation’s Windows Media Player© or other comparable software.

Table A1: Movie filenames and figure numbers

<i>Filename</i>	<i>Description</i>	<i>Figure #</i>
power-failure.avi	Pump power failure, low lake level, without surge protection	3
power-failure-wp.avi	Pump power failure, low lake level, with surge protection	8
start-up-wp.avi	Pump start-up, low lake level, with surge protection	14

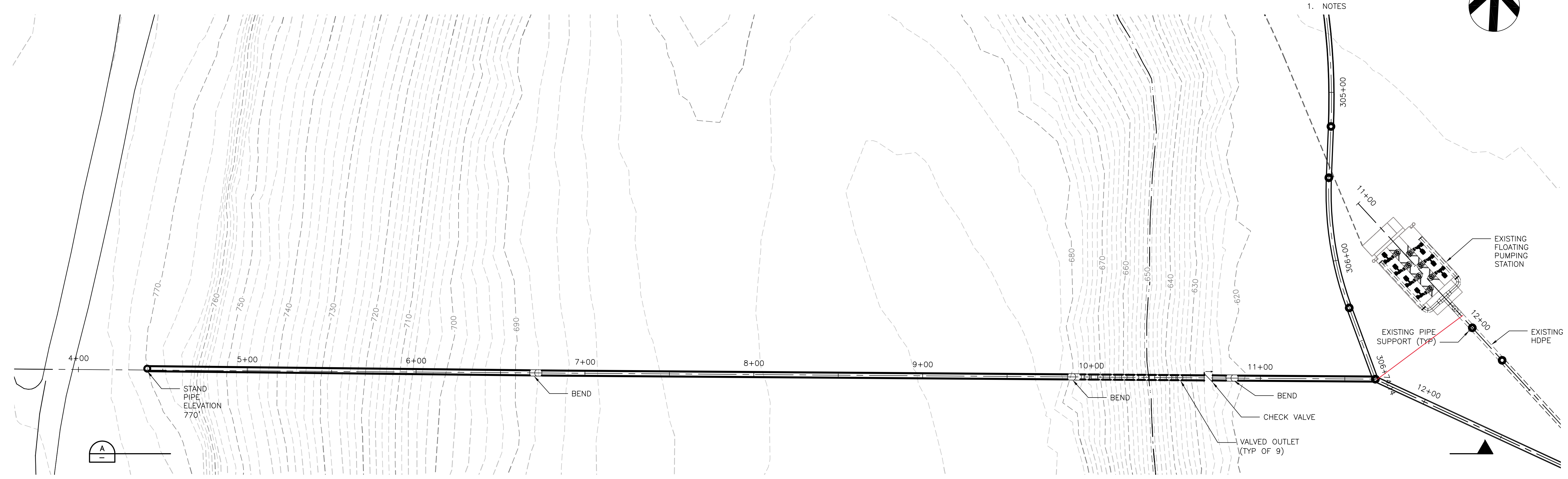
CDROM here

7 APPENDIX B – STANDPIPE ELEVATION PROFILE

Standpipe alignment and elevation drawing prepared by HDR.

DRAFT

LEGEND



PLAN
SCALE: 1"=30'



SECTION
SCALE: 1"=30'

**PRELIMINARY
NOT FOR CONSTRUCTION**

Feb. 02, 2017 - 11:52pm - C:\network\work\03\0211440\10050434-04-C-001.dwg

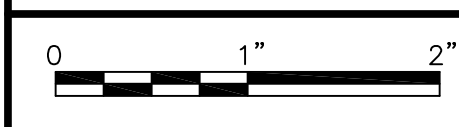


ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
CHECKED BY	
CHECKED BY	
DRAWN BY	DDD
DESIGNED BY	DDD
DESIGNED BY	
PROJECT NUMBER	10050434

**COMB EPF AND CCWA PIPELINES
CACHUMA OPERATION AND
MAINTENANCE BOARD**

**BARGE
PARTIAL PLAN AND SECTION**



DATE	January 30, 2017
SCALE	AS SHOWN

SHEET
C-28



Appendix C – Figures



Appendix D – Preliminary Drawings

CACHUMA OPERATION & MAINTENANCE BOARD

BOARD MEMORANDUM

Date:	March 27, 2017
Submitted by:	Tim Robinson
Approved by:	Janet Gingras

SUBJECT: Quiota Creek Crossing 0A Fish Passage Improvement Project – Storm Impact Restoration Work

SUMMARY:

A 55-foot prefabricated bottomless arched culvert was completed in December 2016 and replaced the pre-existing concrete low flow crossing at Quiota Creek Crossing 0A. The project removed a fish passage barrier and opened up unimpeded juvenile and adult fish passage for the endangered southern steelhead to NMFS designated critical habitat upstream. The bottomless arched culvert was designed to pass the 25-year flow event with no freeboard (space between the water surface elevation and bottom of the bridge) and no rise to the flood elevation for the 100-year event due to the project being within the Santa Ynez River floodway and the crossing being a ranch road. The project was successfully constructed by the project contractor, Peter Lapidus Construction (PLC), through a competitive bidding process.

Strong storm events in January and February 2017 resulted in two occasions with stream flow approaching the 25-year event (Figures 1 and 2). The structure conveyed all flows although with no freeboard in both occasions. The high flows caused some erosional damage particularly at the upper end of the project and deposited a large cobble bar under the bridge that has now decreased the flow conveyance of the culvert. Repairs are needed so that the stream does not jump out of the existing channel and flank the bottomless arched culvert.

The following repairs are needed to return the project back to design standards:

- Repair the rock vane and rock slope protection at the upper end of the project (Figure 3).
- Install toe of slope rock at two locations to prevent bank erosion (Figure 4).
- Remove depositional cobble bar upstream, below and downstream of the bottomless arched culvert (Figure 5).

The proposed repairs are estimated to cost between \$50,000 and \$100,000 depending on whether a dewatering system is needed during implementation of the restoration work. Funding for the repairs would be charged to the CDFW-FRGP grant for the project as approved by their grant coordinator. The grant currently has sufficient extra funding to cover the proposed fixes. The project would be conducted as a change order under the current contract with the project contractor, PLC.

FINANCIAL IMPACT:

The cost of the proposed repairs would be covered by the existing CDFW-FRGP grant.

ENVIRONMENTAL COMPLIANCE:

All permitting compliance measures have been and will be followed.

COMMITTEE STATUS:

The Fisheries Committee has reviewed the request to expend funding for the proposed repairs on Quiota Creek Crossing 0A and forwards to the Board with a recommendation to approve.

RECOMMENDATION:

Board authorize the General Manager to execute a change order with Peter Lapidus Construction for the proposed repairs on the Quiota Creek Crossing 0A Project in an amount not to exceed \$100,000.

LIST OF EXHIBITS:

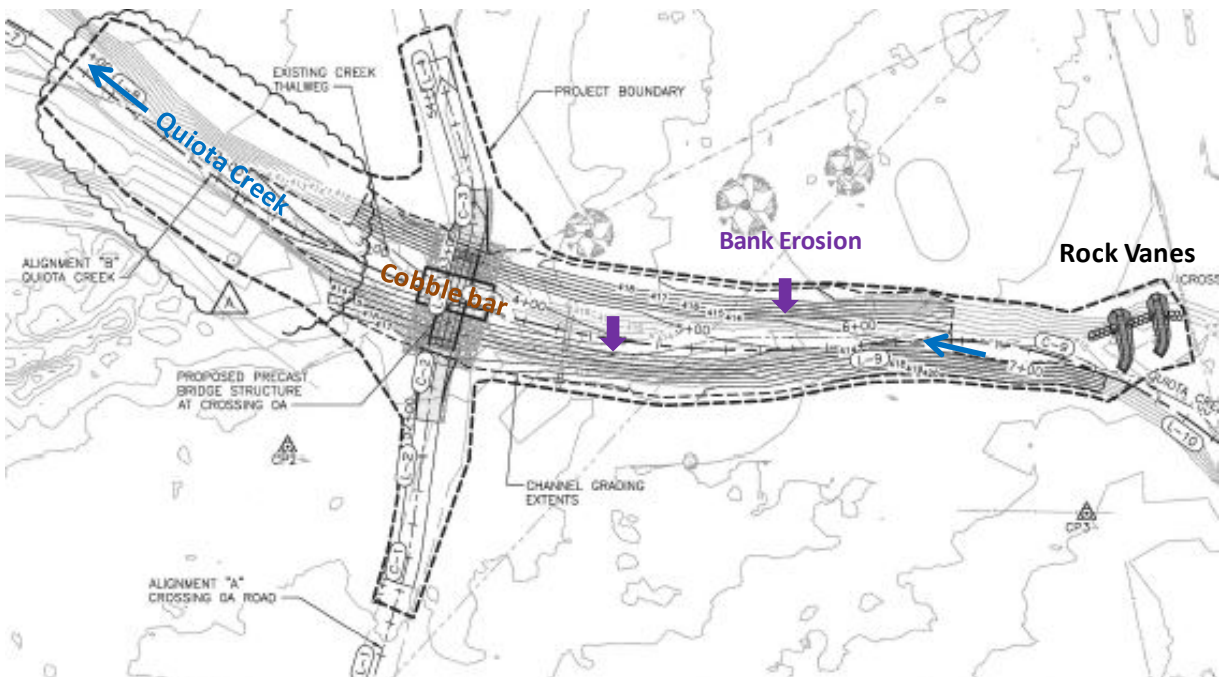


Figure 1: Project As-Builts showing features needing repair (rock vane, banks and cobble bar removal).



Figure 2: Post peak storm flow on 1/20/17.



Figure 3: Rock vane at the upper end of the project showing erosion to the installed bank projection rocks (2/28/17).



Figure 4: Right and left bank erosion upstream of the culvert (2/28/17).



Figure 5: The Quiota Creek Crossing 0A bridge with the (a) As-Built condition in December, 2016 and (b) the current condition in March, 2017 showing the change and specifically the deposited cobble bar.

CACHUMA OPERATION & MAINTENANCE BOARD

BOARD MEMORANDUM

Date:	March 27, 2017
Submitted by:	Tim Robinson
Approved by:	Janet Gingras

SUBJECT: Quiota Creek Crossing 8 Fish Passage Improvement Project – County of Santa Barbara Professional Services Agreement (PSA)

SUMMARY:

COMB has been working with the County of Santa Barbara on the implementation of the pending Quiota Creek Crossing 8 Fish Passage Improvement Project. The project has been fully funded by a State/Federal Highway Bridge Program (HBP) grant awarded to the County to replace the existing temporary bridge with a fully spanning bridge over the creek that will provide for complete fish passage and create a safe and reliable roadway. COMB has been working with a consultant, COM3 Consulting Inc. (COM3), to facilitate the process between COMB, the County and CalTrans who is the grant manager. COMB will act as the County's agent to manage the final design, permit process, right-of-way acquisition and construction of the project using the grant revenues. The relationship between the County and COMB is described in a fully executed Cooperative Agreement (8/22/16) between the two agencies and a pending Professional Services Agreement (PSA), a draft of which is provided as Exhibit 1.

A summary of project expenditures to date plus estimated construction match (COMB administration and construction management) and CalTrans grant funding is provided in Table 1 and details are provided in the Cooperative Agreement.

Table 1: Quiota Creek Crossing 8 expenditures to date plus estimated construction costs.

Expenditures	FY2014-15	FY2015-16	FY2016-17	Construction	
				Match	Grant
COM3 consultant fees (COMB)	\$4,080	\$9,690	\$24,200		
Estimated Cost Match for Admin/CM (COMB)				\$30,000	
Estimated Construction (Grant)					\$1,656,000
COMB Sub-Total (all):				\$67,970	
Construction Total:					\$1,686,000

Once the PSA has been signed by the County and COMB, both parties will collaborate on the hiring of a consultant to conduct final design, permitting, right-of-way acquisition and construction management, all of which is estimated and budgeted to cost \$405,000. It is estimated that a consultant would be placed into contract by April of 2017. The grant was authored such that COMB would be responsible to administer the consultant contract and cover the reimbursement costs up to \$320,000 and the County would cover up to \$85,000. These costs will be reimbursable through the secured grant but will need to be invoiced prior to reimbursements being processed. To accommodate the process of invoicing, paying the consultant and obtaining reimbursement from the grant, COMB will require a contract provision that provides for a 60-day payment period after invoicing. COM3 has indicated that the CalTrans reimbursement process for these grants has a 2-3 week turnaround time, which provides time for reimbursement prior to having to pay the pending consultant invoice. As stated in the Cooperative Agreement, COMB is obligated to a \$30,000 match for project construction administration and management which would be included in the COMB budget during the year

the project is constructed. It is estimated that the project will be constructed in the fall of 2017 or 2018 pending final approvals.

The County has new legal counsel who is currently conducting the final review of the draft PSA. No substantive changes are expected and we should receive it within 10 days at which point COMB General Counsel will reviewing it for the final time.

FINANCIAL IMPACT:

Funding for COMB's match (\$30,000) would be secured through the COMB Operating Budget during the year the project is constructed (Fiscal Year 2017-2018 or Fiscal Year 2018-19).

LEGAL STATUS:

COMB General Counsel has reviewed the PSA and will review the final agreement once received from the County's legal counsel.

COMMITTEE STATUS:

The Fisheries Committee has been regularly informed about the project and specifically reviewed the draft PSA on 1/17/17 and 3/24/17 and forwards to the Board with recommendation to approve contingent upon General Counsel final review.

RECOMMENDATION:

Authorize the General Manager to enter into the Professional Services Agreement (PSA) with the County of Santa Barbara for the Quiota Creek Crossing 8 Project contingent upon no substantive changes after County Counsel and COMB General Counsel final review.

LIST OF EXHIBITS:

1. Draft Professional Services Agreement between COMB and Santa Barbara County.

AGREEMENT FOR SERVICES

THIS AGREEMENT (hereafter Agreement) is made by and between the County of Santa Barbara, a political subdivision of the State of California (hereafter COUNTY) and Cachuma Operations and Maintenance Board with an address at 3301 Laurel Canyon Road, Santa Barbara, CA 93105 (hereafter COMB) wherein COMB agrees to provide and COUNTY agrees to accept the services specified herein.

WHEREAS, COMB and COUNTY have enter a Construction Cooperative Agreement dated July 12, 2016 attached hereto as Exhibit D and incorporated herein by reference, which defines the roles and responsibilities regarding the replacement of the Refugio Road Bridge Crossing of Quiota Creek (Crossing 8) which is , and:

WHEREAS, as defined in the Construction Cooperative Agreement between COUNTY and COMB, COUNTY will secure Federal funding through the Highway Bridge Program to pay for the Refugio Road Bridge Crossing of Quiota Creek (Crossing 8) and COMB and COMB contractors will provide Preliminary Engineering, Environmental, Right of Way, Utilities and Construction Administration Services the project which will be reimbursed by COUNTY with Highway Bridge Program funds, and;

WHEREAS, COMB and COMB's contractors represents that it is specially trained, skilled, experienced, and competent to perform the special services required by COUNTY and COUNTY desires to retain the services of COMB and COMB's contractors pursuant to the terms, covenants, and conditions herein set forth;

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties agree as follows:

1. DESIGNATED REPRESENTATIVE

Walter Rubalcava at phone number (805) 896-6468 is the representative of COUNTY and will administer this Agreement for and on behalf of COUNTY. Tim Robinson at phone number (805) 687-4011 ext. 215 is the authorized representative for COMB. Changes in designated representatives shall be made only after advance written notice to the other party. The designated representative may also be referred to herein as the "Contract Administrator".

2. NOTICES

Any notice or consent required or permitted to be given under this Agreement shall be given to the respective parties in writing, by personal delivery or email, or with postage prepaid by first class mail, registered or certified mail, or express courier service, as follows:

To COUNTY:	Walter Rubalcava, County of Santa Barbara, Transportation Division, 620 W. Foster Road, Santa Barbara CA, 93454 STATE, wrubalc@cosbpw.net
To COMB:	Tim Robinson, COMB, 3301 Laurel Canyon Road, Santa Barbara, CA 93105, trobinson@cachuma-board.org

or at such other address or to such other person that the parties may from time to time designate in accordance with this Notices section. If sent by first class mail, notices and consents under this section shall be deemed to be received five (5) days following their deposit in the U.S. mail. This Notices section shall not be construed as meaning that either party agrees to service of process except as required by applicable law.

3. SCOPE OF SERVICES

COMB agrees to provide services to COUNTY in accordance with EXHIBIT A attached hereto and incorporated herein by reference.

4. PERFORMANCE PERIOD

A. This contract shall go into effect on _____, contingent upon approval by COUNTY, and COMB shall commence work after notification to proceed by COUNTY'S Contract Administrator. The contract shall end on **June 30, 2020**, unless extended by contract amendment or unless earlier terminated.

B. COMB is advised that any recommendation for contract award is not binding on COUNTY until the contract is fully executed and approved by COUNTY.

5. COMPENSATION

In full consideration for COMB's services, COMB will be paid for performance under this Agreement in accordance with the terms of the Construction Cooperation Agreement (Exhibit D) and the PAYMENT ARRANGEMENTS shown in EXHIBIT B attached hereto and incorporated herein by reference.

6. FEDERAL AND STATE PREVAILING WAGE RATES

A. For any subcontract entered into as a result of this contract, COMB shall comply with the State of California's General Prevailing Wage Rate requirements in accordance with California Labor Code, Section 1770, and all Federal, State, and local laws and ordinances applicable to the work.

B. Any subcontract entered into as a result of this contract, if for more than \$25,000 for public works construction or more than \$15,000 for the alteration, demolition, repair, or maintenance of public works, shall contain all of the provisions of this Article.

C. When prevailing wages apply to the services described in the scope of work, transportation and subsistence costs shall be reimbursed at the minimum rates set by the Department of Industrial Relations (DIR) as outlined in the applicable Prevailing Wage Determination. See <http://www.dir.ca.gov>.

D. The State of California's General Prevailing Wage Rates are not applicable to this contract.

7. COST PRINCIPLES AND ADMINISTRATIVE REQUIREMENTS

A. COMB agrees that the Contract Cost Principles and Procedures, 48 CFR, Federal Acquisition Regulations System, Chapter 1, Part 31.000 et seq., shall be used to determine the allowable cost(s) of individual items.

B. COMB also agrees to comply with federal procedures in accordance with 2 CFR Part 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Super or Omni Circular)

C. Any costs for which payment has been made to COMB that are determined by subsequent audit to be unallowable under applicable Federal Regulations, are subject to repayment by COMB to COUNTY.

D. All subcontracts in excess of \$25,000 shall contain the above provisions.

8. INDEPENDENT ENTITY

It is mutually understood and agreed that COMB shall perform the scope of services as described in EXHIBIT A under this Agreement as an independent entity from COUNTY and will contract with specialized independent

contractors as necessary to complete the scope of services. Neither COMB or its contractors shall represent itself as an officer, agent, servant, employee, joint venturer, partner, or associate of COUNTY. Furthermore, COUNTY shall have no right to control, supervise, or direct the manner or method by which COMB and its contractors shall perform its work and function. However, COUNTY shall retain the right to administer this Agreement so as to verify that COMB and its contractors are performing its obligations in accordance with the terms and conditions hereof. COMB and its contractors understand and acknowledge that they shall not be entitled to any of the benefits of a COUNTY employee, including but not limited to vacation, sick leave, administrative leave, health insurance, disability insurance, retirement, unemployment insurance, workers' compensation and protection of tenure. COMB and its contractors shall be solely liable and responsible for providing to, or on behalf of, its employees all legally-required employee benefits. In addition, COMB and its contractors shall be solely responsible and save COUNTY harmless from all matters relating to payment of COMB and its contractors employees, including compliance with Social Security withholding and all other regulations governing such matters. It is acknowledged that during the term of this Agreement, COMB and its contractors may be providing services to others unrelated to the COUNTY or to this Agreement.

9. STANDARD OF PERFORMANCE

COMB and its contractors represent that they have the skills, expertise, and licenses/permits necessary to perform the services required under this Agreement. Accordingly, COMB and its contractors shall perform all such services in the manner and according to the standards observed by a competent practitioner of the same profession in which COMB's contractors are engaged. All products of whatsoever nature, which COMB and its contractors delivers to COUNTY pursuant to this Agreement, shall be prepared in a first class and workmanlike manner and shall conform to the standards of quality normally observed by a person practicing in COMB's contractors profession. COMB and its contractors shall correct or revise any errors or omissions, at COUNTY'S request without additional compensation. Permits and/or licenses shall be obtained and maintained by COMB and its contractors without additional compensation.

10. CONTRACTING

A. Nothing contained in this contract or otherwise, shall create any contractual relation between COUNTY and any of the contractors of COMB, and such contracts shall not relieve COMB of its responsibilities and obligations hereunder. COMB agrees to be as fully responsible to COUNTY for the acts and omissions of its contractors and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by COMB. COMB's obligation to pay its contractors is an independent obligation from COUNTY'S obligation to make payments to the COMB.

B. COMB and its contractors shall perform the work contemplated with resources available within their own organizations and no portion of the work pertinent to this contract shall be subcontracted without written authorization by COUNTY's Contract Administrator, except that, which is expressly identified in the approved Cost Proposal as referenced in EXHIBIT B attached hereto.

C. COMB shall pay its contractors within ten (10) calendar days from receipt of each payment made to COMB by COUNTY.

D. Any contract in excess of \$25,000 entered into as a result of this Agreement shall contain all the provisions stipulated in this Agreement to be applicable to COMB's contractors.

E. Any substitution of COMB's contractors must be approved in writing by COUNTY's Contract Administrator prior to the start of work by the new contractor.

11. DEBARMENT AND SUSPENSION

A. COMB's signature affixed herein shall constitute a certification under penalty of perjury under the laws of the State of California, that COMB shall only enter into agreements with contractor(s) for performance of all or part of the scope of services, that comply with Title 2 CFR, Part 180, "OMB Guidelines to Agencies on Government wide Debarment and Suspension (nonprocurement)", which certifies that he/she or any person associated therewith in the capacity of owner, partner, director, officer, or manager of said contractor, is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency; has not been suspended, debarred, voluntarily excluded, or determined ineligible by any federal agency within the past three (3) years; does not have a proposed debarment pending; and has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three (3) years. Any exceptions to this certification must be disclosed to COUNTY.

B. Exceptions will not necessarily result in denial of recommendation for award, but will be considered in determining COMB responsibility. Disclosures must indicate to whom exceptions apply, initiating agency, and dates of action.

C. Exceptions to the Federal Government Excluded Parties List System maintained by the General Services Administration are to be determined by the Federal Highway Administration.

D. COMB's signature affixed herein shall constitute a certification under penalty of perjury under the laws of the State of California, which certifies that COMB and its contractors or any person associated therewith in the capacity of owner, partner, director, officer, or manager, is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility for participation in any state or local government agency contracts. COMB certifies that it shall not contract with a contractor that is so debarred or suspended.

12. TAXES

COMB and its contractors shall pay all taxes, levies, duties, and assessments of every nature due in connection with any work under this Agreement and shall make any and all payroll deductions required by law. COUNTY shall not be responsible for paying any taxes on COMB's behalf, and should COUNTY be required to do so by state, federal, or local taxing agencies, COMB agrees to promptly reimburse COUNTY for the full value of such paid taxes plus interest and penalty, if any. These taxes shall include, but not be limited to, the following: FICA (Social Security), unemployment insurance contributions, income tax, disability insurance, and workers' compensation insurance.

13. CONFLICT OF INTEREST

A. COMB's contractors shall disclose in writing any financial, business, or other relationship with COUNTY that may have an impact upon the outcome of this contract, or any ensuing COUNTY construction project. COMB's contractors shall also list current clients who may have a financial interest in the outcome of this contract, or any ensuing COUNTY construction project, which will follow.

B. COMB hereby certifies that it does not now have, nor shall it acquire any financial or business interest that would conflict with the performance of services under this contract.

C. Any subcontract in excess of \$25,000 entered into as a result of this contract, shall contain all of the provisions of this Section.

D. For the Plans Specifications and Estimate related scope of services, COMB hereby certifies that neither COMB or its contractors or firms affiliated to its contractors will bid on any construction contract, or on any

contract to provide construction inspection for any construction project resulting from this contract. An affiliated firm is one, which is subject to the control of the same persons through joint-ownership, or otherwise.

E. Except for a contractor to COMB whose services are limited to providing surveying or materials testing information, no contractor of COMB who has provided design services in connection with this contract shall be eligible to bid on any construction contract, or on any contract to provide construction inspection for any construction project resulting from this contract.

D. For the construction administration related scope of services, COMB hereby certifies that neither COMB, its employees, or its contractors or firms affiliated to its contractors have prepared the Plans, Specifications, and Estimate for any construction project included within this contract. An affiliated firm is one, which is subject to the control of the same persons through joint- ownership, or otherwise.

E. For the construction administration related scope of services, COMB further certifies that neither COMB or its contractors or firms affiliated to its contractors, will bid on any construction subcontracts included within the construction contract. Additionally, COMB certifies that no person working under this contract is also employed by the construction contractor for any project included within this contract.

F. Except for the contractor or subcontractor to COMB whose services are limited to materials testing, no contractor or subcontractor to COMB who is providing construction administration related services on this contract shall have provided services on the design of any project included within this contract.

14. OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

COUNTY shall be the owner of the following items incidental to this Agreement upon production, whether or not completed: all data collected, all documents of any type whatsoever, all photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials, and any material necessary for the practical use of such items, from the time of collection and/or production whether or not performance under this Agreement is completed or terminated prior to completion. COMB shall not release any of such items to other parties except after prior written approval of COUNTY.

Unless otherwise specified in Exhibit A, COMB hereby assigns to COUNTY all copyright, patent, and other intellectual property and proprietary rights to all data, documents, reports, photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials prepared or provided by COMB pursuant to this Agreement (collectively referred to as "Copyrightable Works and Inventions"). COUNTY shall have the unrestricted authority to copy, adapt, perform, display, publish, disclose, distribute, create derivative works from, and otherwise use in whole or in part, any Copyrightable Works and Inventions. COMB agrees to take such actions and execute and deliver such documents as may be needed to validate, protect and confirm the rights and assignments provided hereunder. COMB warrants that any Copyrightable Works and Inventions and other items provided under this Agreement will not infringe upon any intellectual property or proprietary rights of any third party. COMB at its own expense shall defend, indemnify, and hold harmless COUNTY against any claim that any Copyrightable Works or Inventions or other items provided by COMB hereunder infringe upon intellectual or other proprietary rights of a third party, and COMB shall pay any damages, costs, settlement amounts, and fees (including attorneys' fees) that may be incurred by COUNTY in connection with any such claims. This Ownership of Documents and Intellectual Property provision shall survive expiration or termination of this Agreement.

15. NO PUBLICITY OR ENDORSEMENT

COMB and its contractors shall not use COUNTY's name or logo or any variation of such name or logo in any publicity, advertising or promotional materials. COMB and its contractors shall not use COUNTY's name or logo in any manner that would give the appearance that the COUNTY is endorsing COMB and its contractors. COMB shall not in any way contract on behalf of or in the name of COUNTY. COMB shall not release any informational

pamphlets, notices, press releases, research reports, or similar public notices concerning the COUNTY or its projects, without obtaining the prior written approval of COUNTY.

16. COUNTY PROPERTY AND INFORMATION

All of COUNTY's property, documents, and information provided for COMB's use in connection with the services shall remain COUNTY's property, and COMB shall return any such items whenever requested by COUNTY and whenever required according to the Termination section of this Agreement. COMB may use such items only in connection with providing the services. COMB shall not disseminate any COUNTY property, documents, or information without COUNTY's prior written consent.

17. RETENTION OF RECORDS/AUDIT

For the purpose of determining compliance with Public Contract Code 10115, et seq. and Title 21, California Code of Regulations, Chapter 21, Section 2500 et seq., when applicable and other matters connected with the performance of the contract pursuant to Government Code 8546.7; COMB, COMB contractors, and COUNTY shall maintain and make available for inspection all books, documents, papers, accounting records, and other evidence pertaining to the performance of the contract, including but not limited to, the costs of administering the contract. All parties shall make such materials available at their respective offices at all reasonable times during the contract period and for three years from the date of final payment under the contract. The state, State Auditor, COUNTY, FHWA, or any duly authorized representative of the Federal Government shall have access to any books, records, and documents of COMB and its certified public accountants (CPA) work papers that are pertinent to the contract and indirect cost rates (ICR) for audit, examinations, excerpts, and transactions, and copies thereof shall be furnished if requested. Subcontracts in excess of \$25,000 shall contain this provision.

If federal, state or COUNTY audit exceptions are made relating to this Agreement, COMB shall reimburse all costs incurred by federal, state, and/or COUNTY governments associated with defending against the audit exceptions or performing any audits or follow-up audits, including but not limited to: audit fees, court costs, attorneys' fees based upon a reasonable hourly amount for attorneys in the community, travel costs, penalty assessments and all other costs of whatever nature. Immediately upon notification from COUNTY, COMB shall reimburse the amount of the audit exceptions and any other related costs directly to COUNTY as specified by COUNTY in the notification.

18. AUDIT REVIEW PROCEDURES

A. Any dispute concerning a question of fact arising under an interim or post audit of this contract that is not disposed of by agreement, shall be reviewed by COUNTY'S Deputy Director - Finance and Administration for Public Works.

B. Not later than 30 days after issuance of the final audit report, COMB may request a review by COUNTY'S Chief Financial Officer of unresolved audit issues. The request for review will be submitted in writing.

C. Neither the pendency of a dispute nor its consideration by COUNTY will excuse COMB from full and timely performance, in accordance with the terms of this contract.

D. Any contracts entered into by COMB related to the project, including cost proposals and ICR, are subject to audits or reviews such as, but not limited to, a contract audit, an incurred cost audit, an ICR Audit, or a CPA ICR audit work paper review. If selected for audit or review, the contract, cost proposal and ICR and related work papers, if applicable, will be reviewed to verify compliance with 48 CFR, Part 31 and other related laws and regulations. In the instances of a CPA ICR audit work paper review it is COMB's responsibility to ensure federal, state, or local government officials are allowed full access to the CPA's work papers including making copies as necessary. The contract, cost proposal, and ICR shall be adjusted by COMB and approved by COUNTY contract manager to conform to the audit or review recommendations. COMB agrees that individual terms of costs identified

in the audit report shall be incorporated into the contract by this reference if directed by COUNTY at its sole discretion. Refusal by COMB to incorporate audit or review recommendations, or to ensure that the federal, state or local governments have access to CPA work papers, will be considered a breach of contract terms and cause for termination of the contract and disallowance of prior reimbursed costs.

19. INDEMNIFICATION AND INSURANCE

COMB agrees to the indemnification and insurance provisions as set forth in EXHIBIT C attached hereto and incorporated herein by reference.

20. NONDISCRIMINATION

A. COUNTY hereby notifies COMB that COUNTY's Unlawful Discrimination Ordinance (Article XIII of Chapter 2 of the Santa Barbara County Code) applies to this Agreement and is incorporated herein by this reference with the same force and effect as if the ordinance were specifically set out herein and COMB agrees to comply with said ordinance.

B. STATEMENT OF COMPLIANCE:

1. COMB's signature affixed herein, and dated, shall constitute a certification under penalty of perjury under the laws of the State of California that COMB has, unless exempt, complied with, the nondiscrimination program requirements of Government Code Section 12990 and Title 2, California Administrative Code, Section 8103.

2. During the performance of this Contract, COMB and its contractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (e.g., cancer), age (over 40), marital status, and denial of family care leave. COMB and its contractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. COMB and its contractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12990 (a-f) et seq.) and the applicable regulations promulgated there under (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Contract by reference and made a part hereof as if set forth in full. COMB and its contractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other Agreement.

3. COMB shall comply with regulations relative to Title VI (nondiscrimination in federally-assisted programs of the Department of Transportation – Title 49 Code of Federal Regulations, Part 21 - Effectuation of Title VI of the 1964 Civil Rights Act). Title VI provides that the recipients of federal assistance will implement and maintain a policy of nondiscrimination in which no person in the state of California shall, on the basis of race, color, national origin, religion, sex, age, disability, be excluded from participation in, denied the benefits of or subject to discrimination under any program or activity by the recipients of federal assistance or their assignees and successors in interest.

4. COMB, with regard to the work performed by it during the Agreement shall act in accordance with Title VI. Specifically, COMB shall not discriminate on the basis of race, color, national origin, religion, sex, age, or disability in the selection and retention of its contractors, including procurement of materials and leases of equipment. COMB shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the U.S. DOT's Regulations, including employment practices when the Agreement covers a program whose goal is employment.

21. REBATES, KICKBACKS OR OTHER UNLAWFUL CONSIDERATION

COMB warrants that this contract was not obtained or secured through rebates, kickbacks or other unlawful consideration, either promised or paid to any COUNTY employee. For breach or violation of this warranty, COUNTY shall have the right in its discretion; to terminate the contract without liability; to pay only for the value of the work actually performed; or to deduct from the contract price; or otherwise recover the full amount of such rebate, kickback or other unlawful consideration.

22. PROHIBITION OF EXPENDING COUNTY, STATE OR FEDERAL FUNDS FOR LOBBYING

A. COMB certifies to the best of his or her knowledge and belief that:

1. No state, federal or COUNTY appropriated funds have been paid, or will be paid by-or-on behalf of COMB to any person for influencing or attempting to influence an officer or employee of any state or federal agency; a Member of the State Legislature or United States Congress; an officer or employee of the Legislature or Congress; or any employee of a Member of the Legislature or Congress, in connection with the awarding of any state or federal contract; the making of any state or federal grant; the making of any state or federal loan; the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any state or federal contract, grant, loan, or cooperative agreement.

2. If any funds other than federal appropriated funds have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency; a Member of Congress; an officer or employee of Congress, or an employee of a Member of Congress; in connection with this federal contract, grant, loan, or cooperative agreement; COMB shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying", in accordance with its instructions.

B. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

C. COMB also agrees by signing this document that he or she shall require that the language of this certification be included in all contracts which exceed \$100,000, and that all such contract recipients shall certify and disclose accordingly.

23. CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT.

COMB shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q.) and pursuant to the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). COMB shall promptly disclose, in writing, to the COUNTY office, to the Federal Awarding Agency, and to the Regional Office of the Environmental Protection Agency (EPA), whenever, in connection with the award, performance, or closeout of this contract or any subcontract thereunder, COMB has credible evidence that a principal, employee, agent, or contractor to COMB has committed a violation of the Clean Air Act (42 U.S.C. 7401-7671q.) or the Federal Water Pollution Control Act (33 U.S.C. 1251-1387).

24. PROCUREMENT OF RECOVERED MATERIALS

COMB must comply with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase

price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

25. NON-ASSIGNMENT

COMB shall not assign, transfer or subcontract this Agreement or any of its rights or obligations under this Agreement without the prior written consent of COUNTY and any attempt to so assign, subcontract or transfer without such consent shall be void and without legal effect and shall constitute grounds for termination.

26. TERMINATION

A. COUNTY reserves the right to terminate this contract for convenience upon thirty (30) calendar days written notice to COMB with the reasons for termination stated in the notice. During the thirty (30) day period, COMB shall, as directed by COUNTY, wind down and cease its services as quickly and efficiently as reasonably possible, without performing unnecessary services or activities and by minimizing negative effects on COUNTY from such winding down and cessation of services.

B. COUNTY may terminate this contract with COMB should COMB fail to perform the covenants herein contained at the time and in the manner herein provided. In the event of such termination, COUNTY may proceed with the work in any manner deemed proper by COUNTY. If COUNTY terminates this contract with COMB, COUNTY shall pay COMB the sum due to COMB under this contract prior to termination, unless the cost of completion to COUNTY exceeds the funds remaining in the contract. In which case the overage shall be deducted from any sum due COMB under this contract and the balance, if any, shall be paid to COMB upon demand.

C. Should COUNTY fail to pay COMB all or any part of the payment set forth in EXHIBIT B, COMB may, at COMB's option, terminate this Agreement if such failure is not remedied by COUNTY within thirty (30) days of written notice to COUNTY of such late payment.

D. The maximum amount for which the COUNTY shall be liable if this contract is terminated is Zero Dollars \$0 dollars.

E. Upon termination, COMB shall deliver to COUNTY all data, estimates, graphs, summaries, reports, and all other property, records, documents or papers as may have been accumulated or produced by COMB in performing this Agreement, whether completed or in process, except such items as COUNTY may, by written permission, permit COMB to retain. COMB shall furnish to COUNTY such financial information as in the judgment of COUNTY is necessary to determine the reasonable value of the services rendered by COMB. In the event of a dispute as to the reasonable value of the services rendered by COMB, the decision of COUNTY shall be final. The foregoing is cumulative and shall not affect any right or remedy which COUNTY may have in law or equity.

27. SECTION HEADINGS

The headings of the several sections, and any Table of Contents appended hereto, shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof.

28. SEVERABILITY

If any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

29. REMEDIES NOT EXCLUSIVE

No remedy herein conferred upon or reserved to COUNTY is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.

30. TIME IS OF THE ESSENCE

Time is of the essence in this Agreement and each covenant and term is a condition herein.

31. NO WAIVER OF DEFAULT

No delay or omission of COUNTY to exercise any right or power arising upon the occurrence of any event of default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein; and every power and remedy given by this Agreement to COUNTY shall be exercised from time to time and as often as may be deemed expedient in the sole discretion of COUNTY.

32. ENTIRE AGREEMENT AND AMENDMENT

In conjunction with the matters considered herein, this Agreement contains the entire understanding and agreement of the parties and there have been no promises, representations, agreements, warranties or undertakings by any of the parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the parties to this Agreement and by no other means. Each party waives their future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by any oral agreements, course of conduct, waiver or estoppel.

33. SUCCESSORS AND ASSIGNS

All representations, covenants and warranties set forth in this Agreement, by or on behalf of, or for the benefit of any or all of the parties hereto, shall be binding upon and inure to the benefit of such party, its successors and assigns.

34. COMPLIANCE WITH LAW

COMB shall, at its sole cost and expense, comply with all County, State and Federal ordinances and statutes now in force or which may hereafter be in force with regard to this Agreement. The judgment of any court of competent jurisdiction, or the admission of COMB in any action or proceeding against COMB, whether COUNTY is a party thereto or not, that COMB has violated any such ordinance or statute, shall be conclusive of that fact as between COMB and COUNTY.

35. CALIFORNIA LAW AND JURISDICTION

This Agreement shall be governed by the laws of the State of California. Any litigation regarding this Agreement or its contents shall be filed in the County of Santa Barbara, if in state court, or in the federal district court nearest to Santa Barbara County, if in federal court.

36. EXECUTION OF COUNTERPARTS

This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the parties shall preserve undestroyed, shall together constitute one and the same instrument.

37. AUTHORITY

All signatories and parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement in the names, titles and capacities herein stated and on behalf of any entities, persons, or firms represented or purported to be represented by such entity (ies), person(s), or firm(s) and that all formal requirements necessary or required by any state and/or federal law in order to enter into this Agreement have been fully complied with. Furthermore, by entering into this Agreement, COMB hereby warrants that it shall not have breached the terms or conditions of any other contract or agreement to which COMB is obligated, which breach would have a material effect hereon.

38. SURVIVAL

All provisions of this Agreement which by their nature are intended to survive the termination or expiration of this Agreement shall survive such termination or expiration.

39. PRECEDENCE

In the event of conflict between the provisions contained in the numbered sections of this Agreement and the provisions contained in the Exhibits, the provisions of the Exhibits shall prevail over those in the numbered sections.

//
//

Agreement for Services of Independent COMB between the **County of Santa Barbara** and **COMB**

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective on the date executed by COUNTY.

APPROVAL:

Public Works Department

COMB

By: _____
Director of Public Works

By: _____
Authorized Representative

Name: _____
Title:

APPROVED AS TO FORM:

William W. Carter
COMB General Counsel

By: _____
COMB General Counsel

APPROVED AS TO FORM:

Michael C. Ghizzoni
County Counsel

APPROVED AS TO ACCOUNTING FORM:

Theodore A. Fallati, CPA
Auditor-Controller

By: _____
Deputy County Counsel

By: _____
Deputy

APPROVED AS TO FORM:

Risk Management

By: _____
Risk Management

EXHIBIT A

STATEMENT OF WORK

Statement of Work shall be consistent with the Scope of Work, dated November 30, 2016, which is attached hereto as "Exhibit A" and incorporated herein by reference.

//

SCOPE OF WORK

November 30, 2016

Quiota Creek Crossing 8 Bridge Replacement Project

Background

The Cachuma Operation and Maintenance Board (COMB) in coordination with the County of Santa Barbara, wishes to deliver a bridge replacement project on Refugio Road at Quiota Creek Crossing 8. The project is eligible to be funded through the Federal Highway Bridge Program (HBP). Below is a detailed scope of services to be performed by COMB Staff its Consultants.

All services including, Management, Consultant Selection Process, Preliminary Engineering, Permitting, Right of Way, Construction Services will be performed in a manner consistent with federal regulations and the Caltrans Local Assistance Procedures Manual or appropriate Caltrans manuals and guidelines.

COMB anticipates securing consultant services for Preliminary Engineering, Permitting, Right of Way, Construction Services.

A. Management

1. Develop and maintain Project Budget by Project Phase.
2. Develop and maintain Project Schedule.
3. Coordination with SB County Public Works.
4. Coordination with Caltrans District 5 Local Assistance.
5. Preparation of HBP Funding Requests for each project phase (Requests for Authorization) for County approval and submittal to Caltrans.
6. Schedule and lead bi-weekly or monthly Project Development Team (PDT) Meetings with County, Consultants, Caltrans (as required) and others as required. Prepare meeting notes and Action Items.
7. Manage Consultants Contracts.

B. Consultant Selection Process

Design, Right of Way and Permitting services:

8. Assemble a Consultant Selection Review Committee consisting of COMB and County
9. Prepare Request for Qualifications/Proposals for Consultant Services and secure review comments from County.
10. Prepare Consultant Services Estimate prior to releasing RFP/Q
11. Release RFQ/P.
12. Manage reviews of Statements of Qualifications/Proposals (SOQ/P) and Chair Selection Committee for identification and ranking of top three teams.
13. Negotiate scope and cost with top ranked Consultant Team.
14. Ensure all Federal requirements and provisions are included in Consultant Team contract(s).

Construction Management Services:

15. Assemble a Consultant Selection Review Committee consisting of COMB and County.
16. Prepare Request for Proposals for Consultant Services and secure review comments from County.
17. Release RFP.
18. Manage reviews of Proposals and Chair Selection Committee for identification and ranking of top three teams.
19. Negotiate scope and cost with top ranked Consultant Team.

SCOPE OF WORK

November 30, 2016

Quiota Creek Crossing 8 Bridge Replacement Project

20. Ensure all Federal requirements and provisions are included in Consultant Team contract.

C. Preliminary Engineering (PE) Services - Environmental

21. Schedule Field Review Meeting with Caltrans and County.
22. Prepare Draft Preliminary Environment Study (PES) Form and Field Review Form.
23. Attend Field Review Meeting with Caltrans, COMB and County.
24. Work with Caltrans and County to define scope of Environmental Review required based on Field Review Meeting.
25. Prepare necessary Special Studies and secure approval from Caltrans.
26. Prepare CEQA and NEPA Environmental Documents.
27. Oversee Environmental work performed by Consultant Team.
28. Coordinate with Caltrans and County regarding environmental review and approvals.
29. Secure CEQA and NEPA approvals.

D. Preliminary Engineering (PE) Services – Permitting

30. Interface with Resource Agencies to review project and permits needs. Set up field review meeting with Resource Agencies as necessary.
31. Prepare Permit Applications.
32. Interaction with Resource Agencies to respond to comments on permit applications.
33. Secure all Permits necessary for Project.

E. Preliminary Engineering (PE) Services - Design

34. Coordination with Caltrans for review and approval of design deliverables.
35. Prepare Structure Type Selection Report and secure approval from Caltrans.
36. Prepare Hydraulics and Hydrology Study and secure approval by Caltrans.
37. Prepare Drainage Report and secure approval from Caltrans.
38. Prepare Flood Plain Encroachment Study and secure approval from Caltrans.
39. Prepare 65% Plans and secure Caltrans review comments.
40. Prepare 100% Plans Specifications and Estimate (PS&E) and secure Caltrans review comments.
41. Prepare Final PS&E for County to incorporate in Bid Package.

F. Right of Way Services

42. Interface with property owners and define right of way needs.
43. Prepare appraisal maps as needed.
44. Prepare Right of way Appraisals as required.
45. Acquire required Right Of Way.
46. Prepare Right of Way Certification documentation.

G. Construction

47. Support County is Project bidding and responses to Contractor RFI's.
48. Provide construction management, inspection and design support during construction services.
49. Prepare As-Built Plans.
50. Prepare Project Close Out Report.

EXHIBIT B

PAYMENT ARRANGEMENTS

Payment arrangement only applies to work that is performed by COMB and COMB's contractor that is eligible and reimbursed through HBP program. Non-eligible HBP work will not be reimbursed by COUNTY. Per Section I, item 4, of Construction Cooperation Agreement, COMB agrees to reimburse COUNTY for any cost incurred by COUNTY that is not reimbursed through HBP.

COUNTY shall reimburse COMB for work performed by COMB's contractors. COMB shall enter into agreements with its contractors and the following Payment Arrangements provisions shall be included in these agreements:

- A. The method of payment for this contract will be based on actual cost plus a fixed fee. COMB will reimburse CONTRACTOR for actual costs (including labor costs, employee benefits, travel, equipment rental costs, overhead and other direct costs) incurred by CONTRACTOR in performance of the work. CONTRACTOR will not be reimbursed for actual costs that exceed the estimated wage rates, employee benefits, travel, equipment rental, overhead, and other estimated costs set forth in the approved CONTRACTOR'S Cost Proposal, unless additional reimbursement is provided for by contract amendment. In no event, will CONTRACTOR be reimbursed for overhead costs at a rate that exceeds COMB's approved overhead rate set forth in the Cost Proposal. In the event, that COMB determines that a change to the work from that specified in the Cost Proposal and contract is required, the contract time or actual costs reimbursable by COUNTY shall be adjusted by contract amendment to accommodate the changed work. The maximum total cost as specified in Paragraph "H" shall not be exceeded, unless authorized by contract amendment.
- B. In addition to the allowable incurred costs, COMB will pay CONTRACTOR a fixed fee of \$ {AMOUNT}. The fixed fee is nonadjustable for the term of the contract, except in the event of a significant change in the scope of work and such adjustment is made by contract amendment.
- C. Reimbursement for transportation and subsistence costs shall not exceed the rates specified in the approved Cost Proposal.
- D. When milestone cost estimates are included in the approved Cost Proposal, CONTRACTOR shall obtain prior written approval for a revised milestone cost estimate from the Contract Administrator before exceeding such cost estimate.
- E. Progress payments will be made monthly in arrears based on services provided and allowable incurred costs. A pro rata portion of CONTRACTOR's fixed fee will be included in the monthly progress payments. If CONTRACTOR fails to submit the required deliverable items according to the schedule set forth in the Statement of Work, COUNTY shall have the right to delay payment or terminate this Contract in accordance with the provisions of Section 28 Termination.
- F. No payment will be made prior to approval of any work, nor for any work performed prior to approval of this contract.
- G. CONTRACTOR will be reimbursed, as promptly as fiscal procedures will permit upon receipt by COMB's Contract Administrator of itemized invoices. Invoices shall be submitted no later than 45 calendar days after the performance of work for which CONTRACTOR is billing. Invoices shall detail the work performed on each milestone and each project as applicable. Invoices shall follow the format stipulated for the approved Cost Proposal and shall reference this contract number and project title. The final invoice should be submitted within 60 calendar days after completion of CONTRACTOR's work. Invoices shall be mailed to COMB's Contract Administrator at the following address:

Tim Robinson, COMB, 3301 Laurel Canyon Road
Santa Barbara, CA 93105
trobenson@cachuma-board.org

- H. The total amount payable by COMB including the fixed fee shall not exceed \$ {ENTER AMOUNT}.
- I. Salary increases will be reimbursable if the new salary is within the salary range identified in the approved Cost Proposal and is approved by COMB's Contract Administrator.

For personnel subject to prevailing wage rates as described in the California Labor Code, all salary increases, which are the direct result of changes in the prevailing wage rates are reimbursable.

- J. All subcontracts shall contain the above provisions.

EXHIBIT C

MUTUAL INDEMNIFICATION AND INSURANCE Mutual Indemnification and Insurance

Mutual Indemnification and Insurance between COUNTY and COMB shall be consistent with the language provided in the attached Construction Cooperation Agreement, dated July 12, 2016, which is attached as Exhibit D.

COMB is required to include the following indemnification and insurance provisions in all agreements with contractors:

INDEMNIFICATION

CONTRACTOR agrees to indemnify, defend and hold harmless COUNTY and its officers, officials, employees, agents and volunteers from and against any and all claims, actions, losses, damages, costs, expenses (including but not limited to attorneys' fees), judgments and/or liabilities that arise out of, or pertain to, or relate to the negligence, recklessness, or willful misconduct of the CONTRACTOR and its employees, subcontractors, or agents in the performance of services under this Agreement, but this indemnity does not apply to liability for damages arising from the sole negligence, active negligence, or willful acts of the COUNTY.

NOTIFICATION OF ACCIDENTS AND SURVIVAL OF INDEMNIFICATION PROVISIONS

CONTRACTOR shall notify COUNTY immediately in the event of any accident or injury arising out of or in connection with this Agreement. The indemnification provisions in this Agreement shall survive any expiration or termination of this Agreement.

INSURANCE

CONTRACTOR shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONTRACTOR, his agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate.
2. **Automobile Liability:** ISO Form Number CA 00 01 covering any auto (Code 1), or if CONTRACTOR has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than \$1,000,000 per accident for bodily injury and property damage.
3. **Workers' Compensation:** as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.

4. **Professional Liability** (Errors and Omissions) Insurance appropriate to the CONTRACTOR'S profession, with limit of no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

If the CONTRACTOR maintains higher limits than the minimums shown above, the COUNTY requires and shall be entitled to coverage for the higher limits maintained by the CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the COUNTY.

B. Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

1. **Additional Insured** – COUNTY, its officers, officials, employees, agents and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the CONTRACTOR including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the CONTRACTOR's insurance at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 if a later edition is used).
2. **Primary Coverage** – For any claims related to this Agreement, the CONTRACTOR's insurance coverage shall be primary insurance as respects the COUNTY, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the COUNTY, its officers, officials, employees, agents or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.
3. **Notice of Cancellation** – Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the COUNTY.
4. **Waiver of Subrogation Rights** – CONTRACTOR hereby grants to COUNTY a waiver of any right to subrogation which any insurer of said CONTRACTOR may acquire against the COUNTY by virtue of the payment of any loss under such insurance. CONTRACTOR agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the COUNTY has received a waiver of subrogation endorsement from the insurer.
5. **Deductibles and Self-Insured Retention** – Any deductibles or self-insured retentions must be declared to and approved by the COUNTY. The COUNTY may require the CONTRACTOR to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.
6. **Acceptability of Insurers** – Unless otherwise approved by Risk Management, insurance shall be written by insurers authorized to do business in the State of California and with a minimum A.M. Best's Insurance Guide rating of "A- VII".
7. **Verification of Coverage** – CONTRACTOR shall furnish the COUNTY with proof of insurance, original certificates and amendatory endorsements as required by this Agreement. The proof of insurance, certificates and endorsements are to be received and approved by the COUNTY before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CONTRACTOR shall furnish evidence of renewal of coverage throughout the term of the Agreement. The COUNTY reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

8. **Failure to Procure Coverage** – In the event that any policy of insurance required under this Agreement does not comply with the requirements, is not procured, or is canceled and not replaced, COUNTY has the right but not the obligation or duty to terminate the Agreement. Maintenance of required insurance coverage is a material element of the Agreement and failure to maintain or renew such coverage or to provide evidence of renewal may be treated by COUNTY as a material breach of contract.
9. **Subcontractors** – CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and CONTRACTOR shall ensure that COUNTY is an additional insured on insurance required from subcontractors.
10. **Claims Made Policies** – If any of the required policies provide coverage on a claims-made basis:
 - i. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
 - ii. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
 - iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the CONTRACTOR must purchase “extended reporting” coverage for a minimum of five (5) years after completion of contract work.
11. **Special Risks or Circumstances** – COUNTY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Any change requiring additional types of insurance coverage or higher coverage limits must be made by amendment to this Agreement. CONTRACTOR agrees to execute any such amendment within thirty (30) days of receipt.

Any failure, actual or alleged, on the part of COUNTY to monitor or enforce compliance with any of the insurance and indemnification requirements will not be deemed as a waiver of any rights on the part of COUNTY.

EXHIBIT D

Cooperative Agreement between COUNTY and COMB

CONSTRUCTION COOPERATIVE AGREEMENT

This Agreement is entered into between the County of Santa Barbara (“COUNTY”), a political subdivision of the State of California, and the Cachuma Operations and Maintenance Board (“COMB”), a Joint Powers Authority, collectively referred to herein as “PARTIES”.

RECITALS

1. WHEREAS, the PARTIES are authorized to enter into this cooperative agreement to complete improvements to Refugio Road where it crosses Quiota Creek at Crossing 8, approximately 4 miles south of the City of Santa Ynez and State Highway 246 in unincorporated Santa Barbara County.
2. WHEREAS, Refugio Road is a COUNTY road for which the COUNTY maintains the roadway, guardrails, road shoulders, culverts, and bridges including bridge rails and signage.
3. WHEREAS, Refugio Road at Crossing 8 is an aging, substandard, temporary bridge (State Bridge No. 51C0377) that is owned and maintained by the COUNTY.
4. WHEREAS, the Highway Bridge Program (“HBP”) is a federally funded program administered through the Federal Highway Administration (“FHWA”) and California Department of Transportation (“CALTRANS”) that enables local agencies to maintain their highway bridges through replacement, rehabilitation and preventive maintenance.
5. WHEREAS, a recent inspection by CALTRANS rated Quiota Creek Crossing 8 as *Structurally Deficient* and therefore eligible for replacement funding through the HBP.
6. WHEREAS, COUNTY has previously entered into a Master Agreement with CALTRANS which defines the general terms and conditions which must be met for the COUNTY to receive federal-aid funds for Federal-Aid Highway Programs such as the HBP.
7. WHEREAS, COMB, in cooperation with the Bureau of Reclamation, operates Lake Cachuma and its water delivery system to the communities of southern Santa Barbara County and conducts all required compliance measures for that water supply project. This includes providing fish passage for the endangered southern steelhead within tributary creeks downstream of Lake Cachuma (Bradbury Dam) in the Santa Ynez river watershed, such as Quiota Creek which has been designated as critical habitat by the National Marine Fisheries Service (NMFS).

8. WHEREAS, COMB is required to improve fish passage along Quiota Creek, including at crossing 8, as a condition of COMB's permit to operate Lake Cachuma and its water delivery system.
9. WHEREAS, COMB is willing to deliver, at no cost to COUNTY and pursuant to an Agreement for Services of Independent Contractor, the Quiota Creek Crossing 8 Bridge Replacement Project, described and identified in Exhibit "A" (PROJECT Scope and Anticipated Schedule) and hereinafter referred to as "PROJECT".
10. WHEREAS, at no cost to COMB, COUNTY is willing to apply for HBP funds to complete the PROJECT and provide COMB with guidance on how to satisfy federal and state requirements associated with using HBP funds to complete the PROJECT.

NOW THEREFORE, the PARTIES hereby agree as follows:

I. COMB OBLIGATIONS AND DUTIES

COMB AGREES:

1. To enter into an Agreement for Services of Independent Contractor with COUNTY to define the responsibilities and requirements for the delivery of Preliminary Engineering, Environmental, Right of Way, Utility and Construction Administration services for PROJECT.
2. At no cost to COUNTY:
 - a) As an independent contractor, to provide Preliminary Engineering, Environmental, Right of Way, Utility and Construction Administration Services, including all contracting out services, for the PROJECT in accordance with the Agreement for Services of Independent Contractor and applicable federal and state regulations, laws, guidelines and standards;
 - b) To acquire in the name of the COUNTY any permits necessary to complete the PROJECT; and
 - c) To identify and to provide a legal depiction (drawing showing the Right of Way line work and acquisition areas) of any Right of Way necessary to complete the PROJECT and to acquire in the name of the COUNTY any Right of Way necessary to complete the PROJECT.
3. For the purposes of reimbursement from CALTRANS, to provide invoices and necessary financial backup to COUNTY for Preliminary Engineering, Environment, Right of Way, Utility and Construction Administration phases of PROJECT.

4. As consideration for the benefits COMB will receive from this Agreement, to reimburse COUNTY for any costs incurred by COUNTY that are not reimbursable through HBP.

II. COUNTY OBLIGATIONS AND DUTIES

COUNTY AGREES:

1. To serve as Responsible Agency for PROJECT for purposes of the California Environmental Quality Act ("CEQA") and National Environmental Policy Act (NEPA), and to apply for HBP funding for delivery of PROJECT through the Preliminary Engineering, Environmental, Right of Way, Utility and Construction phases as defined by the HBP. As Responsible Agency, COUNTY acknowledges that it is ultimately responsible for delivery of PROJECT in the eyes of Caltrans and the Federal Highway Administration (FHWA).
2. Subject to approval by the COUNTY, to enter into an Agreement for Services of Independent Contractor with COMB to define the responsibilities and requirements for the delivery of Preliminary Engineering, Environmental, Right of Way, Utility and Construction Administration services for PROJECT.
3. At no cost to COMB,
 - a) To review all products prepared by COMB toward delivery of PROJECT prior to submittal to CALTRANS;
 - b) To provide legal access to COUNTY Right of Way for Preliminary Engineering, Environmental, Right of Way, Utility and Construction phases;
 - c) To provide oversight of COMB Construction Administration, during the Construction Phase;
 - d) To participate in PROJECT meetings when appropriate;
 - e) To prepare and submit to CALTRANS reimbursement claims for any work eligible for HBP funds;
 - f) To provide guidance on how to satisfy federal and state requirements associated with using HBP funds to complete the PROJECT;
 - g) To bid PROJECT for construction and to award a construction contract and serve as administering agency for construction; and
 - h) To request the COUNTY Board of Supervisors to execute any Purchase Contracts or approve any Deeds necessary to acquire Right of Way.

4. To invoice COMB for any costs incurred by COUNTY that are not reimbursable through HBP.

III. GENERAL CONDITIONS

1. This Agreement changes neither ownership of nor any responsibilities that PARTIES currently have for either the existing bridge (State Bridge No. 51C0377) or associated facilities outside the scope of the PROJECT. COUNTY will own the bridge and any associated facilities constructed by PROJECT, and the PARTIES' respective responsibilities for the bridge and any associated facilities constructed by the PROJECT will be identical to the PARTIES' respective responsibilities for the existing bridge and its associated facilities.
2. COMB will retain records pertaining to the PROJECT for a period of three (3) years after final voucher (acceptance) for completed PROJECT. COUNTY, the State, the Federal Government and any of their designees shall have the right to audit, review, inspect, examine, monitor, copy, excerpt and transcribe all such documents and records at any time during COMB's regular business hours or upon reasonable notice.
3. Any notice which may be required under this Agreement shall be in writing to the PARTIES at addresses set forth below. Notice is effective five days after deposit, with postage fully prepaid, into the United States mail, or otherwise upon confirmation of receipt:

County of Santa Barbara
Public Works Director
123 East Anapamu Street
Santa Barbara, CA 93101

Cachuma Operation and Maintenance Board
Quiota Creek Crossing 8 Project Manager
3301 Laurel Canyon Road
Santa Barbara, CA 92105

IV. MUTUAL INDEMNIFICATIONS AND INSURANCE

1. COMB shall defend, indemnify, and hold COUNTY, its officers, officials, employees or agents harmless from and against any and all liability, loss, expense (including reasonable attorneys' fees), or claims for injury or damages arising out of the performance of this Agreement but only in proportion to and to the extent such liability, loss, expense, attorneys' fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of COMB, its officers, officials, employees or agents.

COUNTY shall defend, indemnify, and hold COMB, its officers, officials, employees or agents harmless from and against any and all liability, loss, expense (including reasonable attorneys' fees), or claims for injury or damages arising out of the performance of this Agreement but only in proportion to and to the extent such liability, loss, expense,

attorneys' fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of COUNTY, its officers, officials, employees or agents.

INSURANCE

Each party shall maintain its own insurance coverage, through commercial insurance, self-insurance or a combination thereof, against any claim, expense, cost, damage, or liability arising out of the performance of its responsibilities pursuant to this Agreement.

V. TERM AND OBLIGATION OF AGREEMENT

1. This Agreement shall remain in effect until discharged or terminated as follows:
 - a) The Agreement may be terminated at any time by mutual consent of the PARTIES.
 - b) This Agreement shall be discharged, and the PARTIES shall have no further obligation to each other, either upon completion of the PROJECT or upon the failure of the COUNTY Board of Supervisors to award a contract to construct the Project.
 - c) All obligations of COMB under the terms of this Agreement are subject to allocation of HBP funds to COUNTY. COMB may terminate this Agreement by written notice to COUNTY upon COMB determination that the necessary funds have not been allocated.
2. This Agreement represents the entire agreement of the PARTIES with respect to the subject matter hereof. No representations, warranties, inducements or oral agreements have been made by any of the parties except as expressly set forth herein, or in other contemporaneous written agreements.
3. This Agreement may not be changed, modified or rescinded except in writing, signed by all PARTIES hereto, and any attempt at oral modification of this Agreement shall be void and of no effect.
4. The PARTIES render their services under this Agreement as independent agencies. None of the employees or agents of any party shall be employees or agents of any other party to this Agreement.
5. The Agreement may not be assigned, transferred, hypothecated, or pledged by any party without the express written consent of the other parties.
6. Should any part of the Agreement be determined to be unenforceable, invalid, or beyond the authority of any party to enter into or carry out, such determination shall not affect the validity of the remainder of this Agreement which shall continue in full force and effect; provided that, the remainder of this Agreement can, absent the excised portion, be reasonably interpreted to give effect to the intentions of the parties.

7. This Agreement may be executed in one or more counterparts and shall become effective when one or more counterparts have been signed by all of the PARTIES; each counterpart shall be deemed an original but all counterparts shall constitute a single document.
8. No remedy or election of remedies provided for in this Agreement shall be deemed exclusive, but shall be cumulative with all other remedies at law or in equity. Each remedy shall be construed to give the fullest effect allowed by law.
9. This Agreement shall be governed by, and construed and enforced in accordance with the laws of the State of California.
10. The waiver by any of the PARTIES of any breach of any of the provisions of this Agreement shall not constitute a continuing wavier or a waiver of any subsequent breach of the same, or of any other provision of this Agreement.
11. Nothing in this Agreement, expressed or implied, is intended to confer any rights or remedies under or by reason of this Agreement on any third party, nor in anything in this Agreement intended to relieve or discharge the obligation or liability of any third party to any party to the Agreement, nor shall any provision of this Agreement give any third party any right of subrogation or action over or against any party to this Agreement.
12. Each of the PARTIES warrants to each other that he or she is fully authorized and competent to enter into this Agreement in the capacity indicated by his or her signature and agrees to be bound by this Agreement upon the execution of this Agreement by each of the PARTIES.

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective on the date when fully executed by both parties.

PASSED, APPROVED, AND ADOPTED by the Board of Supervisors of the County Santa Barbara, State of California, on this 12th day of July, 2016 by the following vote:

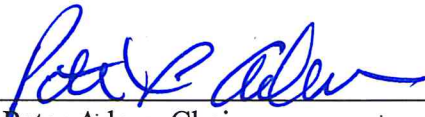
AYES: Supervisor Carbajal, Wolf, Farr, Adam & Lavagnino
NAYS: None
ABSENT: None
ABSTAIN: None

ATTEST:
MONA MIYASATO
COUNTY EXECUTIVE OFFICER
CLERK OF BOARD

By: 

Deputy Clerk

COUNTY OF SANTA BARBARA

By: 

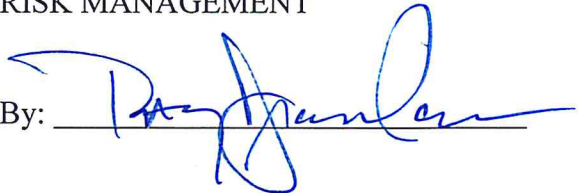
Peter Adam, Chair
Board of Supervisors

APPROVED AS TO FORM:
MICHAEL C. GHIZZONI
COUNTY COUNSEL

By: 

Deputy County Counsel

APPROVED AS TO FORM:
RAY AROMATORIO
RISK MANAGEMENT

By: 

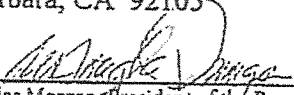
APPROVED AS TO ACCOUNTING FORM:
THEODORE A. FALLATI, C.P.A.,
AUDITOR CONTROLLER

By: 

Deputy

Refugio Road Quiota Creek Crossing 8 Project
Construction Cooperative Agreement between SANTA BARBARA COUNTY and COMB

Cachuma Operation and Maintenance Board
3301 Laurel Canyon Road
Santa Barbara, CA 92105

By: 
Douglas Morgan, President of the Board

Date: August 22, 2016

APPROVED AS TO FORM:

By:  8/22/16
Legal Counsel, COMB

EXHIBIT A

PROJECT SCOPE & SCHEDULE

SCOPE:

Project is to replace existing structurally deficient timber and steel bridge along Refugio Road at Crossing 8 of Quiota Creek in Santa Barbara County. The new bridge will allow fish-passage and increased flow capacity.

ANTICIPATED SCHEDULE:

Activity		Projected Completion Date
1	Secure Authorization to Proceed from Caltrans	July 2016
2	Approval of Professional Services Agreement Between County and COMB	September 2016
3	COMB Complete Consultant Selection	November 2016
4	Complete Environmental	April 2017
5	Complete Design	July 2017
6	Secure Right of Way and Secure Permitting	September 2017
7	Advertise for Construction	December 2017
8	Award for Construct	March 2018
9	Complete Construction	July 2018

EXHIBIT B

PROJECT COST ESTIMATE AND FUNDING PLAN

Quiota Creek Crossing 8 Project - COST AND FUNDING PLAN									05/19/16	
Phase	Responsp	Non-Federal COMB Cost	HBR Fed Program						Total COMB Costs	Total Project Costs
			Estimated Reimbursed Costs		COMB Share - Federal	COUNTY Share - Federal	Federal Share	Total		
			COMB	County						
Env	COMB	\$0	\$70,000	\$10,000	\$0	\$0	\$80,000	\$80,000	\$0	\$80,000
Design	COMB	\$0	\$70,000	\$20,000	\$0	\$0	\$90,000	\$90,000	\$0	\$90,000
Permitting	COMB	\$0	\$20,000	\$10,000	\$0	\$0	\$30,000	\$30,000	\$0	\$30,000
Right of way (Engineering, Coordination + Acquisition)	COMB	\$0	\$60,000	\$15,000	\$0	\$0	\$75,000	\$75,000	\$0	\$75,000
Admin/Management	COMB	\$30,000	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000	\$30,000
Construction Admin/CM	COMB/Consultant / County	\$0	\$100,000	\$30,000	\$0	\$0	\$130,000	\$130,000	\$0	\$130,000
Construction Capital	County/Contractor	\$0		\$1,251,000	\$0	\$0	\$1,251,000	\$1,251,000	\$0	\$1,251,000
Total		\$30,000	\$320,000	\$1,336,000	\$0	\$0	\$1,656,000	\$1,656,000	\$30,000	\$1,686,000

CACHUMA OPERATION & MAINTENANCE BOARD

BOARD MEMORANDUM

Date:	March 27, 2017
Submitted by:	Tim Robinson
Approved by:	Janet Gingras

SUBJECT: Grant Application for Fish Passage Improvement Project at Quiota Creek Crossing 9

SUMMARY:

A 55-foot prefabricated bottomless arched culvert with four wing walls and two rock weirs for grade-control are planned to replace the current concrete low flow crossing at Quiota Creek Crossing 9 of Refugio Road (a County road). This is the next crossing upstream of Crossings 1-4 and 6-7 that were replaced by COMB with bridges in 2013, 2011, 2015, 2016, 2008, and 2012, respectively, and Crossings 5 and 8 that are estimated to be constructed in the fall of 2017 or 2018. The project will provide unimpeded fish passage for *O. mykiss* and meet all Santa Barbara County public road safety and weight requirements. Construction financing will be provided by a pending grant to the California Department of Fish and Wildlife Fisheries Restoration Grant Program (CDFW-FRGP) and a construction match of \$50,000 from COMB. If funding is secured, the project will be built in the fall of 2018 (FY 2019).

FINANCIAL IMPACT:

COMB would be obligated to a \$50,000 construction match for the project that will be reflected in the FY 2019 budget. There will be no financial impact to the COMB FY 2018 budget except for advancing the engineering designs for the project.

ENVIRONMENTAL COMPLIANCE:

All necessary permits will be obtained prior to initiating construction of the proposed project.

COMMITTEE STATUS:

The Fisheries Committee has reviewed the Quiota Creek Crossing No. 9 grant application process and Board match obligation of \$50,000 and forwards to the Board with a recommendation to approve.

RECOMMENDATION:

Board authorize the General Manager to submit a CDFW-FRGP grant application for this year's grant competition for the Quiota Creek Crossing 9 Project and, if awarded, commit to a \$50,000 construction match in the year of construction.

LIST OF EXHIBITS:

N/A



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.”

March 27, 2017

General Manager Report

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

Meetings

- Cachuma Project Member Agency Managers Meeting

The Cachuma Project Member Agency Managers meeting is hosted monthly by the Santa Barbara County Water Agency and was held on Wednesday, March 1, 2017. The agenda topics included discussions regarding the recent inflow to Cachuma reservoir, the county's cloud seeding program, project water allocations, supply planning, ground water basin conditions, and management strategies. Contract renewal discussions are continued for the next meeting scheduled on Wednesday, April 5, 2017.

- Cachuma Project Stakeholder meeting

Reclamation hosted a Cachuma Project stakeholder meeting on Monday, March 6, 2017 to discuss operational status of the Cachuma reservoir in light of significant inflows which occurred in the reservoir during the February storms. The meeting was well attended and the discussion included the dissemination of inflow hydrology information, lake levels, water demands, COMB operations, CCRB operations, fish releases, evaporation, non-project water and project supply management strategies. As a follow-up to that meeting, Reclamation has notified the stakeholders that CCWA will be out of the penstock by March 24th due to upcoming Hilton Creek releases utilizing the Hilton Creek Emergency Backup System (HCEBS) equipment which is connected to the outlet works.

- Santa Barbara County Office of Emergency Management Meeting

On Tuesday, March 7th, a meeting was conducted by the Santa Barbara County Office of Emergency Management along with CalOES to discuss projects in the area affected by the February storms. COMB operations division staff attended and submitted the required documentation for potential funding assistance to repair the Sycamore Canyon slide area affected by the storms. Staff is awaiting a response from the CalOES representative regarding eligibility.

Cachuma Project Transferred Project Works – Contract Renewal

The contract for the Cachuma Project Transferred Project Works (Contract No. 14-06-200-5222R) dated March 1, 2003, between the U.S. Dept. of the Interior, Bureau of Reclamation, and Cachuma Operation and Maintenance Board expires on September 30, 2020. Reclamation will be scheduling an informal meeting during the first week of May to as an information exchange to discuss the process and expectations for contract renewal.

Operations Division Activities

- USBR Dam Inspections (Periodic Facilities Review)

On March 15 and 16, 2017, Reclamation conducted a Periodic Facility Review (PFR) of the Cachuma Project south coast dams and storage reservoirs. PFR's are conducted as a routine standard operating procedure every three years by engineering staff from Reclamation. The recent site inspections produced excellent feedback from Reclamation inspectors indicating COMB maintains the facilities within the top ten percent of other Reclamation inspected facilities. A final PFR report will be issued by Reclamation in the next few months.

- Lauro Diversion Valve Replacement Project

The installation of the Lauro Diversion Valve was successfully completed on Tuesday, February 28th by Cushman Contracting, Inc. The installation began at 6am and was completed approximately twelve hours later with re-charge operations commencing at 6:30 pm, twelve hours ahead of schedule.

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

Fisheries Division Activities

- 2000 Biological Opinion / Fish Management Plan Implementation

Since 2011, COMB has been responsible for implementation of the 2000 Biological Opinion and Fish Management Plan on behalf of the U.S. Bureau of Reclamation. As a requirement under Reasonable and Prudent Measure No. 11 of the National Marine Fisheries Service (NMFS) Biological Opinion dated September 8, 2000, (*Biological Opinion US Bureau of Reclamation Operation and Maintenance of the Cachuma Project on the Santa Ynez River in Santa Barbara County, California*), the Bureau of Reclamation identifies to NMFS in a letter the personnel designated to conduct monitoring and other compliance activities prior to each monitoring season and to confirm their experience through resumes or other evidence of their accomplishments.

In this years' annual letter dated March 1, 2017, Reclamation requested that NMFS continue to keep permanent certain long-standing Cachuma Operation and Maintenance Board (COMB) employees as the primary collectors on the permit. Reclamation also confirmed to NMFS the COMB staff which participated in the fish handling training seminar at the Fillmore Fish Hatchery where the Cachuma Project Biology Staff from COMB instructed and trained new personnel on proper fish handling techniques.

- Oak Tree Planting

The Fisheries Division personnel, with assistance from the Operations Division crew, have been planting new oak trees (Year 9) at Lake Cachuma County Park. Approximately 215 oak trees have been planted to date, and staff will continue planting trees this week. In between trap checks, crews are wrapping up the annual oak tree inventory, weeding and conducting cage maintenance on various age classes of oak trees.

- Migrant Trapping

A total of 5 *O. mykiss* (4 down and 1 up) ranging in size from 5-8 inches have been captured at the Hilton Creek traps. No *O. mykiss* have been captured at the Salsipuedes Creek trap site. Traps have been removed and re-installed several times due to storms this migration season.

- Spawning surveys

Spawning surveys are being conducted within the tributaries of the Lower Santa Ynez River, principally within Hilton, Salsipuedes and El Jaro Creeks. Two redds have been observed in Hilton Creek downstream of the Lower Release Point, with no redds being observed in Salsipuedes and El Jaro Creeks to date.

- Fish Stranding Surveys

As an ongoing operational routine, and in concert with Reclamation requests, staff has been conducting fish stranding surveys within Hilton Creek and the reach below the Long Pool as necessary. No *O. mykiss* have been found or rescued during the past month.

Respectfully Submitted,

Janet Gingras

General Manager

CACHUMA OPERATION AND MAINTENANCE BOARD

MEMORANDUM

DATE: March 27, 2017
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 Plan (IIP).

Lake Cachuma Operations

The total flow from Lake Cachuma into the Tecolote Tunnel for February was 272.2 acre-feet, for an average daily flow of 9.72 acre-feet. Lake elevation was 660.70 feet at the beginning of the month and 710.01 feet at the end. Storage change increased 64,360 acre-feet. CCWA wheeled 1251.7 acre-feet of water to Cachuma Project facilities.

Operation and Maintenance Activities

COMB Staff regularly performs the following duties:

- Operations and maintenance of the South Coast Conduit (SCC) and appurtenant facilities on the South Coast:

South Coast Conduit - Structure Inventory													
Reach	Endpoints	Linear Length (ft)	Pipe Diameter	Regulating Storage Reservoirs	Meters	Air Vents	Blow-Offs	Turnouts	Open Air Vents	Valves	Valve Size	Slide Gates	Capacity / Volume (gal)
Upper	Glen Annie Turnout (S. Portal) - Cater Water Treatment Plant	64,050	48"	2	5	32	35	18	2	115	4" - 48"	7	6,017,421
Lower	Cater Water Treatment Plant - Carpinteria Reservoir	90,910	27" - 36"	2	15	26	31	42	4	144	4" - 36"	-	3,190,171

- Operation of the Lake Cachuma North Portal Intake Tower and Jet Flow Valve
- Regulate and maintain flows from Lake Cachuma to meet the needs of South Coast Member Units
- Dam inspection and instrumentation reports (all reservoirs)
- Weekly Safety meetings
- Weekly Rodent Bait (all reservoirs)
- Weekly Toe Drain and Piezometer reads at Ortega (L23)
- 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 at 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:

- ✓ Watch out for Snakes
- ✓ Types of Injuries – How Workers Get Hurt
- ✓ Driving Safely in Mountain Areas

COMB Operations Staff specifically performed the following activities:

- SCC shutdown and construction work to replace the Lauro Stop Valve took place from February 27th through February 29th.
- Inspected all North Reach AVAR structures during system recharge following shutdown.
- Annual valve exercising at Lauro Reservoir Control Station.
- Annual valve exercising of the San Marcos Isolation Valve.
- USBR staff was on site March 15th & 16th performing Periodic Facility Reviews at all South Coast dam-sites and reservoirs.
- Cleared fallen debris and slide areas along the South Portal access road.
- Assisted Fisheries Division staff in planting oak trees.
- Annual weed abatement at Glenn Annie Reservoir.
- Cleaned valve pits at Ortega Reservoir, Lauro Reservoir, Carpinteria Reservoir, and Sheffield Control Station in storm preparation.
- Cleaned and repaired storm drains at Glen Anne, Lauro, Ortega, and Carpinteria Reservoirs following the storm-induced build-up of debris and fallen trees.

Current IIP projects include:

- Air Vacuum Air Release (AVAR) Valve and Blow-off Structure Rehabilitation & Replacement
- North Portal Access Road
- North Portal Jet Flow Control Valve
- North Portal Intake Tower Seismic Analysis & Conditions Assessment
- Lauro Tunnel Pipe Supports
- Lateral 3 Repair

Lauro Reservoir Stop Valve Replacement



South Portal Road Clean Up



South Portal Access Road Maintenance



CACHUMA OPERATION AND MAINTENANCE BOARD
BOARD MEMORANDUM

DATE: March 27, 2017
TO: Janet Gingras, General Manager
FROM: Tim Robinson, Fisheries Division Manager
RE: MONTHLY FISHERIES DIVISION REPORT

HIGHLIGHTS:

- Water delivery to Hilton Creek has been switched by USBR from their submersible pump in the Stilling Basin to gravity feed through the Hilton Creek Emergency Backup System to meet 2000 Biological Opinion target flows for Hilton Creek and Highway 154 Bridge on the LSYR in support of the *O. mykiss* population.
- The migrant trapping program began last month with no *O. mykiss* observed at Salsipuedes Creek and only 5 fish (4 downstream and 1 upstream) observed at Hilton Creek.

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 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.

Migrant Trapping: The 2017 Trapping Plan was submitted to U.S. Bureau of Reclamation (USBR) in January with no comments received. This monitoring effort normally begins in January and continues through May depending on stream flow rates. This year the Salsipuedes Creek traps were installed on 2/12/17 and the Hilton Creek traps on 2/21/17. Traps are removed during high flow events for safety of the staff, fishery and equipment, or if flows are too low to enable migration. Results of the trapping program are presented in the Annual Monitoring Report. Since the traps were installed, no *O. mykiss* were observed at the Salsipuedes Creek trap and only 5 *O. mykiss* (4 downstream and 1 upstream) observed at Hilton Creek. These numbers are extremely low compared to years past and even last year.

Redd Surveys: Redd surveys are conducted approximately every two weeks from mid-January through May. Surveys were initiated in February within the LSYR mainstem in the

Highway 154, Refugio, and Alisal reaches where access was permitted, and certain sections of Hilton, Quiota, and Salsipuedes/El Jaro creeks. The number of redds is reported in the Annual Monitoring Plan. To date, only three redds have been observed across the basin of which all were seen in Hilton Creek.

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. A project update is provided in a separate Board memo.

Hilton Creek Releases for the Fishery: On 3/23/17, USBR switched the flow delivery system to Hilton Creek from the small submersible pump on the south side of the Stilling Basin to gravity flow from the Hilton Creek Emergency Backup System (HCEBS). The flow rate is approximately 3.5 cfs and is being delivered to the Lower Release Point. No flow is being delivered to the Upper Release Point at this time. Water quality conditions in Hilton Creek are being monitored at several locations. Water storage in Lake Cachuma as of 3/24/17 has climbed over 95,000 af and well beyond critical drought conditions hence requiring target flows to Hilton Creek and to the Highway 154 Bridge on the Lower Santa Ynez River. .

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 was successfully completed on 12/15/16 on time and within the budget. All are very pleased with the results of the project. The final financial report for the project will be provided at the next COMB Board meeting. Large winter storms compromised the flow conveyance capacity of the stream channel under the bridge by depositing a large cobble bar. To restore the channel to its design criteria, that cobble bar needs to be removed and is presented in a separate Board memo.

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. Grand awards were announced last week and we were successful in securing funding for this project. Acceptance of the grant will be discussed at the next Board meeting.

Quiota Creek Crossing 8: This project and the required Cooperative Agreement with the County were 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 approved the funding for a full bridge replacement. SBCAG approved the project on 11/17/16. A draft Professional Service Agreement (PSA) for COMB with the County to manage the project is before the Board for review and approval this month (a separate Board memo). Once the PSA has been completed, we will go through the CalTrans process for obtaining a Project Engineer and begin grant expenditures (April 2017), hold a field review meeting with CalTrans (April 2017), and then begin environmental review, permitting, design, flood area certificates, and Right of Way in May 2017. Pending the above, the project would be built in fall 2017 or 2018.

Quiota Creek Crossing 9: Preliminary design work is underway for this project in preparation for submitting a CDFW-FRGP grant proposal for this round of funding that is due at the beginning of May. A separate Board memo addresses this effort.

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 the identified repairs to the HCWS which will be scheduled at some point. On 3/7/17, USBR did attempt to operate both the HCWS and HCEBS. The HCWS was inoperable requiring repairs that will be attended to as USBR staff become available. The HCEBS was able to provide water to Hilton Creek by gravity flow.

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 February 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)
Fish Passage Supplementation	3,200	0	3,200
Adaptive Management	500	149	351
Fish Rearing***	5,484	5,484	0
Project Yield		15,022	
Total:	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 2/28/17.			
*** 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 Adaptive Management Committee meetings, Reconsultation, and other operational 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.

Consultant Activity Summary:

HDR Fisheries Design Center (Mike Garelo) – 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:	March 27, 2017
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 July, 2016 to the present (7/1/16 – 3/27/17, 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 2015 Annual Report and 2015 Lakeshore Survey have been completed and distributed to the COMB Board.

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

	July 2016	Aug 2016	Sept 2016	Oct 2016	Nov 2016	Dec 2016	Jan 2017*	Feb 2017**
Year 8 Oaks (2015-2016)	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Mulched		
Year 7 Oaks (2014-2015)	Irrigated Weeded Mulched	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded	Irrigated Weeded			
Year 6 Oaks (2010-2011)								
Year 5 Oaks (2009-2010)		Irrigated Weeded				Cage maint.		
Year 4 Oaks (2008-2009)						Cage maint.		
Year 3 Oaks (2007-2008)					Irrigated	Cage maint.		
Year 2 Oaks (2006-2007)								
Year 1 Oaks (2005-2006)	Irrigated							
* Annual Oak Tree Inventory								
* Annual Report								
** New Oak Tree Planting (Year 9)								

The annual oak tree inventory began in January and is nearly complete. Weeding and cage maintenance is also being completed in between trap checks (day and night). Crews have been planting new trees (Year 9) at the Lake Cachuma County Park (Exhibit 1). Approximately 230 new trees have been planted to date.

RECOMMENDATION:

For Board information only.

LIST OF EXHIBITS:



Exhibit 1: Lake Cachuma Oak Tree Restoration Program Year 9 oak tree planting at the County Park showing (a) tree being put into the ground, (b) Mohawk planting area, (c) park entrance planting area, and (d) Park pool planting area.

16-17 ENTITLEMENT

CACHUMA OPERATION AND MAINTENANCE BOARD WATER PRODUCTION AND WATER USE REPORT FOR THE MONTH OF FEBRUARY 2017 AND THE WATER YEAR TO DATE

(All in rounded Acre Feet)

						MONTH TOTAL	YTD TOTAL
WATER PRODUCTION:							
Cachuma Lake (Tec. Diversion)						272	3,419
Tecolote Tunnel Infiltration						112	317
Cachuma Lake (County Park)						1	8
State Water Diversion Credit						399	2,588
Bishop Ranch Diversion						0	0
Meter Reads						1	1,191
So. Coast Storage gain/(loss)						(26)	(112)
Total Production						385	3,745
Total Deliveries						374	3,667
Unaccounted-for						11	77
% Unaccounted-for						2.84%	2.06%
WATER USE:							
	GWD	SB CITY	MWD	CVWD	SYRWCD	TOTAL	
					I.D. #1		
M&I	0	0	0	0	1	1	
Agricultural	0	0	0	0	0	0	0
	0	0	0	0	1	1	
Unaccounted Reconciliation - Cachuma:							
M&I	0	0	0	0	0	0	0
Agriculture	0	0	0	0	0	0	0
Unaccounted-for: Cachuma	0	0	0	0	0	0	0
Unaccounted-for: SWP Report	0	5	2	4	0	11	
Total Unaccounted-for:	0	5	2	4	0	11	
TOTAL USE for Month	0	5	2	4	1	12	
Same Mo/prev. yr	0	85	17	0	1	103	
M&I Yr to date	0	1,115	291	0	8	1,414	
Ag. Yr to date	0	0	54	0	0	54	
TOTAL YTD	0	1,115	345	0	8	1,468	
USAGE % YTD	14.6%	100%	100%	0%	45.8%	77.7%	
Previous Year/YTD	1,447	1,720	791	299	6	4,263	
Evaporation #	5	0	0	0	0	5	
Evaporation, YTD	82	124	33	0	3	242	
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	
TOTAL AVAILABLE	561	1,239	377	0	24	2,201	
REMAINING BALANCE	479	0	0	0	13	491	
Percentage Remaining	85%	0%	0%	0%	54%	22%	

*** 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 February: MWD 296 AF; CVWD 196 AF
GWD 445 AF(Morehart 2 AF); City of S.B. 296 AF; and LaCumbre 15 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 February 2017.

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.

CACHUMA OPERATION AND MAINTENANCE BOARD
WATER STORAGE REPORT

MONTH: **February 2017**

GLEN ANNIE RESERVOIR

Capacity at 385' elevation:	518	AF
Capacity at sill of intake at 334' elevation:	21	AF
Stage of Reservoir Elevation	337.00	Feet
Water in Storage	35.04	AF

LAURO RESERVOIR

Capacity at 549' elevation:	503	AF
Capacity at top of intake screen, 520' elevation:	106.05	AF
Stage of Reservoir Elevation	541.28	Feet
Water in Storage	363.38	AF

ORTEGA RESERVOIR

Capacity at 460' elevation:	65	AF
Capacity at outlet at elevation 440':	0	AF
Stage of Reservoir Elevation	446.90	Feet
Water in Storage	19.21	AF

CARPINTERIA RESERVOIR

Capacity at 384' elevation:	45	AF
Capacity at outlet elevation 362':	0	AF
Stage of Reservoir Elevation	378.90	Feet
Water in Storage	32.39	AF

TOTAL STORAGE IN RESERVOIRS

	414.99	AF
Change in Storage	-25.61	AF

CACHUMA RESERVOIR*

Capacity at 750' elevation:	184,121	AF
Capacity at sill of tunnel 660' elevation:	24,281	AF
Stage of Reservoir Elevation	710.01	Feet
Water in Storage	89,227	AF
Surface Area	1,826	
Evaporation	236.2	AF
Inflow	62,486.5	AF
Downstream Release WR8918	0.0	AF
Fish Release (Hilton Creek)	0.0	AF
Outlet	0.0	AF
Spill/Seismic Release	0	AF
State Water Project Water	1251.17	AF
Change in Storage	64,360	AF
Tecolote Diversion	272.2	AF

Rainfall:	Month: 10.61	Season: 23.68	Percent of Normal: 163%
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**SUMMARY: UNACCOUNTED-FOR WATER ALLOCATIONS
FEBRUARY 2017**

	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	0.0	0.0	0.1	0.2	0.0	0.0	0.4	0
City	0.7	0.0	0.4	3.5	0.2	0.0	4.7	5
MWD	0.1	0.5	0.0	0.4	0.1	0.4	1.5	2
CVWD	0.3	0.5	0.2	1.6	0.2	1.6	4.4	4
Total	1.1	1.0	0.8	5.7	0.4	2.0	11.0	11

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. 11/30/16

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	Allocation		M & I	Agr	Total
									M & I	Agr			
Oct	0	561	0	0	0	37	0	37	0	37	0	0	0
Nov			0	0	0	29	0	29	0	29	0	0	0
Dec			0	0	0	9	0	9	0	9	0	0	0
Jan			0	0	0	2	0	2	0	2	0	0	0
Feb			0	0	0	5	0	5	0	5	0	0	0
Mar			0	0	0	0							
Apr			0	0	0	0							
May			0	0	0	0							
Jun			0	0	0	0							
Jul			0	0	0	0							
Aug			0	0	0	0							
Sep			0	0	0	0							
Total	0	561	0	0	0	82							

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

SCHEDULES AND REVISIONS						
	Total	M&I	AG	M&I	AG	Total
Begin Bal	561	412	149	0	0	0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

REMAINING BALANCES						
Month	Total	M&I	AG	M&I	AG	Total
Oct	524	412	112	0	0	0
Nov	495	412	83	0	0	0
Dec	486	412	74	0	0	0
Jan	484	412	72	0	0	0
Feb	479	412	67	0	0	0
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						

TOTAL 479

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. 2/28/17

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			Acre-feet			Acre-feet				
			M & I	Agr	total	Evap	Div	Total	Allocation		M & I	Agr	Total
Oct	0	377	176	36	212	25	212	237	197	40	0	0	0
Nov			115	18	132	8	132	140	121	19	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	377	291	54	344	33							

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

SCHEDULE AND REVISIONS						
	Total	M & I	Agr	M & I	Agr	Total
Begin Bal	377	377	0	0	0	0
Oct						0
Nov						0
Dec						0
Jan						0
Feb						0
Mar						0
Apr						0
May						0
Jun						0
Jul						0
Aug						0
Sep						0

REMAINING BALANCES						
Month	Total	M & I	Agr	M & I	Agr	Total
Oct	140	121	19	0	0	0
Nov	0	0	0	0	0	0
Dec	0	0	0	0	0	0
Jan	0	0	0	0	0	0
Feb	0	0	0	0	0	0
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						

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

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

Contract Entity: **City of Santa Barbara**
 Last updated by C.O.M.B. 2/28/17

Month	Approved Schedule Current Year	Carryover Previous Year	TOTAL WATER USED			WATER USE CHARGED TO CARRYOVER BALANCES					WATER USE CHARGED TO CURRENT ENTITLEMENT		
			Acre-feet			Acre-feet			Allocation		Acre-feet		
			M & I	Agr	total	Evap	Div	Total	M & I	Agr	M & I	Agr	Total
Oct	0	1239	474	0	474	81	474	555	555	0	0	0	0
Nov			393	0	393	38	393	431	431	0	0	0	0
Dec			243	0	243	5	243	248	248	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	1239	1,110	0	1,110	124							

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

SCHEDULE AND REVISIONS						
	Total	M&I	-----	M&I	-----	Total
Begin Bal	1,239	1,239		0		0
Oct						0
Nov						0
Dec						0
Jan						0
Feb						0
Mar						0
Apr						0
May						0
Jun						0
Jul						0
Aug						0
Sep						0

REMAINING BALANCES						
Month	Total	M&I	-----	M&I	-----	Total
Oct	684	684	0	0		0
Nov	253	253	0	0		0
Dec	0	0	0	0		0
Jan	0	0	0	0		0
Feb	0	0	0	0		0
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						

TOTAL 0

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. 2/28/17

Month	Approved Schedule	Carryover	TOTAL WATER USED			WATER USE CHARGED TO CARRYOVER BALANCES					WATER USE CHARGED TO CURRENT ENTITLEMENT			
			Acre-feet			Acre-feet					Acre-feet			
			M & I	Agr	Total	Evap	Div	Total	M & I	Agr	M & I	Agr	Total	
	Current Year	Previous Year												
Oct	0	24	2	0	2	2	2	3	3	0	0	0	0	0
Nov			2	0	2	1	2	3	3	0	0	0	0	0
Dec			3	0	3	0	3	3	3	0	0	0	0	0
Jan			1	0	1	0	1	1	1	0	0	0	0	0
Feb			1	0	1	0	1	1	1	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	24	8	0	8	3								

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

SCHEDULE AND REVISIONS						
	Total	M & I	Agr	M & I	Agr	Total
Begin Bal	24	24	0	0	0	0
Oct						0
Nov						0
Dec						0
Jan						0
Feb						0
Mar						0
Apr						0
May						0
Jun						0
Jul						0
Aug						0
Sep						0

COUNTY PARKS							
Month	A.F. Used	Total	M & I	Agr	M & I	Agr	Total
Oct	1.72	21	21	0	0	0	0
Nov	1.72	18	18	0	0	0	0
Dec	2.60	15	15	0	0	0	0
Jan	0.93	14	14	0	0	0	0
Feb	0.90	13	13	0	0	0	0
Mar							
Apr							
May							
Jun							
Jul							
Aug							
Sep							

TOTAL 13

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

Contract Entity: **Santa Barbara Co. Water Agency**
 Last updated by **C.O.M.B. 2/28/17**

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				Acre-feet			Allocation		Acre-feet		
			Used %	M & I	Agr	Total	Evap	Div	Total	M & I	Agr	M & I	Agr	Total
Oct	0	2201	37.8%	652	36	688	145	688	832	755	77	0	0	0
Nov			65.2%	509	18	527	76	527	603	555	48	0	0	0
Dec			11.79%	246	0	246	14	246	260	251	9	0	0	0
Jan			0.14%	1	0	1	2	1	3	1	2	0	0	0
Feb			0.27%	1	0	1	5	1	6	1	5	0	0	0
Mar				0	0	0	0							
Apr				0	0	0	0							
May				0	0	0	0							
Jun				0	0	0	0							
Jul				0	0	0	0							
Aug				0	0	0	0							
Sep				0	0	0	0							
Total	0	2201		1,409	54	1,462	241							

CONVERSIONS

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

SCHEDULE AND REVISIONS

	Total	M & I	Agr	M & I	Agr	Total
Begin Bal	2,201	2,052	149	0	0	0

COUNTY PARKS

REMAINING BALANCES

Month	A.F. Used	Total	M & I	Agr	M & I	Agr	Total
Oct	1.72	1,369	1,257	112	0	0	0
Nov	1.72	766	683	83	0	0	0
Dec	2.60	501	427	74	0	0	0
Jan	0.93	498	426	72	0	0	0
Feb	0.90	492	425	67	0	0	0
Mar							
Apr							
May							
Jun							
Jul							
Aug							
Sep							

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

MONTH	DELVRD TO LAKE	Delvd to Lake	CVWD Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	MWD Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	S.B. Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	GWD Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	LCMWC Stored	Delvd to SC	Evap / Spill	Delvd to Lake	RSYS Stored	Delvd to SC	Delvd to Lake	MLC Stored	Delvd to SC	
2016																																
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	140	0	0	0	0	0	0	0	
January	653	54	38	16	0	0	0	0	0	0	0	367	0	367	0	0	200	136	64	0	0	30	160	10	0	0	0	0	2	0	2	
February	693	0	36	0	0	2	125	0	125	0	0	366	0	366	0	0	200	130	197	0	8	0	153	6	1	0	0	0	2	0	2	
March	965	0	33	0	0	3	0	0	0	0	0	367	0	367	0	0	596	523	192	1	10	0	138	14	0	0	0	0	2	0	2	
April	1283	0	0	29	0	4	0	0	0	0	0	677	178	476	24	0	600	696	357	5	65	0	87	49	2	3	0	3	3	0	3	
May	1309	0	0	0	0	0	0	0	0	0	0	522	155	492	24	28	783	958	405	5	111	0	35	44	8	1	0	1	3	0	3	
June	1261	0	0	0	0	0	0	0	0	0	0	466	112	463	26	20	700	982	551	4	121	85	0	85	0	5	0	5	5	0	5	
July	1342	100	0	100	0	0	0	0	0	0	0	541	75	534	28	17	600	923	513	5	141	91	52	39	0	3	0	3	7	0	7	
August	1372	135	135	0	0	0	0	0	0	0	0	549	615	0	0	9	600	869	541	4	109	80	51	75	6	3	0	3	5	0	5	
September	1310	225	246	96	4	14	250	0	240	10	0	311	1035	0	0	62	460	517	552	2	87	60	55	51	5	0	0	0	4	0	4	
October	1400	180	291	112	7	16	350	268	77	5	0	321	1289	0	0	68	511	438	554	2	34	35	70	17	3	0	0	0	3	0	3	
November	1369	150	401	24	0	16	328	533	48	0	15	352	1598	0	0	71	490	529	347	0	24	45	60	53	3	2	0	2	2	0	2	
December	1470	111	504	0	1	7	403	809	112	5	10	603	2098	84	2	28	338	747	99	1	10	0	0	21	1	12	11	1.42	3	1	2	
Total	14427	955	504	377	4	62	1456	809	602	20	25	5442	2098	3148	104	302	6078	747	4374	29	719	426	0	465	28	29	11	18.42	41	1	40	

Notes:

September 2016 - GWD transferred 170.64 AF SWP water to City of SB per overlap agreement

November 2016 - GWD transferred 28.6 AF SWP water to City of SB per overlap agreement (monthly reconciliation)

December 2016 - GWD transferred 10.12 AF SWP water to City of SB per overlap agreement (monthly reconciliation)

MONTH	DELVRD TO LAKE	Delvd to Lake	CVWD Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	MWD Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	S.B. Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	GWD Stored	Delvd to SC	Loss	Evap / Spill	Delvd to Lake	LCMWC Stored	Delvd to SC	Evap / Spill	Delvd to Lake	RSYS Stored	Delvd to SC	Delvd to Lake	MLC Stored	Delvd to SC	
2017																																
Bal. Frwd	0	0	504	0	0	0	0	809	0	0	0	0	2098	0	0	0	0	747	0	0	0	0	0	0	0	0	11	0	0	1	0	
January	1437	219	720	0	1	2	357	1102	58	3	3	357	2179	273	4	8	467	1144	58	0	3	35	23	10	2	0	11	0	2	1	2	
February	1250	196	809	96	4	7	296	1361	25	2	10	296	2252	197	5	21	445	1528	50	0	11	15	7	29	2	0	11	0	2	1	2	
March	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0
Total	2687	415	809	96	0	9	653	1361	83	0	13	653	2252	470	0	29	912	1528	108	0	14	50	7	39	4	0	11	0	4	1	4	

Notes:

Total SC Storage at month end (AF): 5950

Total Storage at month end (AF): 5968

January 2017 - GWD transferred 10.18 AF SWP water to City of SB per overlap agreement (monthly reconciliation)(USBR Daily Ops Reservoir storage 1/31/2017 - 24,867 AF)



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



**Summary of Aquatic Invasive Species Vessel Inspection Program
and Early Detection Monitoring Program: February 2017**

Cachuma Lake Recreation Area Launch Data -- February 2017		
Inspection Data		
Total Vessels entering Park	24	
Total Vessels launched	5	
Total Vessels Quarantined	19	79%
Returning with Boat Launch Tag	2	40%
New: Removed from Quarantine	*	
Kayak/Canoe: Inspected, launched	3	60%
4-stroke Engines	*	
2-strokes, w/CARB star ratings	*	
2-strokes, NO emissions ratings	*	
Quarantine Data		
Total Vessels Quarantined	19	
Quarantined 7 days	*	
Quarantined 14 days	*	
Quarantined 30 days	19	
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	30	
Demographic Data		
Quarantined from infected county	2	
Quarantined from SB County	16	
Quarantined from uninfected co	1	

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: 2017.02.26; 9:00 – 11:00 PDT
 Method: 5 PVC/Cement Sampling Stations; 54 linear feet of line
 Surveyors: John Viggianelli and Kristin Loft
 Lake elevation: Max feet: 753.00, current: 708.38; Max acre-feet: 193,305, current: 86,238;
 Current capacity: 44.60%

Prepared by John Viggianelli, based on inspections and data collected by Cachuma Lake Staff, Park Hosts, volunteers and Sea Grant staff and interns

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