PUBLIC WORKS
SAN LUIS OBISPO COUNTY

SAN LUIS OBISPO COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT
ZONE 3 ADVISORY COMMITTEE

AGENDA

Thursday, November 20, 2014 6:30 p.m.
Arroyo Grande City Hall

I. CALL TO ORDER AND ROLL CALL

II. PUBLIC COMMENT
This is an opportunity for members of the public to address the Committee on items that are not on the agenda

III. Meeting minutes of September 18, 2014

IV. OPERATIONS REPORT
- A. Water plant operations
- B. Dam storage & creek releases

V. INFORMATION ITEMS
- A. 1st Quarter Budget Update
- B. Climate Update

VI. CAPITAL PROJECTS UPDATE
- A. Quarterly Update (Verbal)

VII. ACTION ITEMS (No Subsequent Board of Supervisors Action Required)
- A. Approval of 2015 Advisory Committee Schedule

VIII. ACTION ITEMS (Board of Supervisors Action is Subsequently Required)
- A. Recommend BOS adopt a resolution for the Low Reservoir Release Plan
- B. Endorsement of ECROP Consulting Inc's scope, cost estimate and schedule for hydrological services related to the HCP

IX. FUTURE AGENDA ITEMS
- A. Flood Zone 1/1A Sand Bar Management Plan Presentation
- B. Contract Renegotiation Discussions

X. COMMITTEE MEMBER COMMENTS

Next Regular Meeting is Tentatively Scheduled for
Thursday, January 15, 2015 at 6:30 p.m. at the Grover Beach City Hall

SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
ZONE 3 MEETING MINUTES
September 18, 2014

1. Call To Order/Roll Call

   The meeting was called to order at 6:30 p.m. by John Diodati. Member Diodati called the roll. Members in attendance were:

   Brian Talley, Agricultural Delegate
   Karen Bright, City of Grover Beach
   Kristen Barneich, City of Arroyo Grande
   Jim Garing, Member at Large
   Mary Lucey, Oceano Community Services District
   Kris Vardas, City of Pismo Beach (arrived later)
   John Wallace, Member at Large

   A quorum was established and the meeting continued. Vice-Chair Lucey conducted the meeting in the absence of Chair Vardas.

   a. Change of Chair & Vice-Chair to Pismo Beach & Oceano – This item has been accomplished and will be in effect for one year.

2. Public Comment – (None)

3. Meeting Minutes of July 16, 2014 –Garing moved to approve the minutes as published, seconded by Barneich. The motion passed unanimously with Wallace and Lucey abstaining.

4. Operations Report – Craig Kesler, for the Lopez Treatment Plant provided information regarding the status of operations of the Lopez Dam and Water Treatment Plant. Member Vardas arrived and relieved Lucey in conducting the meeting.

   a. Water Plant Operations – Current plant production was 6.6 MGD, filter turbidity range was .01 - .04 NTU. Mr. Kesler states the plant has no issues and is running straight and normal.

   b. Dam Storage & Creek Releases - Lopez Reservoir current elevation was 485. 70 feet with an approximate storage of 22,596 acre feet. The reservoir was at approximately 46% capacity and current downstream release is 3.7 MGD.

5. Information Items –

   a. 4th Quarter Budget Update- Jennifer Colvard, for the County of Public Works, stated that Flood Zone 3 for 2013-2014 expenses were under budget by approximately 27% at year - end. Attachments included graphs that reflected into 3 categories- Routine Operations and Maintenance and at year- end was under budget at about 4% which equates to $140,000. Second graph refers to Non-Routine Operations and Maintenance and at year-end was under budget at 77% or $350,000 related to HCP efforts. The third graph refers to Capital Outlay under budget by 73% or approximately $742,000 as a result of three

projects: Perimeter Fencing Project, SCADA system and the 6th WRAC Filtration Module. Final billings have been credited with approx. $192,000 and will be distributed with the January billings.

b. HCP Status Update – Mark Hutchinson, for the County Public Works, provides an update on the status of the Habitat Conservation Plan (HCP). The selection process is almost over, with two consultants being interviewed and ranked. The recommendation will go to the TAC and hopefully have the entire packet for Advisory Committee recommendation at the next meeting. It is staffs understanding that the panel was happy with the consultants.

c. Surplus Water Status - At the July 19th Board meeting, Supervisors did a combination declaration, 501 acre of surplus and an amount of Emergency Drought Relief Water to bring the total amount to 2,327 all to Zone 3 agency. All agencies have been issued there requested water deliveries by a month-by-month basis. Plant Operators are trying to maximize flows through the plant and various turnouts in conjunction with agency staff. The Board has also adopted supplemental recommendations that several of the member agencies have made concerning negotiations to look at the contract to see if there is a better way to calculate surplus water, which will be brought back to the board. TAC members and Mr. Hutchinson are trying to make the contract amendments work with HCP specifically the downstream release generating surplus water. Mr. Vardas questioned the deviation in the Board of Supervisors staff report from what the advisory wanted and asked if Mr. Hutchinson could emphasize. Mr. Hutchinson spoke about the recommendations by the Advisory Committee. The committee discussed numerous issues, but the adopted motion was put in the Board of Supervisors staff report. Jim Garing commented on the fact that he was disappointed that both members Garing and Wallace's motion did not get approved. Member Wallace spoke on this issue and wants to get together with the County to work this problem out for the future.

d. Climate Update- John Diodati spoke about NOAA graphics on precipitation, which are a part of the agenda packet. Refers to graphics of California and how San Luis Obispo County was the epicenter to the drought starting in 2013. Currently, 84% of California is in an extreme drought. Diodati referenced the NOAA temperature graphic as well. Temperature affects evaporation of our reservoirs. Final NOAA graphic is of the precipitation forecast which reveals that SLO County will be above average rain but will not persist- only a "baby El Nino."

6. Capital Projects Update –
   a. Quarterly Staff Report (Verbal) – Jeff Lee, for the County Public Works, delivers an update on Zone 3 capital improvement projects.
      i. Sixth membrane filtration rack addition project – A purchase order was issued Sept. 5th to the Paul Corporation for the actual equipment budgeted from previous fiscal year. Shop drawings will be submitted in late October and will start a 6th month timeline once that is finished.
      ii. Lopez Treatment Plant security fencing project – Confirmed on the contract with Speiss Construction on October 1, 2104. Should take 6-8 weeks to complete.
      iii. SCADA system upgrade – Work through about use of cells and radio equipment. Will be discussed further at the October or the November TAC meeting. Cost benefit versus permitting versus visual aspects.

iv. Equipment replacement plan – Audit of the variable frequency drives and there has been a purchase order made. A presentation will be made at the next TAC meeting to discuss budget scenarios for this year and the next fiscal year.

b. Lopez SCADA Computer Replacement-Budget Transfer- Jeff Lee, for the County Public Works, references attachments B and C. Transferred $75,000 from the turnout SCADA budget to the computer equipment replacement project to fund replacement of 8 computers, hardware and Wonderware. TAC approved all. Cost summary of software and hardware- higher than average computer but will allow systems to last longer. Recommendation on the Lopez SCADA Computer Replacement was motioned by Jim Garing and was seconded by Karen Bright (unanimous).

7. Action Items (No Subsequent Board of Supervisors Action Required) –
   a. Low Level Reservoir Release Plan Status – Mark Hutchinson, County Public Works, recaps the Zone 3 Advisory Committee the Low Level Reservoir Release Plan (LRRP) which is a component of the Interim Downstream Release Schedule (IDRS). The LRRP establishes downstream releases and municipal diversions from the reservoir during periods of low reservoir storage to preserve water for a minimum of 3-4 years. Mr. Hutchinson states that this plan has three recommendations. First recommendation is to endorse a contract which the County would do via a purchase order with Water Systems Consulting at $20,000. Second recommendation is to work individually with the cities and agencies to get their consensus and then go back to the Board. Third, consider a series of special meetings with the various agencies to formulate a response plan along with future scheduled meetings. Discussion on the LRRP was presented via a power point presentation. LRRP adoption timeline was discussed. Brian Talley states how Agriculture will be a part of the plan adoption and asks questions about how Ag will have input on the plan and at city council meetings. Discussion continues on future LRRP meetings.
   Joh Wallace moves to endorse the recommendations with the revisions; a second by Jim Garing (unanimous).

8. Future Agenda Items –
   a. Flood Zone 1/1A Sand Bar Management Plan presentation - John Diodati stated that this will be discussed when there is not so heavy of a meeting.
   b. Contract Renegotiation Discussion- John Diodati stated that the Board of Supervisors as that any contract negotiations be brought to the Advisory Committee for input.

9. Committee Members Comments – Hutchinson alerts members that the Board of Supervisors will hold a Water Summit presentation on what the drought response team has done and will be on October 15, 2014.
10. Regularly Scheduled Meeting – Will be held Thursday, November 20, 2014 at 6:30 p.m. at Arroyo Grande City Hall

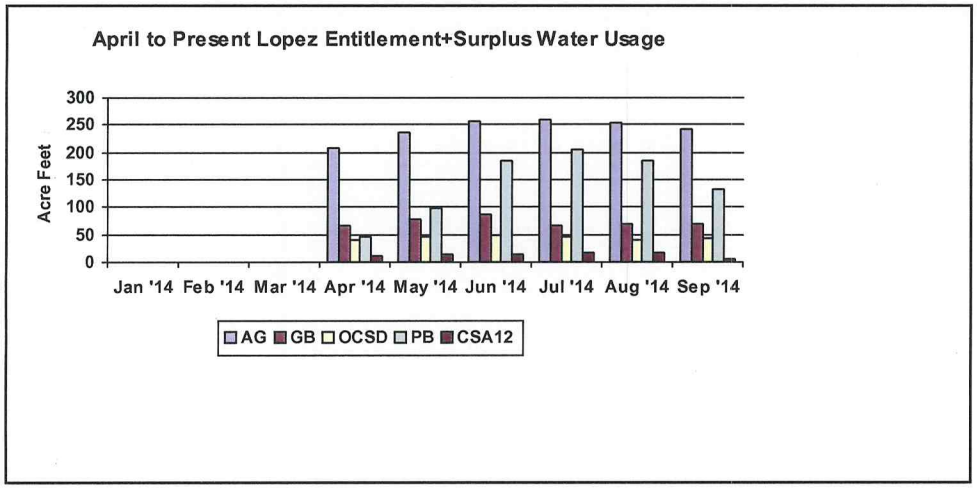
The meeting was adjourned at 7:15 p.m.

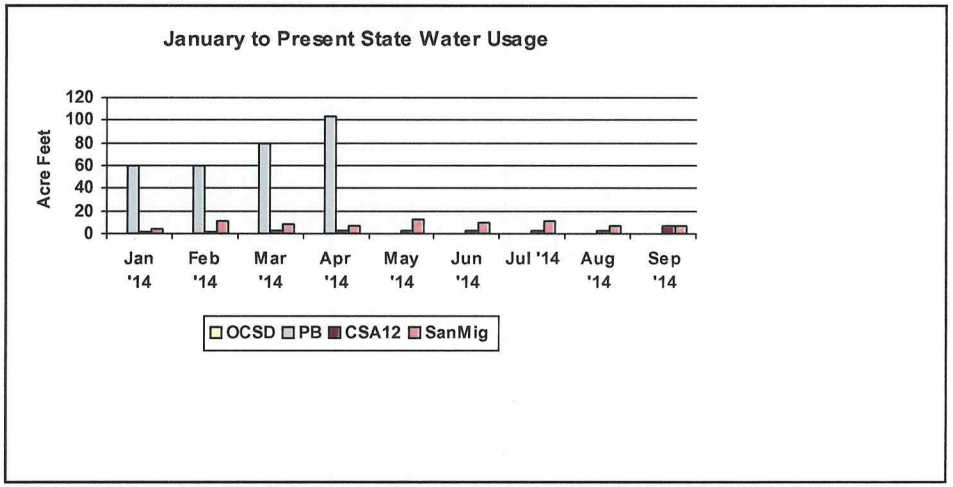
Respectfully Submitted,

John Diodati, Zone 3 Secretary

San Luis Obispo County Flood Control and Water District
Zone 3 - Lopez Project - Monthly Operations Report
September, 2014

	Lopez Water Deliveries													State Water Deliveries						Total Water Deliveries This Month
				Usage This Month				Usage April to Present						Requested		This Month		January to Present		
Contractor	Entl.	Surplus	Total	Entl.	Entl. %	Surplus	Surpls%	Entl.	Entl %	Surplus	Surpls%	Total	Total%	Annual	Month	Usage	%	Usage	%	
Arroyo Grand	2290	1176.00	3466.00	242.21	10.6%	0.00	0.0%	1455.44	63.6%	0.00	0.0%	1455.44	42.0%							242.21
Oceano CSD	303	156.00	459.00	42.03	13.9%	0.00	0.0%	263.70	87.0%	0.00	0.0%	263.70	57.5%	0	0	0.00	#Num!	0.00	#Num!	42.03
Grover Beach	800	411.00	1211.00	68.60	8.6%	0.00	0.0%	434.75	54.3%	0.00	0.0%	434.75	35.9%							68.6
Pismo Beach	892	458.20	1350.20	133.50	15.0%	0.00	0.0%	850.45	95.3%	0.00	0.0%	850.45	63.0%	389.93	0	0.00	#Num!	303.00	77.7%	133.5
CSA 12	245	125.80	370.80	6.77	2.8%	0.00	0.0%	83.80	34.2%	0.00	0.0%	83.80	22.6%	47.2	7.6	7.52	98.9%	25.44	53.9%	14.29
San Miguelito														130	12	7.37	61.4%	78.12	60.1%	7.37
Total	**4530**	**2327.00**	**6857.00**	**493.11**	**10.9%**	**0.00**	**0.0%**	**3088.14**	**68.2%**	**0.00**	**0.0%**	**3088.14**	**45.0%**	**567.13**	**19.6**	**14.89**	**76.0%**	**406.56**	**71.7%**	**508.00**





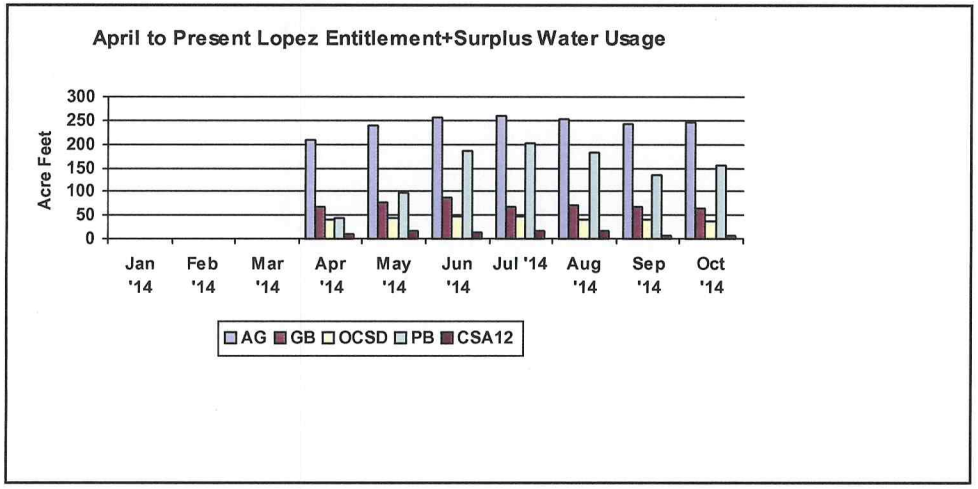
Lopez Dam Operations	This Month	Year to Date		
Lake Elevation (full at 522.37 feet)	484.94		Difference (feet)	-37.43
Storage (full at 49200 acre feet)	22167		% Full	45.1%
Rainfall	0	0.00		
Downstream Release (4200 acre feet/year)	325.32	1727.41		
Spillage (acre feet)	0	0.00		

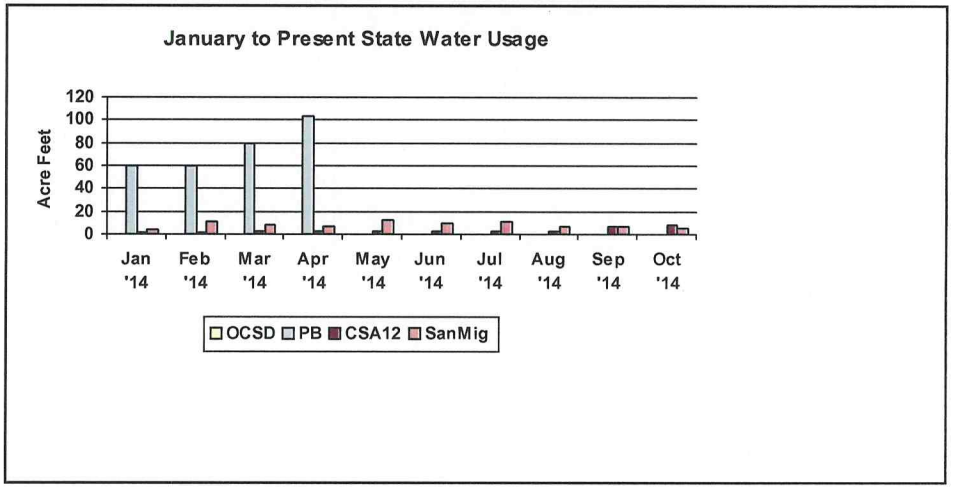
Comments: 1) Oceano State Water to Canyon Crest via Arroyo Grande's Edna turn out. A total of 2.61 AF delivered to Canyon Crest was added to Oceano's State Water usage this month and 2.61 AF was subtracted from Arroyo Grande's usage this month.
2) At the August 19, 2014 San Luis Obispo County Board of Supervisors meeting the BOS approved surplus and emergency drought relief water totaling 2327 AF.
3)

Note: Deliveries are in acre feet. One acre foot = 325, 850 gallons or 43, 560 cubic feet. Safe yield is 8,730 acre feet.
"Year to Date" is January to present for State water, April to present for Lopez deliveries, and July to present for rainfall.

San Luis Obispo County Flood Control and Water District
Zone 3 - Lopez Project - Monthly Operations Report
October, 2014

	Lopez Water Deliveries													State Water Deliveries						Total Water Deliveries This Month
				Usage This Month				Usage April to Present						Requested		This Month		January to Present		
Contractor	Entl.	Surplus	Total	Entl.	Entl. %	Surplus	Surpls%	Entl.	Entl %	Surplus	Surpls%	Total	Total%	Annual	Month	Usage	%	Usage	%	
Arroyo Grand	2290	1176.00	3466.00	246.02	10.7%	0.00	0.0%	1701.46	74.3%	0.00	0.0%	1701.46	49.1%							246.02
Oceano CSD	303	156.00	459.00	35.75	11.8%	0.00	0.0%	299.45	98.8%	0.00	0.0%	299.45	65.2%	0	0	0.00	#Num!	0.00	#Num!	35.75
Grover Beach	800	411.00	1211.00	64.97	8.1%	0.00	0.0%	499.72	62.5%	0.00	0.0%	499.72	41.3%							64.97
Pismo Beach	892	458.20	1350.20	41.55	4.7%	114.27	24.9%	892.00	100.0%	114.27	24.9%	1006.27	74.5%	389.93	0	0.00	#Num!	303.00	77.7%	155.82
CSA 12	245	125.80	370.80	7.04	2.9%	0.00	0.0%	90.84	37.1%	0.00	0.0%	90.84	24.5%	47.2	7.6	7.73	101.7%	33.17	70.3%	14.77
San Miguelito														130	12	5.44	45.3%	83.56	64.3%	5.44
Total	**4530**	**2327.00**	**6857.00**	**395.33**	**8.7%**	**114.27**	**4.9%**	**3483.47**	**76.9%**	**114.27**	**4.9%**	**3597.74**	**52.5%**	**567.13**	**19.6**	**13.17**	**67.2%**	**419.73**	**74.0%**	**522.77**

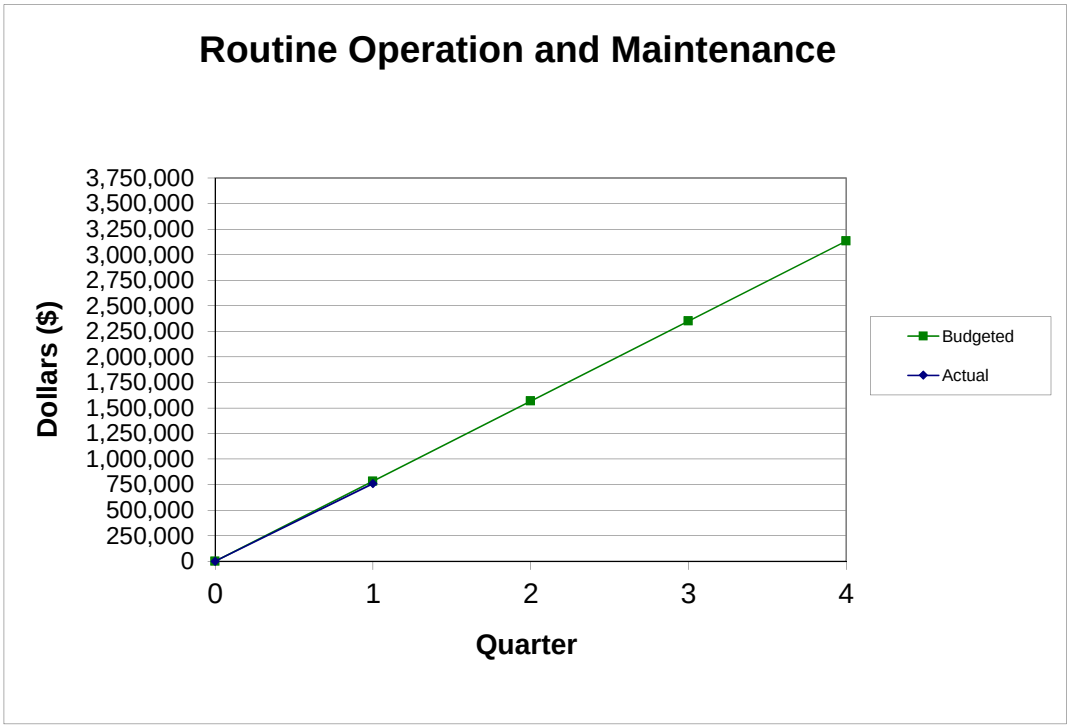




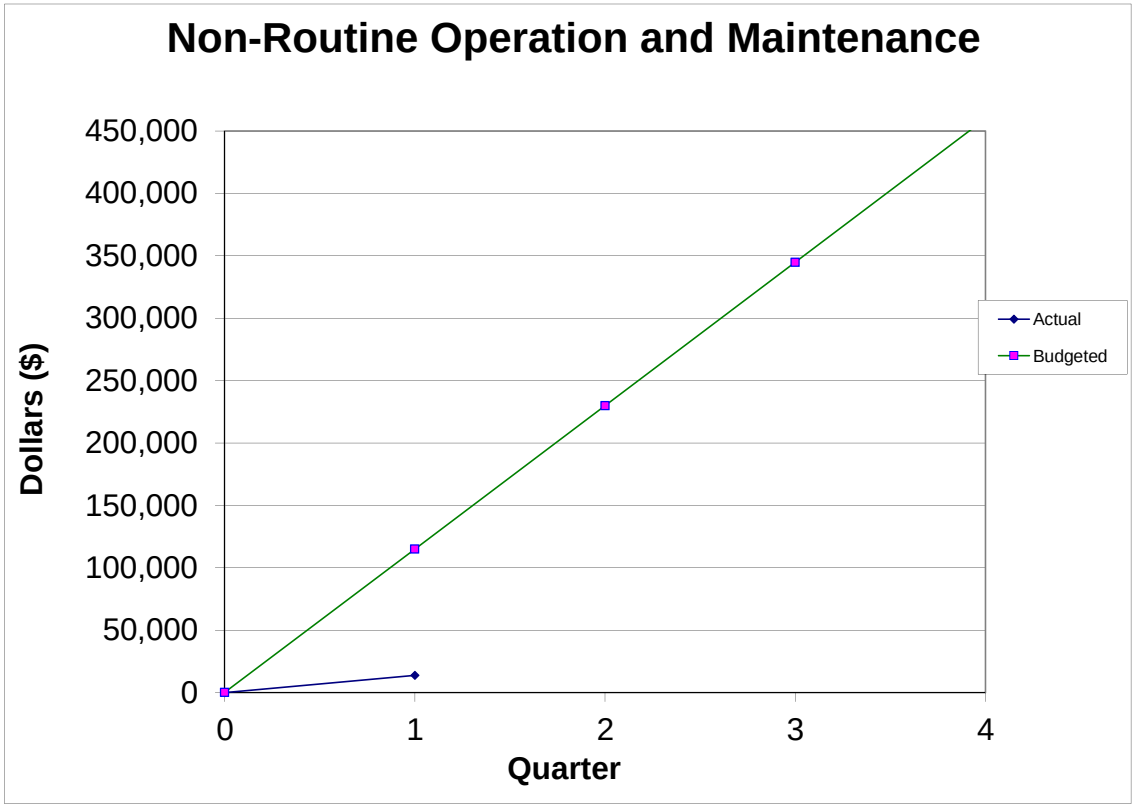
Lopez Dam Operations	This Month	Year to Date		
Lake Elevation (full at 522.37 feet)	482.97		Difference (feet)	-39.40
Storage (full at 49200 acre feet)	21150		% Full	43.0%
Rainfall	0	0.00		
Downstream Release (4200 acre feet/year)	345.08	2072.49		
Spillage (acre feet)	0	0.00		

Comments: 1) Oceano State Water to Canyon Crest via Arroyo Grande's Edna turn out. A total of 2.72 AF delivered to Canyon Crest was added to Oceano's State Water usage this month and 2.72 AF was subtracted from Arroyo Grande's usage this month.
2) At the August 19, 2014 San Luis Obispo County Board of Supervisors meeting the BOS approved surplus and emergency drought relief water totaling 2327 AF.
3)

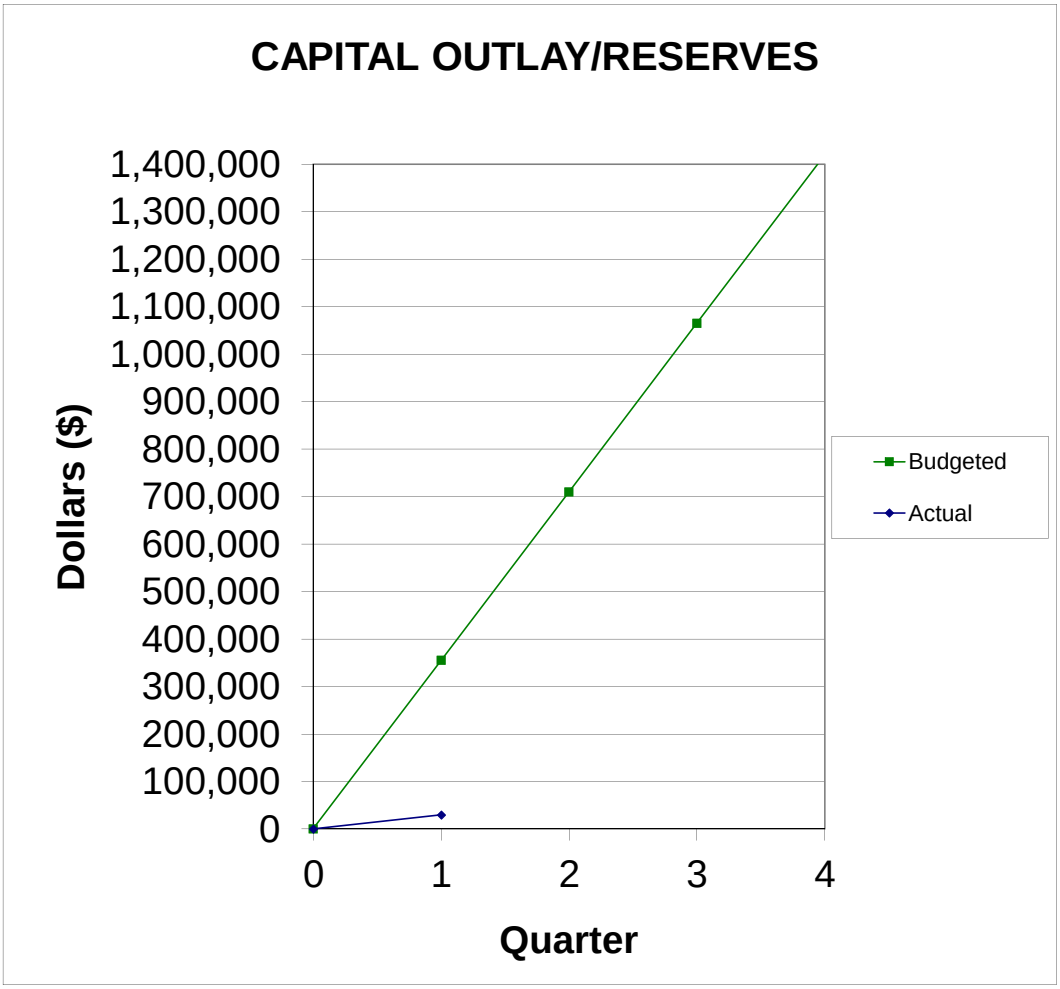
Note: Deliveries are in acre feet. One acre foot = 325, 850 gallons or 43, 560 cubic feet. Safe yield is 8,730 acre feet.
"Year to Date" is January to present for State water, April to present for Lopez deliveries, and July to present for rainfall.



O&M Routine Category	Total Budget	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	% Under/(Over) Total Budget
Labor and Overhead	1,929,904	458,866	-	-	-	458,866	76.22%
Chemicals - Water Treatment Plant	293,505	89,980	-	-	-	89,980	69.34%
Utilities - Water Treatment Plant	201,607	73,479	-	-	-	73,479	63.55%
Vendors - Water Treatment Plant	261,526	65,889	-	-	-	65,889	74.81%
Terminal	44,255	18,564	-	-	-	18,564	58.05%
Main Dam	90,383	18,606	-	-	-	18,606	79.41%
Other	312,102	35,209	-	-	-	35,209	88.72%
Totals O&M		760,592	-	-	-	760,592	
Total Budget	3,133,282	783,320	783,320	783,320	783,320	3,133,282	
Variance (over)/under Cumulative		22,729					
% Variance (over)/under Cumulative		3%					



Non Routine Category	Total Budget	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	% Under/(Over) Total Budget
Labor and Overhead	63,793	12,053	-	-	-	12,053	81.11%
Lopez Water/Water Rights /HCP	174,968	59	-	-	-	59	100.00%
Environmental Monitoring	-	(0)	-	-	-	(0)	Not bgted
DBP Rule	20,340	1,800	-	-	-	1,800	91.15%
Entitlement	199,890	-	-	-	-	-	100.00%
WQ Efforts - Non Schedule	-	-	-	-	-	-	Not bgted
WQ Efforts - Special Projects	-	-	-	-	-	-	100.00%
Other	584	-	-	-	-	-	Not bgted
Total Non Routine		13,912	-	-	-	13,912	
Total Budget	459,575	114,894	114,894	114,894	114,894	459,575	
Variance (over)/under Cumulative		100,981					
% Variance (over)/under Cumulative		88%					



Capital Outlay Project	Total Budget	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	% Under/(Over) Total Budget
Perimeter Fencing	200,566	6,683				6,683	96.67%
Lopez Turnouts SCADA System	360,486	13,245				13,245	96.33%
WTP Membrane Filtration Module Addition	-	192				192	#DIV/0!
WTP 6th Membrane Filtration Module Addition	822,619	9,623				9,623	98.83%
Other Captial Projects	36,123					-	100.00%
PY adjustment						-	
Total Capital Outlay		29,743	-	-	-	29,743	
Total Budget	1,419,794	354,948.50	354,948.50	354,949	354,949	1,419,794	
Variance (over)/under Cumulative		325,206					
% Variance (over)/under Cumulative		92%					

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

Dave Flynn, Interim Director

County Government Center, Room 207 • San Luis Obispo CA 93408 • (805) 781-5252

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November 20, 2014

MEMORANDUM

TO: Flood Control Zone 3 Advisory Committee

FROM: Jennifer Colvard, Accountant

VIA: John Diodati, Public Works Department Administrator

SUBJECT: Flood Control Zone 3 First Quarter Budget Status FY14/15

Recommendation

The item to be received and filed.

Discussion

Attached please find the First quarter budget versus actual results for the fiscal year 2014/15. Overall, expenditures are under budgeted levels by $449,000 or roughly a 36% savings.

Routine O&M shows a savings of 3% or $23,000. This is very close to budgeted levels in all areas at this point in time.

Non Routine O&M has savings of 88% or $101,000. This is primarily in the Lopez Water Rights/Habitat Conservation Plan (HCP) expenditures and Pipeline Valve Replacement/Pigging Entitlement. HCP Hydro geologic consultant interviews were conducted and the HCP consultant has been selected. Preliminary pigging design will begin 3rd quarter of FY14-15 with construction efforts scheduled in FY15-16 through FY17-18.

Capital Outlay experienced a savings of 92% or $325,000 from budgeted levels mainly in the following projects:

1. Perimeter Fencing – Due to an unanticipated delay in material delivery, construction started on November 10, 2014. Completion is expected in January 2015 with costs steady through the end of construction.

2. Lopez Turn-out SCADA – After the recent special TAC, design plans are progressing. Costs will remain steady during the year with peaks during construction/installation.

3. 6th Rack Filtration Module Addition – 20% of the Purchase Price ($113,386) has been paid to Pall in accordance with the contract. Costs will remain steady through FY14/15 year end with anticipated payments to Pall on the following schedule: 30% on/about 11/12/14; 40% on/about 4/22/15 and 10% on/about 5/22/15.

4. Lopez Computer Replacement Project: With Board approval anticipated on November 25, 2014, approved software and hardware purchases and installation will occur in December/January.

Other Agency Involvement/Impact

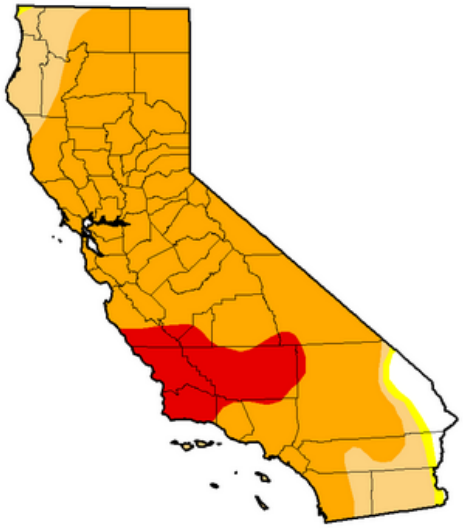
The agencies involved are City of Arroyo Grande, City of Grover Beach, City of Pismo Beach, Oceano Community Services District, County Service Area 12, subcontractors of CSA 12 include Port San Luis Harbor District and Avila Beach Community Services District.

Financial Consideration

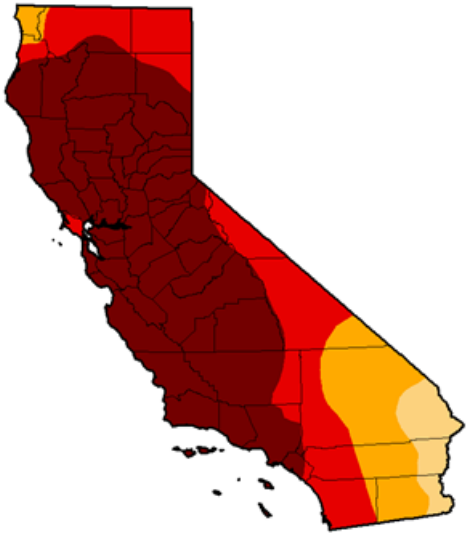
All agencies are current on their payments. Refunds due to agencies for FY 13/14 will be credited to the January 2015 billings.

U.S. DROUGHT MONITOR

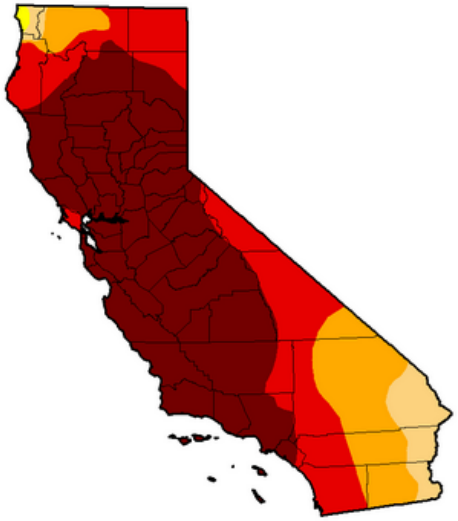
November 2013



September 2014



November 2014



Intensity:

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

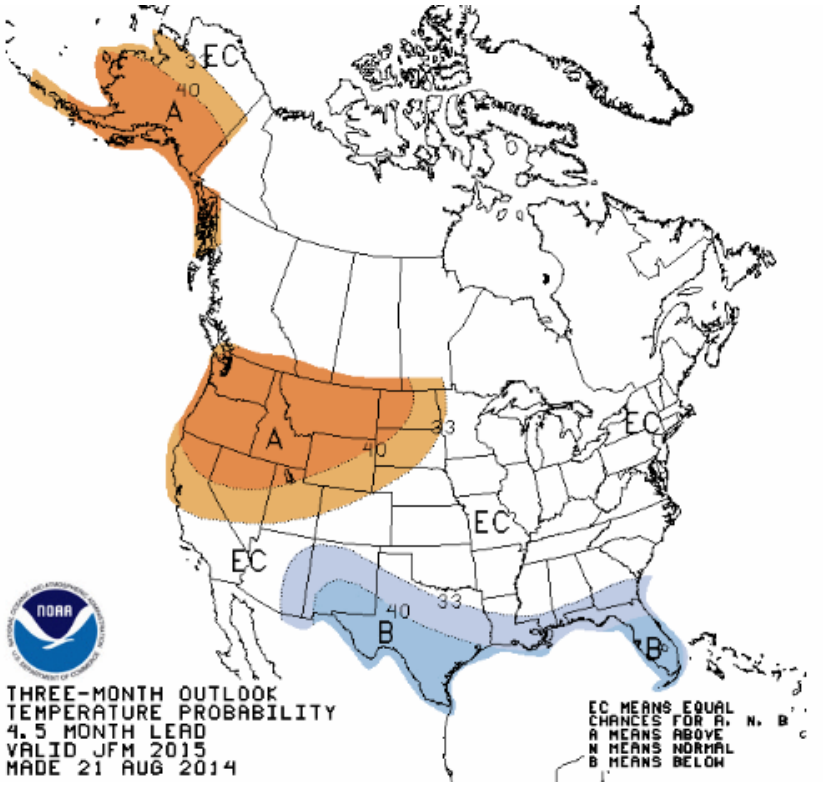
Permission to reproduce the map

If you reproduce the U.S. Drought Monitor map, please use this wording:

The U.S. Drought Monitor is jointly produced by the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. Map courtesy of NDMC-UNL.

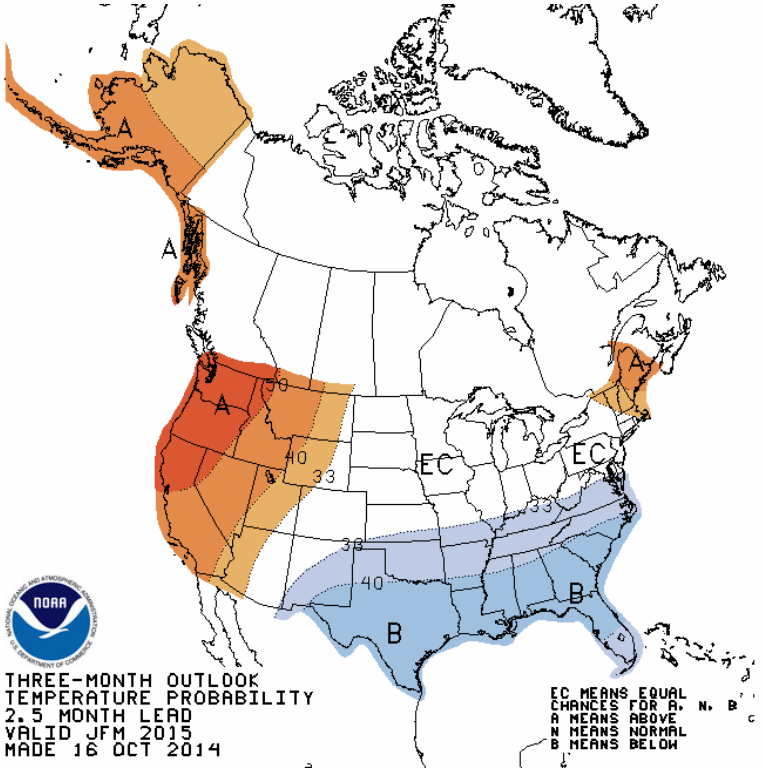
NOAA TEMPERATURE FORECAST

Jan, Feb, Mar



September Meeting

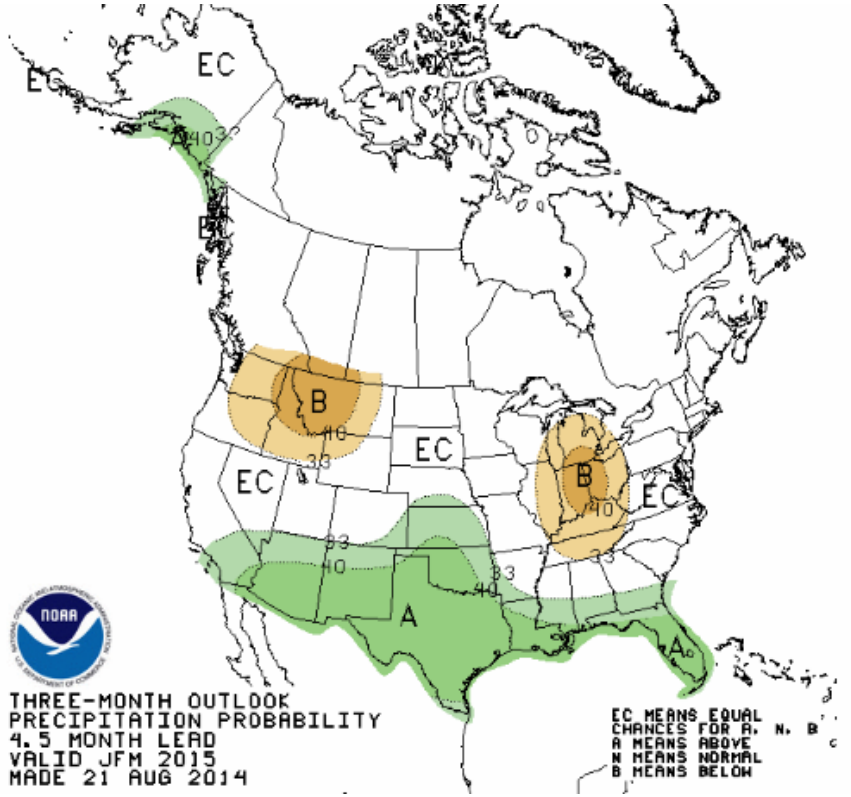
Jan, Feb, Mar



November Meeting

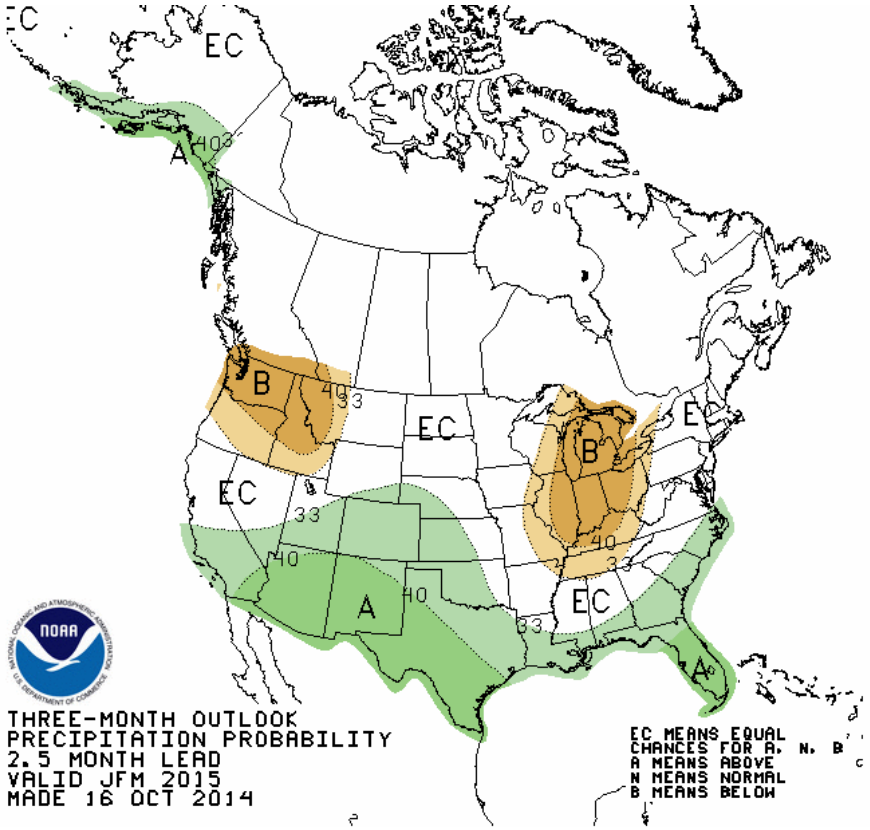
NOAA PRECIPITATION FORECAST

Jan, Feb, Mar



September Meeting

Jan, Feb, Mar



November Meeting

DRAFT

TO: **Zone 3 Advisory Committee**

FROM: **John Diodati, Secretary**

DATE: **November 20, 2014**

SUBJECT: **Approval of 2015 Meeting Calendar**

Purpose

To approve the meeting calendar for 2015

Discussion

Attached is the proposed meeting calendar for 2015. Per the by-laws, meetings are held the third Thursday of every other month. However, the locations shall be determined by the Committee. Consistent with the recommendation made the last few years, staff has proposed to have two Advisory Committee meetings in Oceano. It is also important to note that the first TAC meeting of the year is proposed to move due to the New Year holiday.

SAN LUIS OBISPO COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
ZONE 3 ADVISORY AND TECHNICAL ADVISORY COMMITTEES

2015 MEETING SCHEDULE

Date	Group	Location[1]	Purpose
Jan 8, 2015[2]	TAC[3]	Arroyo Grande, 10:00AM	Discuss anticipated budget items
Jan 15, 2015	Advisory Committee	Grover Beach, 6:30PM	Distribute proposed '13-14 budget; present 2nd quarter '12-13 budget
Feb 5, 2015	TAC	Arroyo Grande, 10:00AM	Present draft budget
Mar 5, 2015	TAC	Arroyo Grande, 10:00AM	Budget discussion/ recommendation; Proposed surplus water amount
Mar 19, 2015	Advisory Committee	Oceano CSD, 6:30PM	Present proposed '13-14 budget; endorse '13-14 budget; Declare surplus water
Apr 2, 2015	TAC	Arroyo Grande, 10:00AM	
May 7, 2015	TAC	Arroyo Grande, 10:00AM	
May 21, 2015	Advisory Committee	Pismo Beach, 6:30PM	3rd quarter budget status
Jun 4, 2015	TAC	Arroyo Grande, 10:00AM	
Jul 2, 2015	TAC	Arroyo Grande, 10:00AM	
Jul 16, 2015	Advisory Committee	Oceano CSD, 6:30PM	Officer Rotations
Aug 6, 2015	TAC	Arroyo Grande, 10:00AM	
Sep 35, 2015	TAC	Arroyo Grande, 10:00AM	Request water delivery schedule. Due Oct 1st
Sep 17, 2015	Advisory Committee	Grover Beach, 6:30PM	4th quarter budget status
Oct 1, 2015	TAC	Arroyo Grande, 10:00AM	
Nov 5, 2015	TAC	Arroyo Grande, 10:00AM	
Nov 19, 2015	Advisory Committee	Arroyo Grande, 6:30PM	1st quarter budget status
Dec 3, 2015	TAC	Arroyo Grande, 10:00AM	Distribute water delivery schedule by Jan 1st

[1] All locations noted are at City Hall or District Board chambers unless otherwise noted
[2] Moved due to New Year's Day holiday
[3] TAC - Technical Advisory Committee

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

County Government Center, Room 206 • San Luis Obispo CA 93408 • (805) 781-5252
Fax (805) 781-1229 email address: pwd@co.slo.ca.us

TO: Zone 3 Advisory Committee

FROM: Mark Hutchinson, Deputy Director

DATE: November 20, 2014

SUBJECT: Low Reservoir Response Plan Status

Recommendation:

1. Recommend that the Board of Supervisors of the San Luis Obispo County Flood Control and Water Conservation District adopt a resolution implementing the Low Reservoir Response Plan (LRRP) as reviewed and endorsed by the Zone 3 agencies.

Discussion

At your September 2014 meeting your committee heard a presentation on the contents and status of the LRRP. That presentation reported that a public review draft of the LRRP had been completed and that representatives of the agricultural community had reviewed and accepted the Plan. In response, your Committee recommended moving the LRRP forward for consideration by the individual City Councils and Governing Boards of the Zone 3 agencies. As of November 4, 2014, the Zone 3 agencies that have taken action to adopt resolutions supporting, endorsing, approving or endorsing the LRRP are:

October 14:	Avila Beach Community Services District
October 14:	City of Arroyo Grande
October 21:	City of Pismo Beach
October 28:	County of San Luis Obispo (CSA12)

Pending:

November 12:	Oceano Community Services District
November 17:	City of Grover Beach (Approved in concept on October 6)
December 16:	San Luis Obispo County Flood Control and Water Conservation District

The agencies that have approved or endorsed the LRRP have acted on the "Public Review Draft" of the LRRP as reviewed by your Advisory Committee on September 18; to date no agencies have requested changes in the draft. Copies of the individual resolutions are attached to this report.

It is important to note that a resolution adopted by the County Flood Control and Water Conservation District will be fundamentally different than the resolutions adopted by the Zone 3 member agencies because the Board sits on the other side of the water supply contracts. However, the result should be the same: implementation of the LRRP as described. For instance, in order to implement the LRRP the Board will need to reduce water supply entitlements as described in the water supply contracts, but cannot unilaterally change the way surplus water is calculated or offered. We expect that the Board will offer the full amount of surplus available; it will then fall to the agencies to request only the amount equal to the difference between their entitlements and the amount actually used. At the same time, we expect that the Board would use their authority under their Emergency Drought Proclamation to use "Emergency Drought Relief Water" to affect the surplus "carryover" provisions of the LRRP. Also, in order to keep pace with the adaptive management provisions of the LRRP it may be desirable for the Board to delegate certain responsibilities to the Director of Public Works. Action by the Board of Supervisors is scheduled for December 16, if your Advisory Committee recommends moving forward.

Attachments:

1. Public Review Draft LRRP
2. Resolution of the Avila Beach Community Services District (supporting)
3. Resolution of the City of Arroyo Grande (endorsing)
4. Resolution of the City of Pismo Beach (endorsing)
5. Resolution of the County of San Luis Obispo (CSA12) (endorsing)

Low Reservoir Response Plan- Public Review Draft

for the

San Luis Obispo County Flood Control and Water Conservation District Zone 3

October 6, 2014

Table of Contents

1 INTRODUCTION, PURPOSE AND PLAN ADOPTION

The Low Reservoir Response Plan (LRRP) describes a set of actions that the San Luis Obispo County Flood Control and Water Conservation District (District) Zone 3 will implement when the amount of water in storage within the Lopez Reservoir drops below 20,000 Acre-Feet (AF) provided that the District's Board of Supervisors has declared an emergency related to Zone 3. The purpose of the LRRP is to limit downstream releases and municipal diversions from Lopez Reservoir during periods of low reservoir storage (i.e. less than 20,000 AF) to preserve water within the reservoir, above the minimum pool level, for a minimum of 3 to 4 years under continuing drought conditions. The criteria for reducing municipal diversions and downstream releases are summarized in Section 3.

Droughts have unpredictable impacts on water supplies. The duration of droughts and the actual amount of rainfall and run-off during droughts can differ significantly. As a result, the LRRP has been developed to provide an initial set of prescribed actions combined with an adaptive management approach. The purpose of the LRRP is to act as the guiding document during drought emergencies, as outlined in the Interim Downstream Release Schedule (IDRS). The initial prescribed actions establish baseline actions, and several adaptive management scenarios are included so that actual hydrological conditions can be evaluated during a drought. In summary, ongoing evaluation of actual hydrological conditions is needed during a drought, and through the adaptive management approach, prescribed actions can be modified, if needed, so that the 3-4 year target can be achieved.

The District's Board of Supervisors (BOS) is responsible for final adoption of the LRRP. Prior to adoption by the Board of Supervisors, the following steps are necessary:

1. Development of the draft LRRP guided by the Zone 3 Technical Advisory Committee (TAC).
2. Review of the draft LRRP with Zone 3 agricultural stakeholders.
3. Consideration of policy direction that may be provided by any of the governing boards of the Zone 3 agencies as the draft LRRP is being developed.
4. Review and approval by the Zone 3 Advisory Committee (AC).
5. Formal approval by the governing boards of the Zone 3 member agencies, by resolution, with appropriate findings to address the following:
    a. The California Environmental Quality Act (CEQA).
    b. Emergency provisions that are unique and necessary to the LRRP, but which may differ from contract provisions that control Zone 3 operations and deliveries during normal operating conditions.
6. Final approval by the BOS.
7. Enacting the LRRP as described in this document and outlined in Appendix A.

2 BACKGROUND

Since completion of its construction in 1969, the Lopez reservoir has experienced extended periods of low reservoir inflow that have led to decreased storage levels within the lake. Analysis of historical storage data from Lopez Reservoir identified that the lowest storage water level (16,455 AF) within the reservoir

occurred in November of 1992. Figure 1 shows monthly storage levels within Lopez Reservoir since April 1969. Since 1992, there have been significant changes in dam operations, (e.g. Interim Downstream Release Schedule (IDRS) implementation) that affect the amount of water that is released and diverted from the reservoir on an annual basis. Modified operations and historic drought conditions have highlighted the need for evaluation of LRRP reduction scenarios.

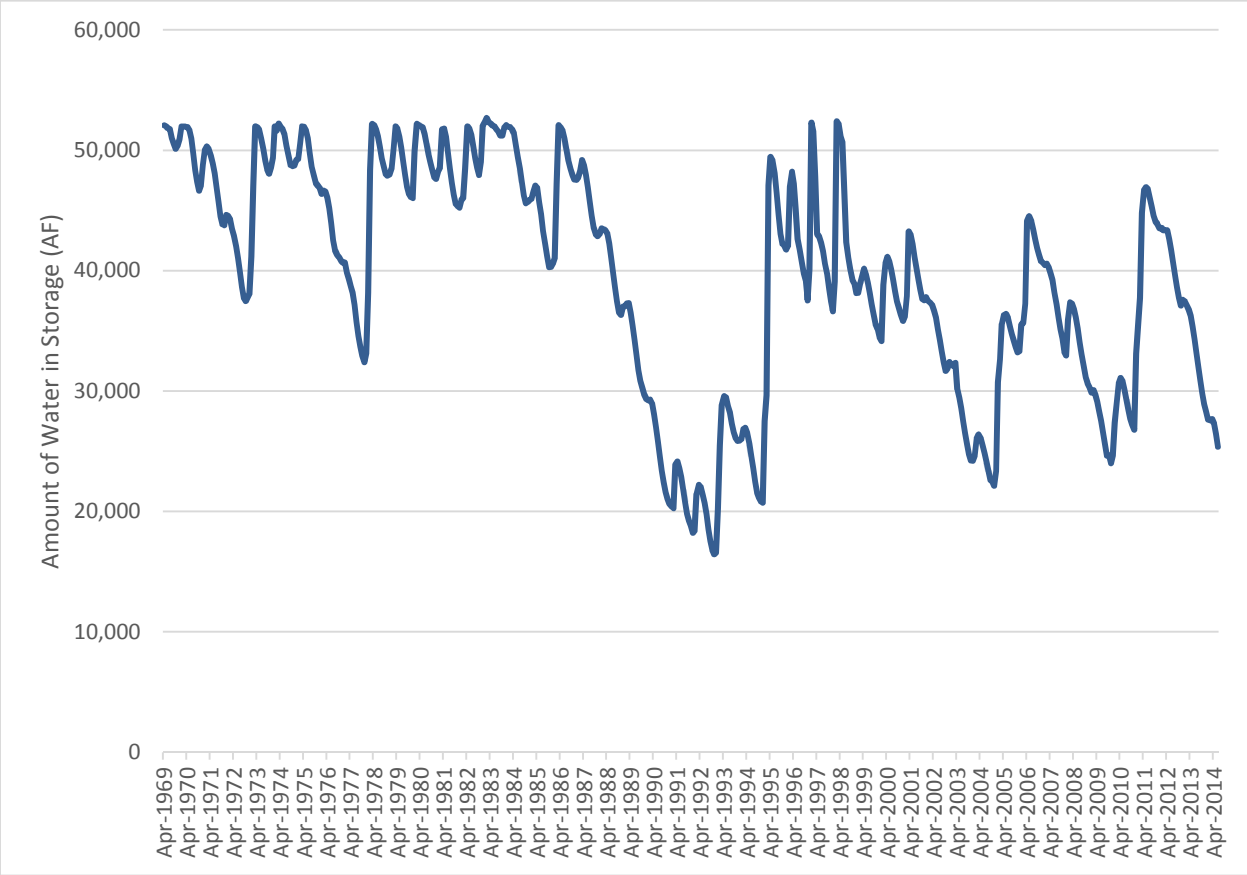


Figure 1. Lopez Reservoir Storage

3 LRRP ELEMENTS

3.1 ENACTING THE LRRP AND INITIAL PRESCRIBED ACTIONS

The LRRP is automatically enacted if the total volume of water in the Lopez Reservoir falls below 20,000 AF and the BOS has declared an emergency related to Zone 3. The initial prescribed actions, once the LRRP is enacted, are as follows:

- Reductions in entitlement water deliveries as set forth in Table 1; and
- Reductions in downstream releases as set forth in Table 2, with actual releases timed to best meet the needs of agricultural stakeholders and to address environmental requirements; and
- No new allocations of Surplus Water from unreleased downstream releases; and

- Extension of time that agencies can take delivery of existing unused water; throughout the duration that the Drought Emergency is in effect, subject to evaporation losses if the water is not used in the year originally allocated.

3.2 ADAPTIVE MANAGEMENT

To provide the District, the Zone 3 agencies and agricultural stakeholders with sufficient flexibility to adapt to changing drought conditions and to address the environmental requirements, the LRRP includes an adaptive management component that allows the initial prescribed actions to be modified and adapted to the specific drought conditions. The steps for modifying the initial prescribed actions are outlined below and are show in Appendix A.

1. The TAC will review several factors including the time of year that the LRRP is enacted, when the reservoir level drops to lower triggers, and Hydrologic Conditions including but not limited to: predicted climatic conditions; anticipated reservoir inflow; and the availability of the Zone 3 agencies' other water supplies.
2. If determined to be necessary, the TAC will make a recommendation to the AC on a strategy for modifying the initial prescribed actions, hereafter referred to as an Adaptive Management Strategy.
3. Upon review of the TAC's recommendation, the AC will vote to approve, deny, modify or continue consideration of the Adaptive Management Strategy for a period not to exceed 30 days, at which time the AC will act to approve, deny or modify. If approved by the AC, the Adaptive Management Strategy will be implemented 14 days following its approval. If the Adaptive Management Strategy is approved, denied, or modified by the AC, AC members, Zone 3 member agencies, and other 3rd parties in interest may appeal to the BOS, within 14 days. If no appeal is made to the BOS, the AC action will be final.
4. If appealed to the BOS, the BOS action shall be final.

3.3 REDUCTION & RECOVERY TRIGGERS

To provide the District, Zone 3 agencies and the agricultural stakeholders with an initial framework for water supply planning, Reduction & Recovery Triggers, tied to the amount of water within the reservoir, were developed for the LRRP. Under the initial prescribed actions the Reduction & Recovery Triggers were set for the following storage levels: 20,000; 15,000; 10,000; 5,000; and 4,000 AF. As the amount of water in the reservoir drops below or rises above these triggers, the TAC will review the hydrologic condition and if necessary, utilize adaptive management to modify municipal diversions and downstream releases to meet the objectives of the LRRP.

Example scenarios provided in Appendix B show how the reservoir would respond to the implementation of the initial prescribed actions and an alternate reduction strategy under various historical hydrological patterns.

3.4 MUNICIPAL DIVERSION REDUCTIONS

Upon enactment of the LRRP, the initial prescribed actions dictate that municipal diversions are to be reduced according to the reduction strategy described in Table 1, which includes Reduction Triggers, reduction percentages and resulting municipal diversions. This municipal diversion reduction strategy may be modified through adaptive management, following the protocol outlined in Section 3.2.

Table 1. Initial Prescribed Municipal Diversion Reduction Strategy

Amount of Water In Storage (AF)	Municipal Diversion Reduction	Municipal Diversion (AFY)[1]
20,000	0%	4,530
15,000	10%	4,077
10,000	20%	3,624
5,000	35%[2]	2,941
4,000	100%	0

3.5 DOWNSTREAM RELEASE REDUCTIONS

Upon enactment of the LRRP, the initial prescribed actions dictate that downstream releases are to be reduced according to the reduction strategy described in Table 2, which includes Reduction Triggers, reduction percentages and resulting downstream releases. The Initial Prescribed Downstream Release Reduction Strategy was developed through a collaborative process that included input from the District and agriculture and municipal stakeholders. The resulting downstream releases represent the maximum amount of water that can be released. The District will control the timing of the reduced releases to meet the needs of the agricultural stakeholders and to address environmental requirements. This downstream release reduction strategy may be modified through adaptive management, following the protocol outlined in Section 3.2.

[1] The actual amount of water diverted may vary as agencies extend the delivery of their Lopez Entitlement, as described in Section 3.6.

[2] The 35% reduction provides sufficient water to supply 55 gallons per capita per day (GPCD) for the estimated population of the Zone 3 agencies (47,696 in 2010 per the 2010 Zone 3 UWMP). 55 GPCD is the target residential indoor water usage standard used in California Department of Water Resource's 2010 UWMP Method 4 Guidelines.

Table 2. Initial Prescribed Downstream Release Reduction Strategy

Amount of Water In Storage (AF)	Downstream Release Reduction	Downstream Releases (AFY)[3]
20,000	9.5%	3,800
15,000	9.5%	3,800
10,000	75.6%	1,026
5,000	92.9%	300
4,000	100.0%	0

3.5.1 HCP Reduction Strategy

An alternate downstream reduction strategy that could be implemented through adaptive management includes the Habitat Conservation Plan (HCP) Reduction Strategy. Under the HCP Reduction Strategy, downstream releases would be reduced according criteria outlined in the proposed HCP Water Release Program for consecutive low inflow years. Under this strategy, downstream releases would be either 3 cfs or equal to the average inflow over the previous 14-day period, whichever is less.

3.6 EXTENDED DELIVERY PROVISIONS

Once the LRRP is enacted, and in order to promote conservation and a reduction in the demand on Zone 3 water, Zone 3 member agencies will be provided the ability to extend the time that they may have water delivered, while the BOS drought emergency is in effect. The following is how water allocations to Zone 3 member agencies will be determined at the beginning of each water year while the LRRP is in effect. It is important to note that during a water year, increases and decreases in allocations are possible as a result of adaptive management strategies.

1. At the end of each Water Year (WY) (March 31st), the amount of unused Lopez water from the previous WY will be calculated and documented for each member agency for later use.
2. On April 1st, the quantity of Entitlement Water for the new WY will be documented for each agency in accordance with the LRRP determinations. Unused water from the prior WY is subject to evaporation losses, which are further described in Section 3.6.1.

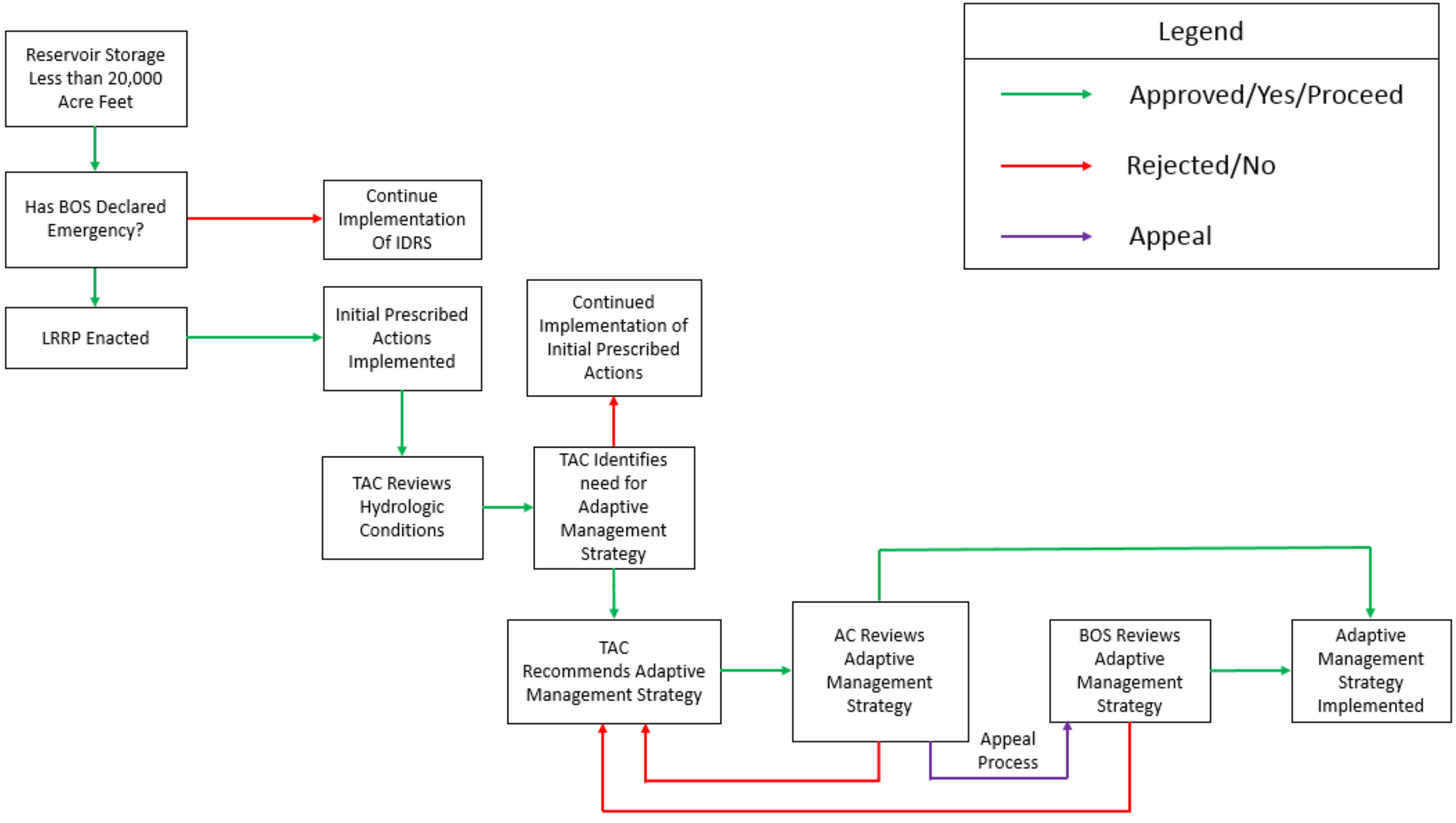
[3] These downstream releases represent the maximum amount of water that can be released. Actual releases may be less if releases can be reduced while still meeting the needs of the agricultural stakeholders and addressing the environmental requirements.

3.6.1 Evaporation Losses

While unused water from the prior WY is retained within the Lopez Reservoir, it is subject to evaporation losses. Evaporation losses are to be calculated quarterly and applied to the total amount of unused prior WY water retained by each agency at the end of the quarter. Evaporation losses will be calculated by comparing the surface area of the reservoir with the unused water against what the surface area would be if there were no unused water retained in the reservoir. Evaporation estimates from the District's weather station would then be applied to the difference in surface area to calculate the increased evaporation losses due to the storage of the unused water. The unused water evaporation losses will be subtracted from each agency's unused water at a rate proportional to the amount of unused water retained by each individual agency.

APPENDIX A. LRRP ENACTMENT & ADAPTIVE MANAGEMENT FLOW CHART

LRRP Enactment & Adaptive Management Flow Chart



A

APPENDIX B. REDUCTION STRATEGY EVALUATION

Scenario A-1-Water Year 1989/90 Inflow & Rainfall **Initial Prescribed Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	3,440	465	2,240	0%	4,530	3,800	-6,666	13,334
2	3,440	465	1,691	10%	4,077	3,800	-5,664	7,671
3	3,440	465	1,260	20%	3,624	1,026	-2,006	5,665
4	3,440	465	1,077	20%	3,624	1,026	-1,823	3,842

[1] Value assumed to be same as Water Year 1989/90 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are controlled by the Initial Prescribed Downstream Release Reduction Strategy, which was developed through a collaborative effort by the District and agriculture and municipal stakeholders.

Scenario A-2-Water Year 1989/90 Inflow & Rainfall **Potential Adaptive Management Scenario-HCP Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	3,440	465	2,240	0%	4,530	2,060	-4,926	15,074
2	3,440	465	1,808	0%	4,530	2,060	-4,493	10,582
3	3,440	465	1,494	10%	4,077	2,060	-3,726	6,856
4	3,440	465	1,188	20%	3,624	2,060	-2,968	3,888

[1] Value assumed to be same as Water Year 1989/90 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the amount of water in storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are assumed to be equivalent to a release rate of 3 cfs or 181 AF/Month or equal to the amount of inflow to the reservoir for that month, whichever is less. This scenario is based on the HCP Hydrologic Analyses report recommended release program provision that sets the maximum release at 3 cfs or the average inflow to the reservoir over the previous 14-day period, when the 3-year running average inflow to Lopez Reservoir is less than 26,190 AFY.

Scenario B-1- Water Year 2013/14
Inflow & Rainfall **Initial Prescribed Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	1,519	337	2,240	0%	4,530	3,800	-8,714	11,286
2	1,519	337	1,546	10%	4,077	3,800	-7,567	3,719
3	1,519	337	870	100%	0	0	986	4,705
4	1,519	337	980	35%	2,941	300	-2,364	2,340

[1] Value assumed to be same as Water Year 2013/2014 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are controlled by the Initial Prescribed Downstream Release Reduction Strategy, which was developed through a collaborative effort by the District and agriculture and municipal stakeholders.

Scenario B-2- Water Year 2013/14
Inflow & Rainfall **Potential Adaptive Management Scenario-HCP Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	1,519	337	2,240	0%	4,530	1,253	-6,167	13,833
2	1,519	337	1,725	10%	4,077	1,253	-5,199	8,633
3	1,519	337	1,341	20%	3,624	1,253	-4,362	4,272
4	1,519	337	933	35%	2,941	1,253	-3,271	1,001

[1] Value assumed to be same as Water Year 2013/2014 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the amount of water in storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are assumed to be equivalent to a release rate of 3 cfs or 181 AF/Month or equal to the amount of inflow to the reservoir for that month, whichever is less. This scenario is based on the HCP Hydrologic Analyses report recommended release program provision that sets the maximum release at 3 cfs or the average inflow to the reservoir over the previous 14-day period, when the 3-year running average inflow to Lopez Reservoir is less than 26,190 AFY.

Scenario C-1- Average of Water Years 2012/13-2013/14 Inflow & Rainfall **Initial Prescribed Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	2,176	806	2,240	0%	4,530	3,800	-7,588	12,412
2	2,176	806	1,627	10%	4,077	3,800	-6,522	5,890
3	2,176	806	1,099	20%	3,624	1,026	-2,767	3,123
4	2,176	806	798	100%	0	0	2,184	5,307

[1] Value assumed to be same as 2 year average from Water Year 2012/13 through 2013/2014 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are controlled by the Initial Prescribed Downstream Release Reduction Strategy, which was developed through a collaborative effort by the District and agriculture and municipal stakeholders.

Scenario C-2- Average of Water Years 2012/13-2013/14 Inflow & Rainfall **Potential Adaptive Management Scenario-HCP Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	2,176	806	2,240	0%	4,530	1,435	-5,223	14,777
2	2,176	806	1,788	10%	4,077	1,435	-4,318	10,458
3	2,176	806	1,484	10%	4,077	1,435	-4,014	6,444
4	2,176	806	1,151	20%	3,624	1,435	-3,228	3,216

[1] Value assumed to be same as 2 year average from Water Year 2012/13 through 2013/2014 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the amount of water in storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are assumed to be equivalent to a release rate of 3 cfs or 181 AF/Month or equal to the amount of inflow to the reservoir for that month, whichever is less. This scenario is based on the HCP Hydrologic Analyses report recommended release program provision that sets the maximum release at 3 cfs or the average inflow to the reservoir over the previous 14-day period, when the 3-year running average inflow to Lopez Reservoir is less than 26,190 AFY.

Scenario D-1- Average of Water Years 2011/12-2013/14 Inflow & Rainfall **Initial Prescribed Reduction Strategy**

Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	4,305	827	2,240	0%	4,530	3,800	-5,438	14,562
2	4,305	827	1,774	10%	4,077	3,800	-4,519	10,044
3	4,305	827	1,453	10%	4,077	3,800	-4,197	5,847
4	4,305	827	1,095	20%	3,624	1,026	-612	5,235

[1] Value assumed to be same as 3 year average from Water Year 2011/12 through 2013/2014 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are controlled by the Initial Prescribed Downstream Release Reduction Strategy, which was developed through a collaborative effort by the District and agriculture and municipal stakeholders.

Scenario D-2- Average of Water Years 2011/12-2013/14 Inflow & Rainfall **Potential Adaptive Management Scenario-HCP Reduction Strategy**

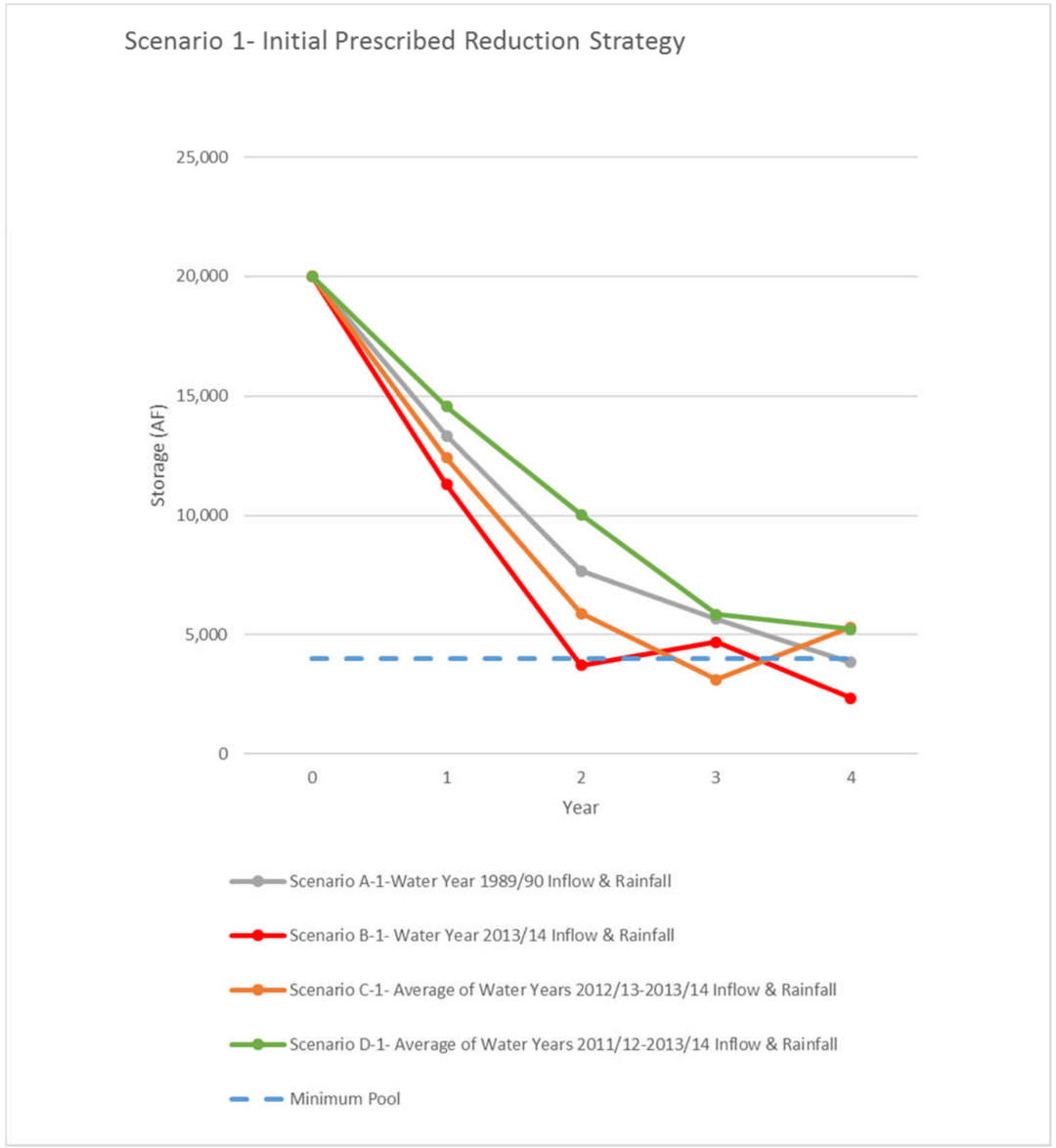
Year	Inflow[1]	Rainfall [1]	Evap. [2]	Municipal Reduction [3]	Municipal Diversions [3]	Downstream Releases [4]	Change in Storage	Total Storage
0								20,000
1	4,305	827	2,240	0%	4,530	1,681	-3,318	16,682
2	4,305	827	1,878	0%	4,530	1,681	-2,956	13,726
3	4,305	827	1,718	10%	4,077	1,681	-2,343	11,383
4	4,305	827	1,553	10%	4,077	1,681	-2,178	9,205

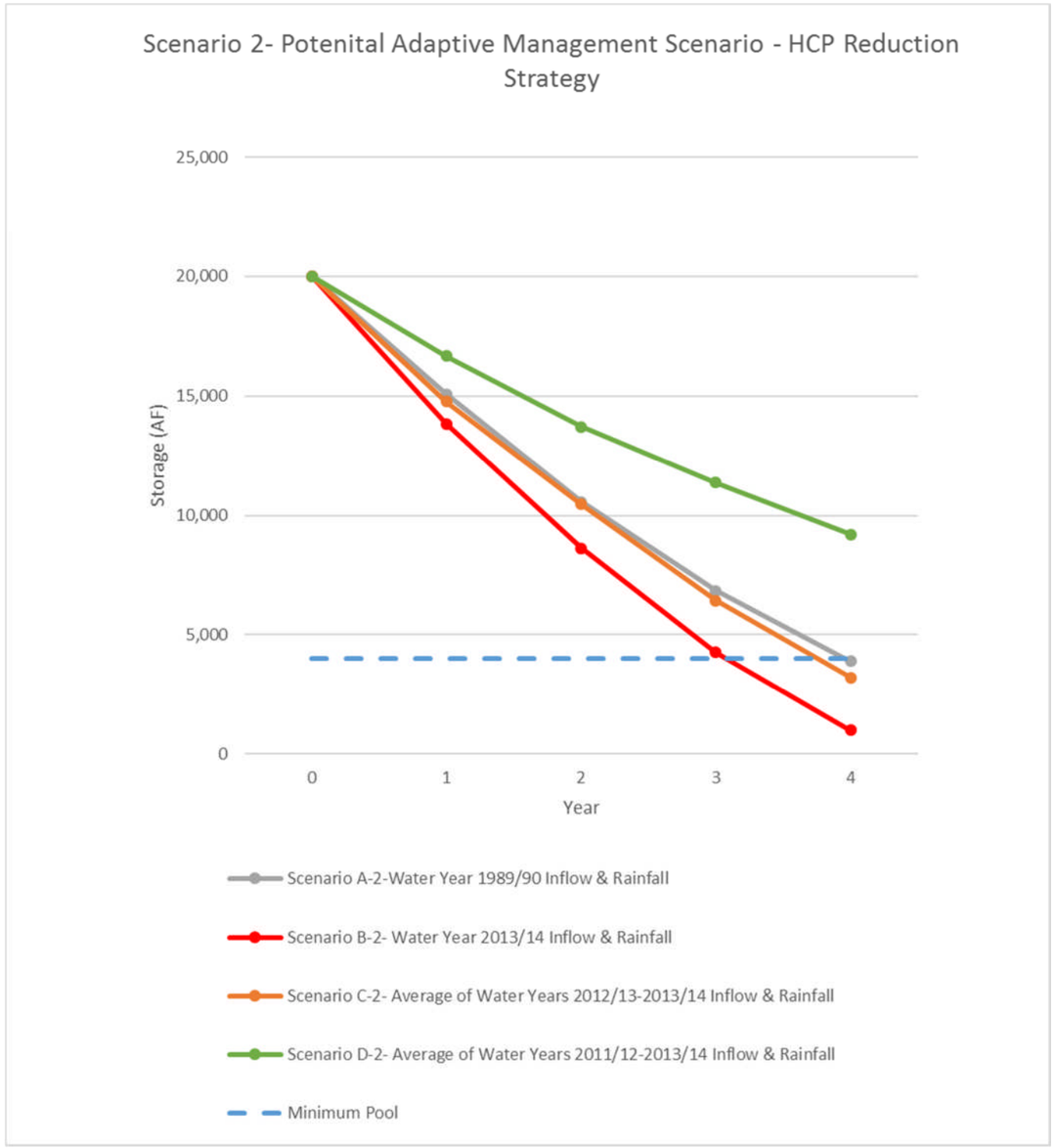
[1] Value assumed to be same as 3 year average from Water Year 2011/12 through 2013/2014 measurement.

[2] Evaporation assumed to equal the maximum historical value between April 1970 and March 2014 (76.25 in/yr in WY 1971-72) applied to the previous year's total lake surface area. Lake surface area estimated based on a lookup table provided by the County, which uses a 2002 survey to correlate reservoir elevation, storage, and surface area.

[3] Municipal diversions are assumed to be the same as the contract amount for the duration of the first year. Years following are dependent upon the amount of water in storage at the end of the water year and municipal reduction assumptions.

[4] Release volumes are assumed to be equivalent to a release rate of 3 cfs or 181 AF/Month or equal to the amount of inflow to the reservoir for that month, whichever is less. This scenario is based on the HCP Hydrologic Analyses report recommended release program provision that sets the maximum release at 3 cfs or the average inflow to the reservoir over the previous 14-day period, when the 3-year running average inflow to Lopez Reservoir is less than 26,190 AFY.


Scenario 1- Initial Prescribed Reduction Strategy
25,000
20,000
15,000
10,000
5,000
0
Storage (AF)
0
1
2
3
4
Year
Scenario A-1-Water Year 1989/90 Inflow & Rainfall
Scenario B-1- Water Year 2013/14 Inflow & Rainfall
Scenario C-1- Average of Water Years 2012/13-2013/14 Inflow & Rainfall
Scenario D-1- Average of Water Years 2011/12-2013/14 Inflow & Rainfall
Minimum Pool


Scenario 2- Potenital Adaptive Management Scenario - HCP Reduction Strategy
25,000
20,000
15,000
10,000
5,000
0
Storage (AF)
0
1
2
3
4
Year
Scenario A-2-Water Year 1989/90 Inflow & Rainfall
Scenario B-2- Water Year 2013/14 Inflow & Rainfall
Scenario C-2- Average of Water Years 2012/13-2013/14 Inflow & Rainfall
Scenario D-2- Average of Water Years 2011/12-2013/14 Inflow & Rainfall
Minimum Pool

AVILA BEACH COMMUNITY SERVICES DISTRICT
RESOLUTION 2014-19

A Resolution of the Board of Directors of the Avila Beach Community Services District Supporting the San Luis Obispo County Flood Control and Water Conservation District Zone 3, Low Reservoir Response Plan (LRRP)

WHEREAS, the Board of Directors of the Avila Beach Community Services District (herein referred to as "District") is a member of the San Luis Obispo County Flood Control and Water Conservation District Zone 3, and has an interest in conservation of water stored in Lopez Reservoir; and

WHEREAS, the District has determined that implementation of a County wide plan for water conservation is desirable for the entire area; and

WHEAREAS, the agencies, as part of the Zone 3 Lopez Water Supply Project, have developed a "Low Reservoir Response Plan" (LRRP) to best manage the water supply from Lopez during a sustained drought condition; and

WHEREAS, the "Low Reservoir Response Plan" (LRRP) calls for proactive measures to be implemented by Zone 3 and the contracting agencies; and

WHEREAS, the District finds that the actions adopted by this Resolution are exempt from the California Environmental Quality Act pursuant to Public Resources Code and CEQA guidelines. The Board of Directors further finds that the Rules and regulations adopted by this Resolution constitute general policy and rule making which are not deemed to be projects pursuant to Public Resource Code;

NOW, THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED by the Board of Directors of the Avila Beach Community Services District, San Luis Obispo County, California, as follows:

That the Board of Directors supports the actions necessary to update and improve the Low Reservoir Response Plan (LRRP), and finds that these actions are exempt from CEQA.

Upon Motion of Director Waldron, seconded by Director Rowe, and on the following roll call vote to wit:

AYES:	Waldron, Rowe, Janowicz, Kelley
NOES:	None
ABSENT:	Richards
ABSTAINING;	None

The foregoing Resolution was passed and adopted this 14th day of October 2014.

ATTEST:

Peter Kelley, President

Kathryn Richardson, General Manager

RESOLUTION NO. 4633

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ARROYO GRANDE ENDORSING THE LOW RESERVOIR RESPONSE PLAN FOR THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT ZONE 3

WHEREAS, the San Luis Obispo County Flood Control and Water Conservation District (District) constructed, owns and operates Lopez Dam and Reservoir, the Lopez Water Treatment Facilities, and the Lopez Water Conveyance System; and,

WHEREAS, said facilities are owned and operated by the District on behalf of the District's "Zone 3," which is also known as the Lopez Water Supply System; and,

WHEREAS, the District has Agreements with the Cities of Arroyo Grande, Grover Beach and Pismo Beach, the Oceano Community Services District, and San Luis Obispo County Service Area No. 12 (collectively known as the Zone 3 Member Agencies) for delivery of potable water from the Lopez Water Supply to Zone 3 Member Agencies; and,

WHEREAS, the District also releases water from Lopez Reservoir into Arroyo Grande creek for the benefit of agriculture and other beneficiaries downstream of Lopez Dam, which are hereinafter referred to as "Downstream Releases," and,

WHEREAS, the Agreements between the District and Zone 3 Member Agencies include numerous provisions establishing the rights and responsibilities of the District and the Zone 3 Member Agencies; and

WHEREAS, Article 4 of said Agreements provide that the District can curtail delivery of water to Zone 3 Member Agencies in situations including but not limited to drought conditions; and

WHEREAS, the District and the Zone 3 Member Agencies have prepared a Low Reservoir Response Plan (LRRP) for the purpose of providing greater certainty regarding the quantities of water that will be delivered to Zone 3 Member Agencies during droughts and other emergencies when less than 20,000 acre feet of water is stored in Lopez Lake; and

WHEREAS, the LRRP has been developed in consultation with the Zone 3 Advisory Committee and representatives of local agricultural operations; and

WHEREAS, the LRRP includes prescribed actions and an adaptive management approach that together will help to ensure that the needs of the Zone 3 Member Agencies and the beneficiaries of Downstream Releases are met during droughts and other emergencies; and

WHEREAS, during droughts and other emergencies, the LRRP provides incentives for water conservation by the Zone 3 Member Agencies by extending the period of time that the Zone 3 Member Agencies can use water that has been allocated to them in accordance with the Agreements and/or as provided in the LRRP; and

WHEREAS, during droughts and other emergencies, the LRRP considers the needs of agriculture and other downstream beneficiaries by prescribing a reduction in water that is allocated to Zone 3 Member Agencies by eliminating "Surplus Water" allocations to Zone 3 Member Agencies, that pursuant to the Agreements, would otherwise result from Downstream Releases; and

WHEREAS, the adaptive management approach in the LRRP provides the best mechanism to manage the Lopez Water Supply during droughts and other emergencies where conditions can change depending on hydrological and other conditions that persist during droughts and other emergencies; and

WHEREAS, the City Council has reviewed the project in compliance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and the Arroyo Grande Rules and Procedures for Implementation of CEQA and has found and determined that the project is exempt per pursuant to Section 21169 and CEQA Guidelines, section 15261 in that the storage and annual release of water for various uses is part of the ongoing operation of the reservoir; and CEQA Section 21080 (b)(5) and CEQA Guidelines Section 15269(c) in that the project the endorsement of the LLRP is a specific action necessary to prevent or mitigate an emergency, and

WHEREAS, it is in the public interest that the LRRP is endorsed.

NOW THEREFORE BE IT RESOLVED, that the City Council of the City of Arroyo Grande does hereby:

1. Endorse and recommend adoption of the Lopez Low Reservoir Response Plan for the San Luis Obispo County Flood Control and Water Conservation District Zone 3

On motion of Council Member Costello, seconded by Council Member Barneich, and on the following roll call vote, to wit:

AYES: Council Members Costello, Barneich, Brown, Guthrie, and Mayor Ferrara
NOES: None
ABSENT: None

the foregoing Resolution was passed and adopted this 14th day of October 2014.

TONY FERRARA, MAYOR

ATTEST:

KELLY WETMORE, CITY CLERK

APPROVED AS TO CONTENT:

STEVEN ADAMS, CITY MANAGER

APPROVED AS TO FORM:

TIMOTHY J. CARMEL, CITY ATTORNEY

OFFICIAL CERTIFICATION

I, KELLY WETMORE, City Clerk of the City of Arroyo Grande, County of San Luis Obispo, State of California, do hereby certify under penalty of perjury, that the attached Resolution No. 4633 was passed and adopted at a Regular meeting of the City Council of the City of Arroyo Grande on the 14th day of October, 2014.

WITNESS my hand and the Seal of the City of Arroyo Grande affixed this 17th day of October, 2014.

Kelly Wetmore

KELLY WETMORE, CITY CLERK

RESOLUTION NO. R-2014-113

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PISMO BEACH ENDORSING THE LAKE LOPEZ LOW RESERVOIR RESPONSE PLAN (LRRP) FOR THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT (DISTRICT)

WHEREAS, in 2006, the District prepared an Interim Downstream Release Schedule (IDRS) to provide a plan for managing downstream releases from Lopez Dam; and

WHEREAS, included in the IDRS was a Low Reservoir Response Plan (LRRP) consisting of a methodology to assess near term reservoir levels and a set of actions that could be taken to mitigate the impacts of low reservoir levels; and

WHEREAS, in response to the current drought the Zone 3 Technical Advisory Committee (TAC) has reviewed the original LRRP along with several different rainfall and reservoir inflow scenarios; and

WHEREAS, to provide the Zone 3 agencies, agricultural stakeholders and the District flexibility to adapt to changing drought conditions the LRRP allows for adaptive management that allows the initial prescribed actions to be modified to address the specific drought conditions being experienced; and

WHEREAS, the Zone 3 Advisory Committee is scheduled to review the final draft LRRP and a CEQA Notice of Exemption in early November and the San Luis Obispo County Board of Supervisors is tentatively scheduled to consider approval of the LRRP on December 2, 2014.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Pismo Beach hereby endorses the Lake Lopez Low Reservoir Response Plan (LRRP) for the San Luis Obispo County Flood Control and Water Conservation District (District).

UPON MOTION OF Council Member Vardas, seconded by Council Member Reiss the foregoing resolution was adopted by the City Council of the City of Pismo Beach this 21st day of October 2014, by the following vote:

AYES: **5 Council Members Vardas, Reiss, Howell, Waage, Higginbotham**
NOES: **0**
ABSENT: **0**
ABSTAIN: **0**

Approved:

Shelly Higginbotham

Shelly Higginbotham
Mayor

Attest:

Elaina Cano

Elaina Cano, CMC
City Clerk

IN THE BOARD OF SUPERVISORS

County of San Luis Obispo, State of California

_____day _____, 20___

PRESENT: Supervisors

ABSENT:

RESOLUTION NO.

RESOLUTION ENDORSING POLICIES AND PROCEDURES SET FORTH IN THE LOW RESERVOIR RESPONSE PLAN FOR THE SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT ZONE 3

The following Resolution is now offered and read:

WHEREAS, the San Luis Obispo County Flood Control and Water Conservation District ("District") constructed, owns and operates the Lopez Dam and Reservoir, the Lopez Water Treatment Facilities, and the Lopez Water Conveyance System; and

WHEREAS, the District has agreements with the Cities of Arroyo Grande, Grover Beach and Pismo Beach, the Oceano Community Services District and San Luis Obispo County (on behalf of County Service Area No. 12) (collectively, "Zone 3 Member Agencies") for delivery of water from the Lopez Reservoir to the Zone 3 Member Agencies (collectively, "Water Supply Agreements"); and

WHEREAS, San Luis Obispo County Service Area No. 12 serves areas within and around the community of Avila Beach and is under the authority of the San Luis Obispo County Board of Supervisors; and

WHEREAS, the District also releases water from the Lopez Reservoir into Arroyo Grande Creek for the benefit of agriculture and other beneficiaries downstream of Lopez Dam, which are hereinafter referred to as "Downstream Releases;" and

WHEREAS, the Water Supply Agreements include numerous provisions establishing the rights and responsibilities of the District and the Zone 3 Member Agencies; and

WHEREAS, Article 4 of the Water Supply Agreements provide that the District can curtail delivery of water to Zone 3 Member Agencies in situations, including but not limited to, drought conditions; and

WHEREAS, on March 11, 2014, the San Luis Obispo County Board of Supervisors proclaimed a local emergency for the entire County due to exceptional drought conditions; and

WHEREAS, the District and the Zone 3 Member Agencies have prepared a Low Reservoir Response Plan (LRRP) for the purpose of providing greater certainty regarding the quantities of water that will be delivered to the Zone 3 Member Agencies during the current and future droughts and other emergencies when less than 20,000 acre feet of water is stored in the Lopez Reservoir; and

WHEREAS, the LRRP has been developed in consultation with the Zone 3 Advisory Committee and representatives of local agricultural operations; and

WHEREAS, the LRRP includes prescribed actions and an adaptive management approach that together will help to ensure that the needs of the Zone 3 Member Agencies and the beneficiaries of Downstream Releases are met during droughts and other emergencies; and

WHEREAS, during droughts and other emergencies, the LRRP provides incentives for water conservation by the Zone 3 Member Agencies by extending the period in time that the Zone 3 Member Agencies can use water that has been allocated to them in accordance with the Water Supply Agreements and/or as provided in the LRRP; and

WHEREAS, during droughts and other emergencies, the LRRP considers the needs of agriculture and other downstream beneficiaries by prescribing a reduction in water that is allocated to the Zone 3 Member Agencies by eliminating “Surplus Water” allocations to Zone 3 Member Agencies, that pursuant to the Water Supply Agreements, would otherwise result from Downstream Releases; and

WHEREAS, the adaptive management approach in the LRRP provides a reasonable mechanism to manage the Lopez Water Supply during droughts and other emergencies where conditions can change depending on hydrological and other conditions that persist during droughts and other emergencies; and

WHEREAS, it is in the public interest that policies and procedures set forth in the LRRP be implemented.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the Board of Supervisors of San Luis Obispo County, State of California, as follows:

1. That the County, on behalf of County Service Area No. 12, endorses the policies and procedures set forth in the Lopez Low Reservoir Response Plan for the San Luis Obispo County Flood Control and Water Conservation District, including the policy pursuant to which the Zone 3 Agencies will only request an amount of “Surplus Water” attributable to their unused entitlements.

2. That the action of endorsing the policies and procedures set forth in the Lopez Low Reservoir Response Plan for the San Luis Obispo County Flood Control and Water Conservation District is exempt from the California Environmental Quality Act ("CEQA") pursuant to CEQA Section 21169 and CEQA Guidelines Section 15261(a) in that the storage and annual release of water for various uses is part of the ongoing operation of the Lopez Reservoir; and CEQA Section 21080(b)(5) and CEQA Guidelines Section 15269(c) in that the endorsement of the policies and procedures set forth in the Lopez Low Reservoir Response Plan for the San Luis Obispo County Flood Control and Water Conservation District is a specific action necessary to prevent or mitigate an emergency.

Upon motion of Supervisor _____, seconded by Supervisor _____, and on the following roll call vote, to-wit:

AYES:
NOES:
ABSENT:
ABSTAINING:

The foregoing resolution is hereby ADOPTED on the ____ day of _____, 20___.

_____
Chairperson, Board of Supervisors

ATTEST:

_____
Clerk of the Board of Supervisors

[SEAL]

APPROVED AS TO FORM AND LEGAL EFFECT:

RITA L. NEAL
County Counsel

By: _____
Deputy County Counsel

Dated: October 17, 2014

STATE OF CALIFORNIA, ss.
County of San Luis Obispo,

I, _____, County Clerk and ex-officio Clerk of the Board of Supervisors, in and for the County of San Luis Obispo, State of California, do hereby certify the foregoing to be a full, true and correct copy of an order made by the Board of Supervisors, as the same appears spread upon their minute book.

WITNESS my hand and the seal of said Board of Supervisors, affixed this _____ day of _____, 20 _____.

_____
County Clerk and Ex-Officio Clerk of the Board of Supervisors

(SEAL)

By _____
Deputy Clerk.

SAN LUIS OBISPO COUNTY
DEPARTMENT OF PUBLIC WORKS

County Government Center, Room 206 • San Luis Obispo CA 93408 • (805) 781-5252

Fax (805) 781-1229 email address: pwd@co.slo.ca.us

TO: Zone 3 Advisory Committee

FROM: Katie Drexhage, Environmental Resource Specialist

DATE: November 20, 2014

SUBJECT: Lopez Water Project HCP Status Updates

Hydrogeologic Services Consultant Contract for Endorsement

In July of 2013, your committee adopted a District staff recommendation to move the Habitat Conservation Plan effort forward with a re-formed project team, including circulating a Request for Proposals for hydrologic tasks including modeling, hydrogeologic analysis, and production of a Water Availability Analysis (WAA).

In response to the Request for Proposals prepared and distributed by the District in February of 2014, ECORP Consulting, Inc. was selected as the most qualified to conduct hydrogeologic services analyses required in accordance with California Water Code Section 1260(k). After reviewing the firm's qualifications, discussing the project with their staff, and meeting with their project managers, it is evident that ECORP Consulting, Inc. is qualified to conduct the necessary hydrogeologic processes, including developing alternative downstream release programs, analyzing the hydrogeologic effects of downstream release alternatives, and preparation of a WAA.

Attached is ECORP's revised scope, cost estimate and schedule for endorsement by your committee. If your Committee endorses ECORP to conduct the hydrogeologic services, the District will bring a contract to the Board of Supervisors for final approval. Approval of the recommended actions will result in the continuation of work on the Habitat Conservation Plan and revised water rights permit for the Lopez Water Project.

H.T. Harvey and Associates Update

H.T. Harvey provided an updated cost estimate which includes updated charge rates for staff, changes in personnel, and additional tasks and staff hours to coordinate with ECORP to complete the WAA. The cost estimate falls within the original budget and contingency. H.T. Harvey's contract will be amended to reflect these changes.

Attachments:

ECORP's revised scope, cost estimate, and schedule

Proposal for
Lopez Water Project Habitat Conservation Plan
Hydrogeologic Services (PS-#1248)

Cost Proposal and Project Assumptions

23 September 2014

Prepared for:

San Luis Obispo County
General Services Agency
1087 Santa Rosa Street
San Luis Obispo, California 93408

Prepared by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

CONTENTS

LIST OF FIGURES

INTRODUCTION

In response to your request, ECORP Consulting is pleased to provide this detailed scope of work, cost estimate and proposed schedule. Within this submittal are two sections. Section 1 provides discussion of the following tasks:

- Task 1: Review existing model data and verify, update, and develop OASIS simulation model
- Task 2: Water Availability Analysis
- Task 3: Downstream Release Program Alternatives
- Task 4: Project Oversight, Coordination, and Strategic Planning

The fourth task is not something the District specifically requested, but is important to the success of this effort. Section 2 provides a discussion of optional tasks that may be needed to complete the project.

Enclosed are a detailed cost estimate and proposed schedule for the required tasks included in Section 1.

SECTION 1 - SCOPE OF WORK

ECORP Consulting, Inc. (ECORP) will be the prime contractor on this assignment with ECORP's Michael J. Preszler, serving as the Project Manager and principal point of contact. Mr. Preszler will report directly to the County of San Luis Obispo and San Luis Obispo County Flood Control and Water Conservation District (District) with respect to all matters related to this work effort. Jeff Meyer of ECORP will be the Technical Director for this assignment. Our team of noted experts is available to begin work immediately. ECORP will be supported by two subcontractors, Cleath-Harris Geologists, Inc. and Hollenbeck Consulting. All work is planned to be completed within the nine-month schedule assumed for this assignment, following written authorization to proceed. Key project team members included in this work effort are listed below.

Team Member	Responsibility
Mr. Michael J. Preszler, P.E.	Project Manager, Water/Hydropower
Mr. Jeff Meyer, P.E.	Technical Director
Jared Emery, P.E.	Simulation Modeling / Hydrology
Timothy S. Cleath, PG, CHG, CEG	Groundwater / Local Agriculture
Spencer J. Harris, PG, CHG	Groundwater
John Hollenbeck, P.E.	QA/QC – Strategy Support
Paul Cylinder, Ph.D.[1]	HCP Technical Advisor
Terry Adelsbach[1]	HCP Technical Advisor
Chris Stabenfeldt[1]	CEQA Technical Advisor

In addition to the project team members listed above, we will employ support staff to perform necessary project functions such as word processing, information transfer, and document/graphics development.

ECORP will initiate the technical and strategic consulting services to support the District in connection with the Lopez Water Project HCP Hydrogeological Services by carrying out the tasks described below. This scope of work and cost proposal is in response to the Request for Proposals PS-#1248 dated February 14, 2014. We have developed our scope of work and cost proposal based on our current assumptions about and understanding of the project, the directions provided by the

[1] Potential Additional Services, see Section 2

District in its RFP, and our professional assessment of the most effective approach based on our experience.

Task 1: Review existing model data and verify, update, and develop OASIS simulation model

Task 1.1 Review of existing models and available documentation

ECORP proposes to use the OASIS model, as it is a superior tool to the RiverWare™ model for addressing the Districts needs on this project. Information contained in the existing spreadsheet and RiverWare™ modeling system will be utilized to the maximum extent possible. Information and data will be extracted for use in the OASIS model development to accurately represent the Lopez Lake operations. A draft simulation modeling schematic created using the OASIS software package is illustrated in Figure 1. The finalization of this simulation modeling schematic is an early task in the development of the technical approach for the HCP analysis.

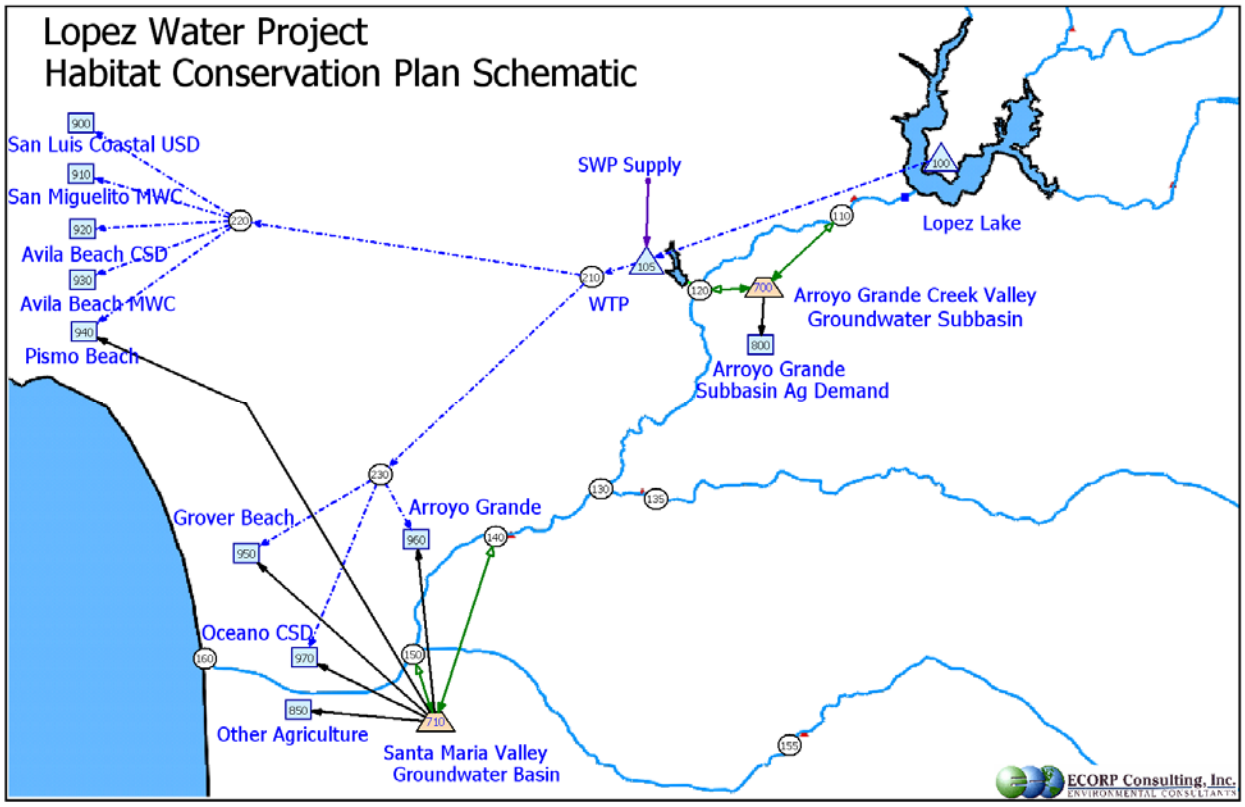


Figure 1 - OASIS Modeling Platform Draft Schematic for the Lopez Water Project HCP

The OASIS modeling platform is extremely flexible and modular and in addition to the HCP project, could be used by the District for multiple future applications, including testing of drought policy, determining feasibility of potential water sales, and operations forecasting and optimization. The flexibility of the platform allows for expansion of the model to include other District water resources and facilities or changes to existing facilities such as pipeline capacities or increases in reservoir storage.

Task 1.2 Review reservoir data and extend hydrology

The existing operations model uses a hydrologic dataset from 1969-2004. The mean-daily hydrologic dataset will be extended an additional nine years (1969-2013), using the recent reservoir operations

data. Preliminary review of the existing modeling tools indicates a potential error in the method used to create the 1969-2004 inflow dataset. This task includes review and revision, if necessary, of the original hydrologic dataset. The result of the efforts completed under Task 1.2 is the creation of a 1969-2013 hydrology dataset on a daily time step.

Task 1.3 Review and coordinate information with stakeholders

Under this task, ECORP will engage stakeholders in the development of the simulation model. This process is used to correctly reflect stakeholders' usage in the formulation of the demand dataset. In addition, we will interview project operators to identify operational nuances and procedures that should be reflected in the modeling. While engaged with the stakeholders, we will work with them to prepare performance measures that can be reviewed to compare alternative operational regimes.

Task 1.4 Develop OASIS simulation model of system and Baseline study

Using the information and data obtained from the existing model review, stakeholder interviews, and the extended hydrologic dataset, ECORP will develop an OASIS model application of the Zone 3 system. The model output will be compared to the recent historic data for validation. This first scenario will serve as the Baseline description of existing system to which all alternatives will be compared. We are sensitive to potential differences in federal and State regulatory agency interpretations of what constitutes baseline conditions and will work with the project team and the agencies to ensure full understanding.

Task 1.5 Prepare documentation of model assumptions

The Baseline study methodology, assumptions, and results will be documented for District review and use. Documentation will include operating policies, permits, licenses and agreements, current facilities, and current levels of demand.

Task 1 Deliverables

- Baseline model results
- Model documentation

Task 2: Water Availability Analysis

Task 2.1 Project Approach and Objectives

ECORP will conduct a Water Availability Analysis (WAA) in accordance with SWRCB practices for submittal to the SWRCB, and for use in the hydrology, water quality, and project operational impact analysis. Our analysis will start with documenting projected water needs. Much of this information has been developed in the past based on information contained in the *Water Resources Development and Management Plan, 2008* (Water Plan). Water needs will be documented for the build-out demand.

Next, we will determine the impaired and unimpaired streamflow over a 45-year study period (historic years 1969 through 2013) by evaluating effects resulting from higher priority direct diversion water rights (value of water right and not actual water use), higher priority storage water rights, documented riparian water rights, and instream flow requirements. This analysis will include a discussion of the cumulative effects of all water diversions in the watershed.

It is advantageous to finalize the downstream release program prior to completion of the WAA. Therefore, this process will be somewhat iterative as we move through the negotiations. The Project Manager and Technical Director will prepare for and attend a two-hour meeting with State Water Resources Control Board (SWRCB) staff to discuss specific details associated with the pending water rights filing application.

Lastly, the WAA will include an estimation of water supply in wet, average, and dry water years in support of CEQA and NEPA review. Supply analysis may utilize correlation techniques using historic streamflow and precipitation data, or other acceptable methods depending on available hydrologic data. A comparison of supply and demand for the 45-year study period will be completed to verify that water is available under the water rights applications for appropriation.

In addition to crafting the necessary information to support the WAA required by the SWRCB, it is anticipated that this work effort will be used for environmental analysis of the Arroyo Grande Creek watershed potentially affected by the project.

Task 2.2 System Description

ECORP will provide a technical description of the pending water rights applications. This description will include the use of Lopez Lake storage facilities. Direct diversion from the Arroyo Grande riparian water users will be discussed. The total maximum diversion and re-diversion of water from project sources will be described, including the maximum volume and timing of supplemental water required, if any. Our team will describe the project facilities, including development of maps illustrating the project and place of use and a description of the points of take. This system description will be based on existing information.

Task 2.3 Modeling of system

ECORP will develop procedures, criteria, and assumptions used to determine availability of water from project sources to meet Zone 3 water supply needs. The primary tool for this task is the OASIS model of the project developed in Task 1. In addition, this task will allow development of operating criteria and assumptions. The operation assumptions will be based on the base case operation for the historic years 1969 through 2013 period. ECORP will demonstrate that this period of record is adequate for this study. This includes reservoir releases, direct diversion, and rate of take. The strategy employed in determination of the WAA will be documented.

Task 2.4 Effects of HCP on agricultural and municipal groundwater supply

ECORP will conduct land use and well survey/inventory between the dam and the ocean to identify areas where agricultural and municipal wells tap zones receiving recharge from Arroyo Grande Creek, the fields/water systems they serve, and their estimated historical production. The survey will include research and field verification.

Task 2.5 Draft Technical Report for Submittal to SWRCB

The WAA will be summarized in a Draft technical report (Draft Water Availability Analysis) suitable for submittal to the SWRCB. This draft document will be circulated to appropriate parties, including the District's legal counsel, for review and comment.

Task 2.6 Final Technical Report for Submittal to SWRCB

ECORP will incorporate and address each of the comments and suggested changes to the Draft Water Availability Analysis. This will include text changes and may also include changes to graphics/maps and other illustrations. Once comments have been incorporated, the Final WAA will be prepared and made ready for submittal to the SWRCB. This task will include a complete cover-to-cover technical review by the Project Manager and Technical Director.

Task 2 Deliverables

- Draft Water Availability Analysis – digital file
- Final Water Availability Analysis – digital file and three (3) hard copies

Task 3: Downstream Release Program Alternatives

It is anticipated that up to four (4) Lopez Lake water release alternatives will be considered and analyzed for water operations to support biological analyses and decisions by the District. This task will use the model developed in Task 1 to evaluate downstream release alternatives. Tasks 3.1 to 3.3 describe three (3) alternatives that will be used to begin the process; the fourth alternative is the Baseline (see Task 1.4).

The OASIS modeling platform is capable of generating tables and graphs immediately following model execution. Performance measures can be developed to identify if a scenario performs better or worse than any other scenario relative to specific performance objectives. As an example, Lopez Lake storage and delivery might be an indicator of the success or failure of a downstream flow alternative to meet project goals. These performance measures will be developed prior to alternative development to help identify critical elements. All effects will be measured from the Baseline study developed in Task 1.4.

Task 3.1 Develop Technical Input to Evaluate HCP Alternatives

ECORP will compile information on the sources of inflow and outflow within the Arroyo Grande subbasin and the area of the Santa Maria basin where inventory wells are located. Using this information, the team will analyze the relationship between reservoir releases and groundwater availability and lay the groundwork for a more in-depth review of potential water supply impacts in sufficient detail to support the preparation of environmental documents.

Task 3.2 Develop Operate to Water Rights Alternative

ECORP will evaluate an Operate to Water Rights alternative in two steps. For step one, Lopez Lake and municipal demands will be "removed" from the simulation model. This will allow estimation of the unimpaired flow of Arroyo Creek representing the quantity and timing of water available for downstream riparian diverters. In step two, the Lopez Lake Project's simulated operation will be evaluated using the downstream deliveries to agricultural users determined in step one. The resulting evaluation will illustrate project operations under existing water rights.

Task 3.3 Develop Best Habitat Case Alternative

ECORP will work with the District and other members of the project team to develop the Best Habitat Case alternative using the priority system built into the OASIS model. In the Best Habitat Case Alternative, competing goals include meeting habitat requirements of steelhead and other aquatic species, supporting riparian habitat, meeting agricultural demands, meeting municipal demands, preserving minimum carryover storage in Lopez Lake, and meeting downstream flow requirements. Priority weighting of agricultural demands would have the highest weighting as they are the most senior in terms of water rights (these rights will be determined from the analysis of the Operate to Water Rights Alternative).

As municipal contracts are inviolate, meeting those demands would receive the next highest weighting. Meeting downstream flow targets would receive a lower weighting. It is likely that storage weighting would have the lowest weighting; however, carryover storage is very important in planning for operations for subsequent years. ECORP will work with the District to determine the level of acceptable risk to accept in drawing down the reservoir. ECORP will support the District in making these decisions and potentially addressing District policy for operating the reservoir.

Task 3.4 Develop HCP Alternative

Based on the Baseline, Operate to Water Rights alternative, and Best Habitat Case alternative described above and using the power of the OASIS modeling tool, ECORP will work with the project

team to develop the HCP Alternative. We anticipate that the HCP Alternative will fall somewhere between the Operate to Water Rights Alternative and the Best Habitat Case Alternative. The OASIS modeling platform with developed performance measures will be used to test operational scenarios to reach the optimal solution for operations in balancing fishery and supply needs. From such model outputs, the user can quickly identify the effects of each scenario. We plan to use methods such as these to develop the HCP Alternative in an efficient and transparent process that engages the District, agencies, and stakeholders. This HCP Alternative may actually be several iterations leading to a negotiated settlement.

Task 3 Deliverables

- Model results
- Technical memo of assumptions

Task 4: Project Oversight, Coordination, and Strategic Planning

Task 4.1 Overall Project Coordination

4.1.1 Project Management and Coordinate Task Activities

The Project Manager will, over the duration of the project (nine months), undertake ongoing management and oversight of all project activities. This will require detailed coordination with our two sub-consultant firms represented, where appropriate, by their Technical Leaders and close interaction with the Technical Director. Activities under this subtask are assumed to include schedule development and review, progress monitoring, technical collaboration, personnel/staff planning, budgetary oversight, and ongoing liaison with the District.

4.1.2 District Kick-Off and Coordination Meetings

Over the nine-month duration of the project assignment , the Project Manager and Technical Director will prepare for and attend up to three (3) two-hour coordination meetings with the District, held in San Luis Obispo County. As the first of these three meetings, we plan to start the project with a kick-off meeting to introduce team members, establish communication protocols, and begin to gather data to support model construction. The remaining two coordination meetings would be scheduled to provide a venue for discussion on topics including, but not necessarily limited to, the implementation of the strategic approach, interagency/stakeholder liaison, key issues, project definition, potential alternatives, hydrologic modeling, water availability, and SWRCB liaison. These would be ad hoc meetings, and scheduled at mutually agreed times as specific needs arise.

4.1.3 TAC Meetings

The Project Director and Technical Director will attend up to five (5) Technical Advisory Meetings (TAC) meetings assumed to be held in San Luis Obispo. It is assumed that the TAC meetings will serve as a forum for broad issues discussion related to the HCP process and the Lopez Water Project HCP Hydrogeologic Services throughout this effort.

4.1.4 Prepare 9 Monthly Progress Reports

The Project Director will prepare nine (9) monthly progress reports for submittal to the District. These reports will capture the activities of the ECORP project team over the past month. They will include summaries of all meetings undertaken, technical progress, key analytical assumptions made, any preliminary analyses completed, identification of problems or issues, recommended actions, and a summary of the next month's anticipated activities.

Task 4.2 Strategic Planning

4.2.1 Develop Project Approach

The project approach, stemming from discussions and input from the Coordination Meetings (see Subtask 4.1.2 above), will be developed by the Project Director and Technical Director with input from the various Technical Leaders where necessary. This will be an essential early element of the project, as it will guide the overall development of the analysis.

4.2.2 SWRCB Water Rights Application Briefing Meeting

The Project Director and Technical Director will prepare for and attend a 2-hour meeting with SWRCB staff to discuss specific details associated with the pending water rights filing application.

Task 4 Deliverables

- Monthly progress reports (up to 9 reports) - electronic files via email
- Summary of meeting outcomes and action items

SECTION 2 - POTENTIAL ADDITIONAL SERVICES

This section provides brief descriptions of optional additional tasks that ECORP could perform in support of the District. These tasks are not included in ECORP's proposed scope of work, schedule, or cost estimate. On the District's request, ECORP could provide more detailed task descriptions and a cost estimate for each of these optional additional tasks.

Additional ECORP Recommended Task: Modeling

Several other alternative simulation evaluations may be necessary to develop the draft and final HCP release program. ECORP could support this process by providing modeling expertise. We would use the Computer Aided Negotiation (CAN) process to develop the release program. Once the internal team understands the limits of the project operation, flow proposals can be developed.

Alternative Task 1 Habitat Conservation Plan (HCP) Support

ECORP professionals are highly experienced in the preparation of HCPs and, in particular, HCPs involving fisheries and flow issues.

HCPs that involve actions resulting in changes to flow in riverine systems require close coordination between the hydrogeologic experts using physical models and the fisheries, wildlife, and riparian biologists who will assess biological effects. Under this optional task, ECORP hydrogeologic experts will work with H.T. Harvey biologists to ensure that they have the information necessary to assess impacts of alternatives on fish and wildlife species covered under the HCP. Various aspects of flow are important to fish habitat and riparian vegetation including rate of flow, volume within the channel, frequency and duration of floodplain inundation, and temperature. Information generated by the hydrologic model will provide daily flows for each water year type based on the configuration and operation of the system under the each of the Downstream Release Program alternatives.

To support the assessment of fish habitat within the channel and floodplain, ECORP would obtain existing cross-sectional data on the channel and floodplain at representative sites for reaches of Arroyo Grande Creek. Existing habitat data subdivide the creek into ten reaches. If necessary, new cross-sectional data would be collected. This channel morphologic information combined with the flow model results will allow for the estimates of channel volume and floodplain inundation at different times of year, in different water year types, and under different alternatives.

Water temperature, particularly during the spring, summer, and fall is an important factor influencing habitat quality and availability for steelhead. A temperature model could be applied to the flow data to assess temperature changes under the various alternatives using the existing temperature data for Arroyo Grande Creek and the reservoir to calibrate the model. While temperature models can be used to assess potential effects on steelhead habitat, past field monitoring data and current understanding indicated that temperature may not be limiting in this system.

Effects on riparian habitat and the wildlife that use this habitat are typically assessed based on the frequency and duration of floodplain inundation and groundwater levels within the riparian zone. Inundation is important to the reproduction of riparian trees and shrubs from seed and groundwater levels are important to the survival of adult trees and shrubs. Riparian cover ("shaded riverine habitat") is a key factor in maintaining appropriate water temperatures for steelhead. The analysis of effects on riparian habitat will be based on known or estimated groundwater depths in the riparian zone under existing conditions and projected changes in groundwater resulting from different operational alternatives.

Existing flow conditions and channel configuration in Arroyo Grande Creek are generally not conducive to red-legged frog because of the lack of deep pool habitat. In addition, introduced predators adversely affect red-legged frog populations. While different operational alternatives may affect the deep pool habitat need by red-legged frog, restoration of such habitat could be designed and implemented based on whichever flow regime alternative is selected.

Alternative Task 2 CEQA/NEPA Support

ECORP Consulting provides comprehensive, multi-disciplinary management of environmental impact documentation projects, as required by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). CEQA documentation is required for projects directly undertaken by a state, regional, or local public agency or are supported by a public agency through funding or granting of a permit or other entitlement. Similarly, NEPA documentation is required for projects directly undertaken by a federal public agency or supported by a federal public agency through funding or granting of a permit, HCP, or other entitlement. Some projects have involvement by both federal and state/local public agencies and require joint CEQA/NEPA documents.

ECORP provides agencies with the expertise to determine the appropriate CEQA or NEPA document for each project, from exemptions to Environmental Impact Reports/Statements. Working with other ECORP departments and specialty subcontractors, we also provide the technical studies necessary to support the environmental determinations. The CEQA/NEPA process relies on the development of a project description. In this case, the project is the HCP, which still needs to be negotiated. Knowing that CEQA and NEPA will be triggered through this process, consideration should be given to potential future conditions. This will be particularly important when negotiating the downstream release program. Any downstream release program should account for the future conditions so that when demands are at build-out levels, the District can still meet the release program objectives without violation.

With regard to the hydrogeologic services, potential future conditions must be evaluated to satisfy the requirements of CEQA and NEPA. For example, two possible future scenarios may be:

- Existing facilities with future build-out level of demand
- Lopez Lake Dam raise with future level of demand

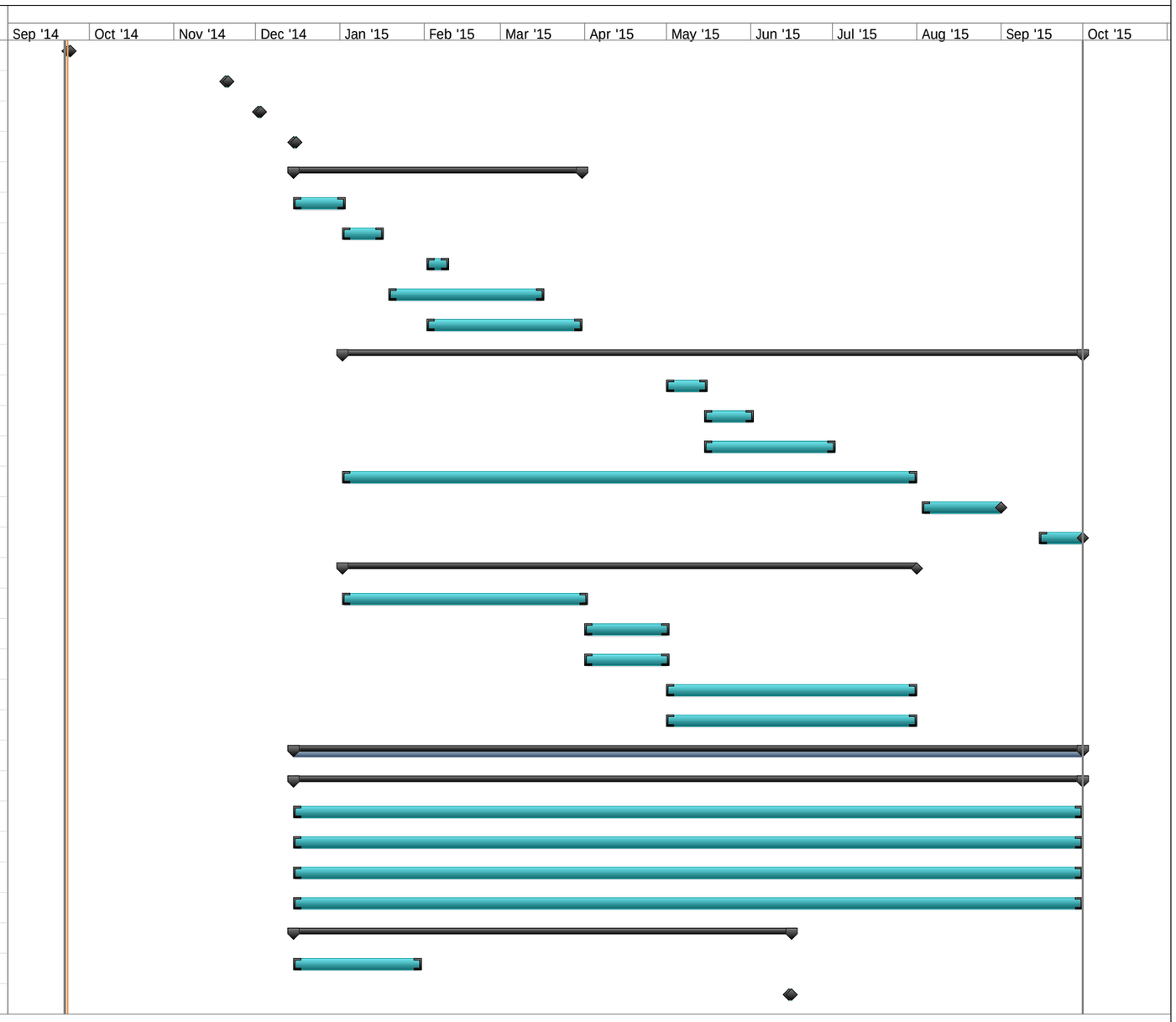
There may be others as well. In support of the CEQA/NEPA process, we will assume that three future levels scenarios must be evaluated.

SECTION 3 - PROJECT SCHEDULE

The ECORP team anticipates a total project timeline of approximately nine months to complete this effort. Major project milestones are noted in the schedule on the following page.

Schedule - September 23, 2014
Lopez Water Project Habitat Conservation Plan Hydrogeologic Services
Submitted to San Luis Obispo County Flood Control and Waer Conservation District
By: ECORP Consulting, Inc.

ID	Task Name	Duration	Start	Finish
1	**Cost and Scope Submittal**	1 day	Tue 9/23/14	Tue 9/23/14
2	**Advisory Committee Approval**	1 day	Thu 11/20/14	Thu 11/20/14
3	**Board of Supervisors Approval**	1 day	Tue 12/2/14	Tue 12/2/14
4	**Notice to Proceed**	1 day	Mon 12/15/14	Mon 12/15/14
5	**Task 1.0 - Reservoir Model Peer Review and Update**	**76 days**	**Mon 12/15/14**	**Mon 3/30/15**
6	1.1 - Review of Existing Models and Available Documentation	15 days	Mon 12/15/14	Fri 1/2/15
7	1.2 - Review Reservoir Data and Extend Hydrology	11 days	Fri 1/2/15	Fri 1/16/15
8	1.3 - Review and Coordinate Information with Stakeholders	6 days	Mon 2/2/15	Mon 2/9/15
9	1.4 - Develop OASIS Simulation Model of System and Baseline Study	41 days	Mon 1/19/15	Mon 3/16/15
10	1.5 - Prepare Documentation of Model Assumptions	41 days	Mon 2/2/15	Mon 3/30/15
11	**Task 2.0 - Water Availability Analysis**	**194 days**	**Fri 1/2/15**	**Wed 9/30/15**
12	2.1 - Project Approach and Objectives	11 days	Fri 5/1/15	Fri 5/15/15
13	2.2 - System Description	12 days	Fri 5/15/15	Mon 6/1/15
14	2.3 - Modeling of System	34 days	Fri 5/15/15	Wed 7/1/15
15	2.4 - Effects of HCP on Agricultural and Municipal Groundwater Supply	151 days	Fri 1/2/15	Fri 7/31/15
16	2.5 - Draft Technical Report for Submittal to SWRCB	21 days	Mon 8/3/15	Mon 8/31/15
17	2.6 - Final Technical Report for Submittal to SWRCB	12 days	Tue 9/15/15	Wed 9/30/15
18	**Task 3.0 - Downstream Release Program Alternatives**	**151 days**	**Fri 1/2/15**	**Fri 7/31/15**
19	3.1 - Devleop Technical Input to Evaluate HCP Alternatives	64 days	Fri 1/2/15	Wed 4/1/15
20	3.2 - Prepare Operate to Water Rights Alternative	23 days	Wed 4/1/15	Fri 5/1/15
21	3.3 - Prepare Best Habitat Case Alternative	23 days	Wed 4/1/15	Fri 5/1/15
22	3.4 - Prepare HCP Alternative	66 days	Fri 5/1/15	Fri 7/31/15
23	3.5 - Compare Alternatives to Baseline Study	66 days	Fri 5/1/15	Fri 7/31/15
24	**Task 4.0 - Project Oversight, Coordination, and Strategic Planning**	**208 days**	**Mon 12/15/14**	**Wed 9/30/15**
25	**4.1 - Overall Project Coordination**	**208 days**	**Mon 12/15/14**	**Wed 9/30/15**
26	4.1.1 - Project Management and Coordinate Task Activities	208 days	Mon 12/15/14	Wed 9/30/15
27	4.1.2 - District Kick-Off and Coordination Meetings (assume 3-2 hour meetings)	208 days	Mon 12/15/14	Wed 9/30/15
28	4.1.3 - TAC Meetings (assume 5 meetings)	208 days	Mon 12/15/14	Wed 9/30/15
29	4.1.4 - Prepare 9 Monthly Progress Reports	208 days	Mon 12/15/14	Wed 9/30/15
30	**4.2 - Strategic Planning**	**131 days**	**Mon 12/15/14**	**Mon 6/15/15**
31	4.2.1 - Develop Project Approach	35 days	Mon 12/15/14	Fri 1/30/15
32	4.2.2 - SWRCB Water Rights Application Briefing Meeting	1 day	Mon 6/15/15	Mon 6/15/15



SECTION 4 - PROJECT COST ESTIMATE

A detailed project cost estimate is provided below, including billing rates, hours for each team member, cost by task and subtask, and overall not-to-exceed budget.

REVISED COST PROPOSAL - October 23, 2014

LOPEZ WATER PROJECT HABITAT CONSERVATION PLAN HYDROGEOLOGIC SERVICES
SUBMITTED TO SAN LUIS OBISPO COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
BY: ECORP CONSULTING, INC.

	Team Member	Michael Preszler	Jeff Meyer	Jared Emery	*Timothy Cleath	*Spencer Harris	*CHG Staff	*John Hollenbeck	Jeff Swager	Kevin Ortega	Brian Fedrow	Tonni Clark	Holly McClure	Wendy Garner	**Hours Per Subtask**	**Cost Per Subtask**
	Role on Project	Project Manager	Technical Director	Water Resources Engineer	Hydrogeologist/ Engineering Geologist	Senior Hydrogeologist	CHG Staff	Principal Engineer	Mapping Department manager	GIS Specialist	Production Coordinator	Contracting	Project Coordination	Word Processing/ data input		
	Rate per hour	$200	$200	$150	$147	$131	$100	$189	$140	$105	$150	$135	$140	$80		
$44,905	**Task 1.0 - Reservoir Model Peer Review and Update**															
	1.1 Review of existing models and available documentation	4	16	24											44	$ 7,600
	1.2 Review reservoir data and extend hydrology	1	12	24					2	6					45	$ 7,112
	1.3 Review and coordinate information with stakeholders	16	16	4	8	8		2							54	$ 9,604
	1.4 Develop OASIS simulation model of system and Baseline study	4	12	40	2	2									60	$ 9,757
	1.5 Prepare documentation of model assumptions	8	32	4	2	2		4			4			4	60	$ 10,833
$46,502	**Task 2.0 - Water Availability Analysis**															
	2.1 Project Approach and Objectives	16	4		2	2		2							26	$ 4,935
	2.2 System Description	2	8						2	8					20	$ 3,123
	2.3 Modeling of system	2	16	32											50	$ 8,400
	2.4 Effects of HCP on agricultural and municipal groundwater supply	2	8		8	24	48								90	$ 11,114
	2.5 Draft Technical Report for Submittal to SWRCB	32	4	4	4	4		4	4	12	4			4	76	$ 12,413
	2.6 Final Technical Report for Submittal to SWRCB	16	4		2	2		2	2	8	2			2	40	$ 6,517
$44,641	**Task 3.0 - Downstream Release Program Alternatives**															
	3.1 Develop technical input to evaluate HCP alternatives	2	8	12	12	36	72								142	$ 17,471
	3.2 Prepare Operate to Water Rights Alternative	4	16	20	4										44	$ 7,588
	3.3 Prepare Best Habitat Case Alternative	4	16	20	4										44	$ 7,588
	3.4 Prepare HCP Alternative	4	16	20	4										44	$ 7,588
	3.5 Compare Alternatives to Baseline Study	2	8	4	2			8							24	$ 4,406
$74,014	**Task 4.0 - Project Oversight, Coordination, and Strategic Planning**															
	4.1 Overall Project Coordination															
	Subtask 4.1.1 - Project Management and Coordinate Task Activities	56	16									2	16		90	$ 16,910
	Subtask 4.1.2 - District Kick-Off and Coordination Meetings (assume 3 2-hour meetings)	12	12		4										28	$ 5,388
	Subtask 4.1.3 - TAC Meetings (assume 7 in person meetings and 3 telephone meetings)	65	65		24										154	$ 29,528
	Subtask 4.1.4 - Prepare 9 Monthly Progress Reports	8	4								2		12		26	$ 4,380
	4.2 Strategic Planning															
	Subtask 4.2.1 - Develop Project Approach	24	12		8			8					4		56	$ 10,448
	Subtask 4.2.2 - SWRCB Water Rights Application Briefing Meeting	2	2												4	$ 800
	Expenses															
	Mileage: 6,000 miles at $0.56 per mile															$ 3,360
	Food & Lodging															$ 3,200
	Total Expenses															$ 6,560
	Total Hours	286	307	208	90	80	120	30	10	34	12	2	32	10	1,221	
	Total Labor	$57,200	$61,400	$31,200	$13,230	$10,500	$11,970	$5,670	$1,400	$3,582	$1,800	$270	$4,480	$800		

** ECORP used a 5% mark-up for its subcontractors*

Total Not to Exceed Budget = $210,062