
From: Michael Azevedo [mjazevedo@countyofcolusa.com]
Sent: 10/1/2020 7:01:06 AM
To: Jerry Brown [jbrown@sitesproject.org]; 'Luu, Henry' [Henry.Luu@hdrinc.com]
CC: Kevin Spesert [kspesert@sitesproject.org]
Subject: Natural Gas Transmission Lines
Attachments: 676M0101.pdf; Central Valley Gas Storage Project Alignment Maps Feb'2010 sheet 10.pdf

Good morning Gentlemen,

As I mentioned at the close of the ad hoc discussion yesterday, there are three significant natural gas conveyance pipe lines in and around the area we are reviewing to site the regulating reservoir.

These attachments are sheets pulled from 2 underground gas storage projects that tapped in to the L400 PG&E gas transmission line near the Delevan Compressor Station. These both continue in an east/west direction, parallel to and south of Dirks Road (noted as incorrectly 'Noel Evan' Road on 676M0101).

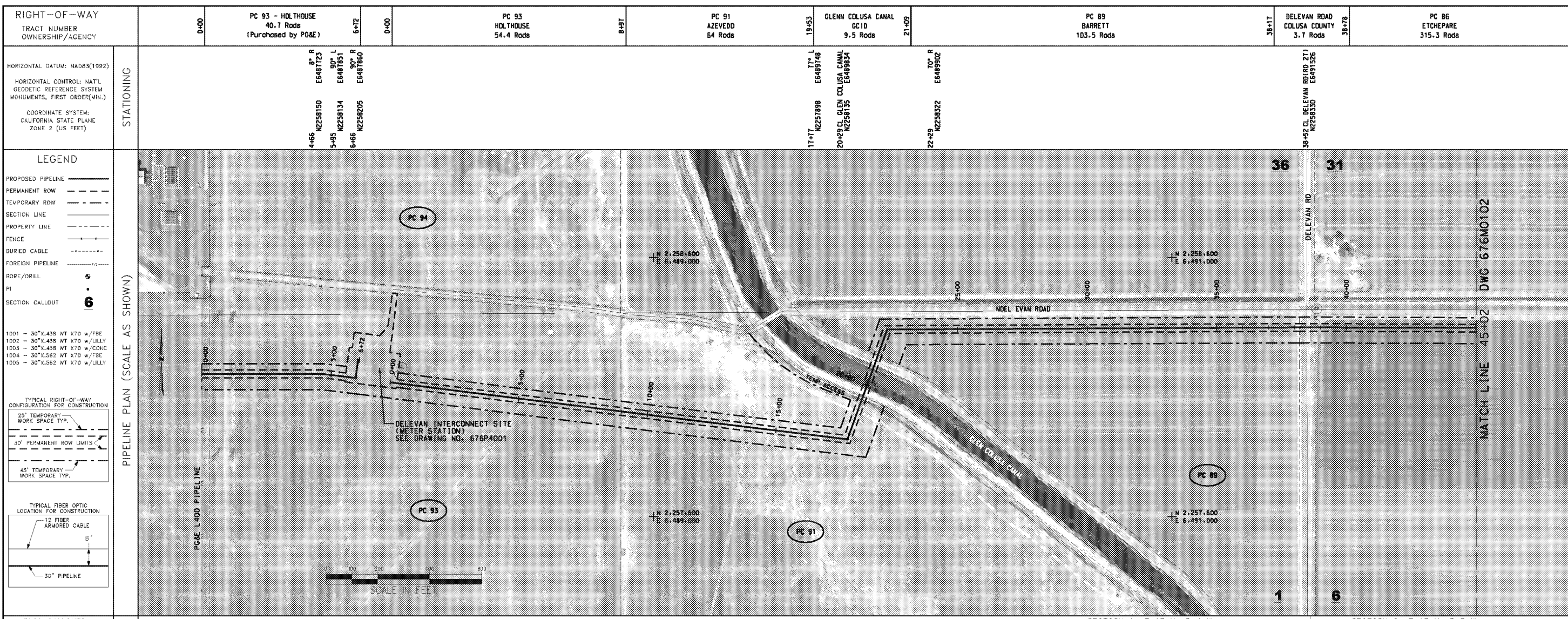
Of more significance (in my opinion) is the north/south PG&E L400 gas transmission line. My office does not have specific information on its location outside of these 2 attachments. My memory has it lying within the same easement of the overhead PG&E electrical transmission lines to a point about 1 mile north of the private irrigation lateral shown on the Stone Corral Regulating Reservoir option presented yesterday. The transmission line leaves the overhead easement at that point, angling off in a southwesterly direction, passing just west of said irrigation lateral, and intersecting Maxwell Sites Road about 800 feet east of Mills Orchard Road.

I apologize for not mentioning this sooner.

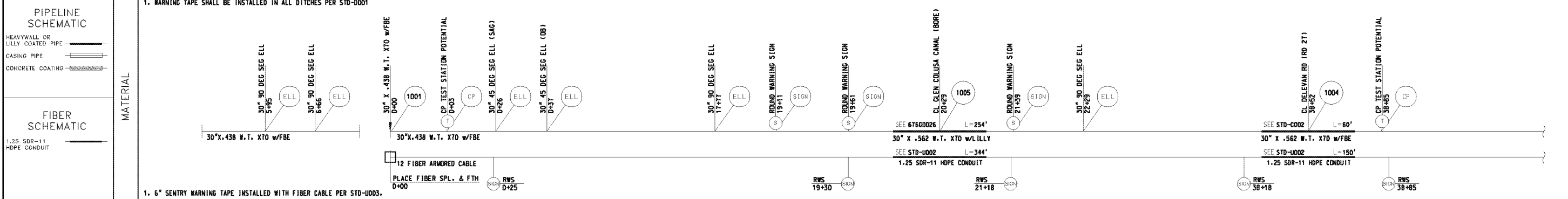
Michael J Azevedo

Colusa County Public Works
530.458.0466

PLOT FILE DATE: 10/29/2002



SECTION 1, T 17 N R 4 W SECTION 6, T 17 N R 3 W



1. 6" SENTRY WARNING TAPE INSTALLED WITH FIBER CABLE PER STD-1003.

LAND USE/DEPTH OF COVER 5 FEET 8 FEET 5 FEET












ENVIRONMENTAL NOTES & RESTRICTIONS TIE-IN → PRECONSTRUCTION BIOLOGICAL SURVEYS FOR "BURROWING OWL" MUST BE COMPLETED PRIOR TO CONSTRUCTION → 20+00 21+00 ← GIANT GARTER SNAKE HABITAT 10/1 THRU 4/30 (CONSTRUCTION PROHIBITED) → 45+02

RIGHT-OF-WAY	D=00	PC 93 - HOLTHOUSE 40.7 Rods (Purchased by PG&E)	5+72	D=00	PC 93 HOLTHOUSE 54.4 Rods	8+37	PC 91 AZEVEDO 64 Rods	19+53	GLENN COLUSA CANAL GC ID 9.5 Rods	21+09	PC 89 BARRETT 103.5 Rods	38+17	DELEVAN ROAD COLUSA COUNTY 3.7 Rods	38+78	PC 86 ETCHEPARE 315.3 Rods
HORIZONTAL DATUM: NAD83(1992) HORIZONTAL CONTROL: NAT'L GEODETIC REFERENCE SYSTEM MONUMENTS, FIRST ORDER(MIN.) COORDINATE SYSTEM: CALIFORNIA STATE PLANE ZONE 2 (US FEET)	STATIONING														
LEGEND	PIPELINE PLAN (SCALE AS SHOWN)														
PLSS CALLOUTS CLASS LOCATION	MATERIAL														
PIPELINE SCHEMATIC	FIBER SCHEMATIC														
LAND USE/DEPTH OF COVER	ENVIRONMENTAL NOTES & RESTRICTIONS														
NOTES :															

CONSTRUCTION ALIGNMENT SHEET		BY: CHD APPR:	
LINE 400 INTERCONNECT		DATE: 10/17/02	
GAS TRANSMISSION LINE		NO. 0	
SCALE: 1" = 50'		DESCRIPTION: ISSUED FOR CONSTRUCTION	
SHEET NUMBER: 1 OF 50		DWG. NO. 6760102	
AS SHOWN DWG. 6760101		DESCRIPTION: CONSTRUCTION ALIGNMENT	
		STANDARD DITCH SPECIFICATION	
		GLEN COLUSA CANAL	
		TYPICAL UNGRADED ROAD CROSSING	
		INTERCONNECT DRAWING	
		DESIGNED: 5/17/02	
		CHECKED: MM	
		APPROVED: MM	
		ENGINEERING RECORD	
		DATE: 5/17/02	
		DRAWN: MM	
		CHECKED: MM	
		APPROVED: MM	

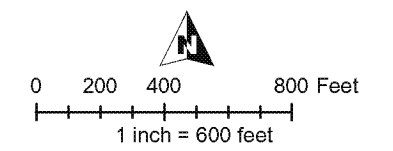
Attachment 1
Central Valley Natural Gas
Storage Project
February 2010
 Sheet 10

Project Elements

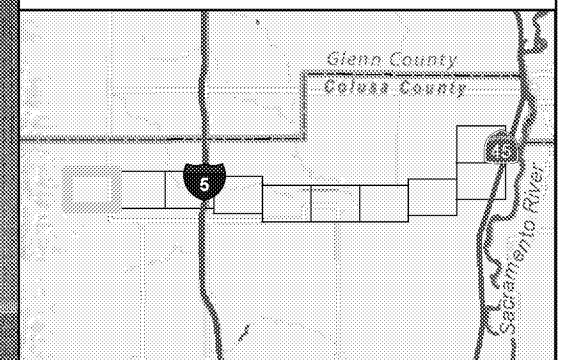
-  HDD Bore Location
-  Permanent Impact Area – Above Ground Facilities and New Access Roads
-  Temporary Impact Area –Permanent Easement for Buried Gas Pipeline
-  Temporary Impact Area – Construction Easement for Buried Gas Pipeline and Above Ground Facilities
-  Buffer Area
-  24-Inch Gas Pipeline
-  16-Inch Dual Gas Gathering Line
-  8-Inch Connection Pipeline
-  Saltwater Disposal Line
-  PG&E 12kV Line
-  PG&E 400/401 Line

Biological Elements

-  Biological Study Area
-  Proposed Berm Removal in March/April 2011
-  Valley Elderberry Longhorn Beetle Habitat
-  Drainages
-  Seasonal Wetland
-  Freshwater Marsh



Aerial Source: Rooney Engineering Inc. 2008



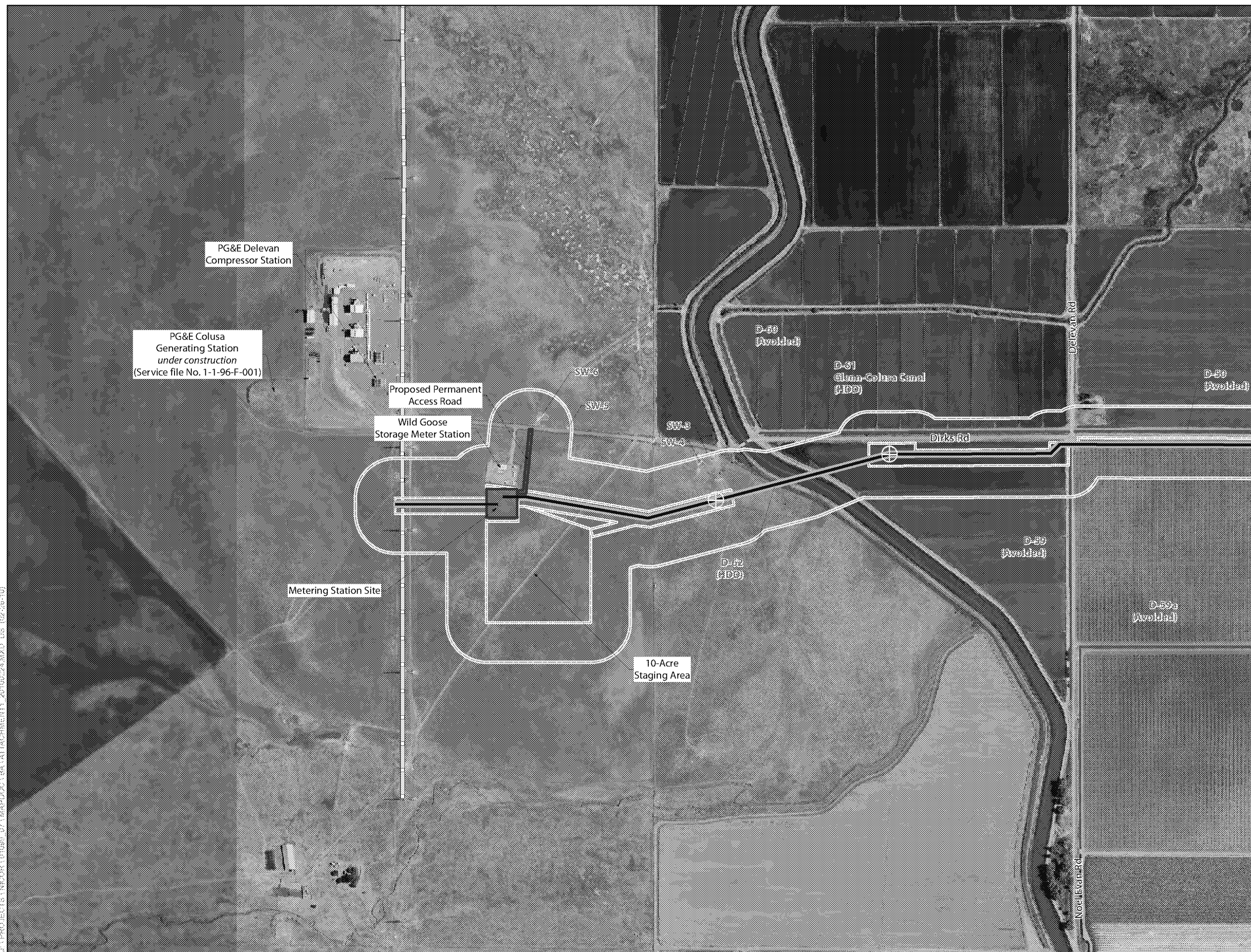
Prepared by:



Prepared for:



C:\PROJECTS\INFORM\07680_07\MAPS\DC1\BA\ATTACHMENT1_20100224.DWG, E8 (6226-10)



From: Heather Dyer [heatherd@sbvmwd.com]
Sent: 10/1/2020 3:53:00 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites - CDFW Reimbursable Contract

Sure thing. I have Joanna Gibson (former Senior Env. Scientist Supervisory from CDFW) looking at it tonight.

Heather

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, September 30, 2020 10:23 AM
To: Heather Dyer <heatherd@sbvmwd.com>
Subject: Sites - CDFW Reimbursable Contract

Heather – With your background and work with CDFW, and with the new staff person you have on board from CDFW, I thought it would be helpful if you could review our draft reimbursable agreement with them. I had a number of reimbursable agreements with CDFW at Reclamation, but all related to the operations and maintenance of a fish conservation facility (hatchery). I didn't pay for their staff planning/permitting time.

I've attached the proposed final agreement along with the cost estimate. There are also talking points in the MS Word file below the statement of work. They are allocating a number of staff to the project as the project spans 2 regions and the fisheries components will also be completed in headquarters. Although a bit of sticker shock, I really feel like this level of effort is necessary if we really want to meet our permitting schedule. (In total, they are looking at \$2.8M thru the end of State Fiscal Year 2022; we would allocate \$1.5M between now and the end of calendar year 2021 to match with our Amendment 2 timeframe. The remainder would be allocated in early 2022, our next amendment timeframe.)

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Streambed Alteration Agreements issued December 2022

Would love your review and input on scope, talking points and costs if you or your team member have some time. Input by next Wednesday, October 7, would be great, if possible.

Hope you are doing well!

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Heather Dyer [heatherd@sbvmwd.com]
Sent: 10/2/2020 9:00:58 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Joanna Gibson [joannag@sbvmwd.com]
Subject: Re: Sites - CDFW Reimbursable Contract

Joanna's looking at this and will provide feedback. However, I will say that this is the best investment we can make in the project because it's how we build ground level support for the project - by solving problems WITH Department staff rather than just talking about problems. They become part of the project team in a way that's not possible without funding positions. That support works it's way up through the ranks at CDFW. We still have to do our part and show our work - there are no "gimmes" - but this ensures a consistent dialogue between the Department and the project.

Heather Dyer, M.S., MBA | General Manager
San Bernardino Valley Municipal Water District
380 East Vanderbilt Way | San Bernardino, CA 92408
P 909.387.9200 | M: 760.397.7756
heatherd@sbvmwd.com<mailto:heatherd@sbvmwd.com>

On Sep 30, 2020, at 10:22 AM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Heather - With your background and work with CDFW, and with the new staff person you have on board from CDFW, I thought it would be helpful if you could review our draft reimbursable agreement with them. I had a number of reimbursable agreements with CDFW at Reclamation, but all related to the operations and maintenance of a fish conservation facility (hatchery). I didn't pay for their staff planning/permitting time.

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Ali

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| aforsythe@sitesproject.org<mailto:aforsythe@sitesproject.org> |
www.SitesProject.org<http://www.sitesproject.org/>

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<CDFW Reimbursable Agreement_Scope and Talking Points_Proposed Final.docx>
<Sites_CDFW Resource Plan_July2020.xlsx>

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/2/2020 10:32:38 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]
Subject: FW: Sites Reservoir REIR/SEIS: AQ/GHG

I thought that we had discussed this previously and that the decision was to not have ICF contact the AQ districts until we cleared with Kevin. Please confirm whether ICF can or can't do this now. Thanks !!

From: Williams, Nicole [mailto:Nicole.Williams@icf.com]
Sent: Friday, October 2, 2020 10:26 AM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Briard, Monique <Monique.Briard@icf.com>
Subject: RE: Sites Reservoir REIR/SEIS: AQ/GHG

Hi Laurie – following up on highlight below. We have not called the AQ districts. Cheers, Nicole

NICOLE L. WILLIAMS
Senior Environmental Planner
ICF
o 916.231.9614
icf.com

From: Williams, Nicole
Sent: Tuesday, September 29, 2020 3:16 PM
To: 'Laurie Warner Herson' <laurie.warner.herson@phenixenv.com>
Cc: Briard, Monique <Monique.Briard@icf.com>
Subject: Sites Reservoir REIR/SEIS: AQ/GHG

Hi Laurie –

Per our discussion yesterday, our AQ/GHG team will begin to update the excel files with Alt 1 and Alt 2 facilities. As noted in Appendix 2C we want to be sure that engineers work in excel files rather than the word files. Ultimately we'll walk through those files when we have the meeting with the engineers. They will look like the example tables in 2C, but we'll pre-load some of the Alt 1 and Alt 2 facilities to make them more closely align with Chapter 2. One reason we want to have a call with the engineers is because the lumping and splitting of facilities in the excel file maybe influenced by how the engineers are envisioning construction means and methods. For example, are the activities clearing and grubbing the same for all facilities and if so, would require the same equipment across all facilities? Talking through things like that will be helpful.

Also, can I get approval to reach out to the AQ Districts this week to confirm the following:

- Use of Tehama information for Glenn and Colusa Counties (as was done in 2017)
- Use of Yolo Solano District thresholds
- Get their input on potentially using Sac Metro evaluation guidance for Friant purposes (b/c not many districts have guidance)

If we can do that this week and get responses back from the air districts that will help inform our conversation with Authority/Integration/HR-HC.

Many thanks for your input.

Cheers, Nicole

NICOLE L. WILLIAMS | Senior Environmental Planner | (o) 916.231.9614 | (m) 530.867.0470 | nicole.williams@icf.com | icf.com
ICF | 980 9th Street Suite 1200 Sacramento CA 95814 |



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From: Kevin Spesert [kspesert@sitesproject.org]
Sent: 10/2/2020 10:54:58 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: Re: Sites Reservoir REIR/SEIS: AQ/GHG

No concerns...just let me know when they call

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Friday, October 2, 2020 10:51 AM
To: Laurie Warner Herson; Kevin Spesert
Subject: RE: Sites Reservoir REIR/SEIS: AQ/GHG

I am fine with them contacting the air districts.

Kevin, do you have any concerns with this?

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Friday, October 2, 2020 10:33 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>
Subject: FW: Sites Reservoir REIR/SEIS: AQ/GHG

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Cc: Briard, Monique <Monique.Briard@icf.com>
Subject: RE: Sites Reservoir REIR/SEIS: AQ/GHG

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From: Williams, Nicole
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To: 'Laurie Warner Herson' <laurie.warner.herson@phenixenv.com>

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From: Heather Dyer [heatherd@sbvmwd.com]
Sent: 10/2/2020 5:05:52 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: FW: Sites - CDFW Reimbursable Contract
Attachments: CDFW Reimbursable Agreement_Scope and Talking Points_Proposed Final.jg.docx

Here are Joanna's comments regarding clarifications in the reimbursable agreement. If you would like to give her a call please feel free to reach out.

Hope it helps.
Heather

From: Joanna Gibson
Sent: Friday, October 2, 2020 4:55 PM
To: Heather Dyer <heatherd@sbvmwd.com>
Subject: RE: Sites - CDFW Reimbursable Contract

Hi Heather –

Not sure if you want to forward this email?

I have a couple of questions (identified in comment boxes in the attached, and one suggested language revision – also in comment box).

Also, some overall comments/questions:

1. Make sure you have an understanding that both Regional Managers have been involved in these discussions (I would assume so). I ask because the word document identifies that R2 will be the lead, but a portion of the project is within R1. Will one permit/agreement be issued that covers both CDFW regions, or will separate agreements/permits be needed? If one permit/agreement will be issued that spans both Regions is the non-executing Region ok with that?
2. Where will the staff be located (which Region)? The Senior Hydraulic Engineer will likely be in Sacramento. Will the other staff all be in one Region? I ask because of the staffing identified: ES – SES Specialist – SES Supervisor – EPM; they typically function as a close unit.
3. Have you explored requesting that you want the portion PY positions to prioritize your work over other workload?

If I think of anything else I will let you know.

Joanna Gibson
(909) 387-9259

From: Heather Dyer
Sent: Thursday, October 1, 2020 3:52 PM
To: Joanna Gibson <joannag@sbvmwd.com>
Subject: FW: Sites - CDFW Reimbursable Contract

Would you review this reimbursable agreement for Sites Reservoir CDFW work. See the Program Manager's email below and feel free to make comments. This is a 1.5 acre-foot new, off-stream reservoir that skims water off the Sacramento River. Obviously, very complex fisheries and other resources issues that need to be worked through.

Thanks,
Heather

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, September 30, 2020 10:23 AM
To: Heather Dyer <heatherd@sbywmwd.com>
Subject: Sites - CDFW Reimbursable Contract

Heather – With your background and work with CDFW, and with the new staff person you have on board from CDFW, I thought it would be helpful if you could review our draft reimbursable agreement with them. I had a number of reimbursable agreements with CDFW at Reclamation, but all related to the operations and maintenance of a fish conservation facility (hatchery). I didn't pay for their staff planning/permitting time.

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/5/2020 7:08:49 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; anne.huber@icf.com
Subject: RE: Update about 2020 North Delta Flow Action Monitoring

That is a supper bummer. Still, they will be doing reduced nutrient and Chl-a monitoring at a reduced level, and that is what we really care about, so silver lining.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Sunday, October 4, 2020 4:36 PM
To: Spranza, John <John.Spranza@hdrinc.com>
Subject: FW: Update about 2020 North Delta Flow Action Monitoring

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Bummer. Their results would have been really helpful for our efforts.

Ali

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From: Twardochleb, Laura@DWR <Laura.Twardochleb@water.ca.gov>
Sent: Thursday, October 1, 2020 11:58 AM
To: Aaron Bever <abever@anchorqa.com>; Adams, Jesse@DWR <Jesse.Adams@water.ca.gov>; Etheridge, Alexandra B <aetherid@usgs.gov>; Alicia Forsythe <aforsythe@sitesproject.org>; Amrhein, Brandon@Wildlife <Brandon.Amrhein@wildlife.ca.gov>; Arrich, Jeremy@DWR <Jeremy.Arrich@water.ca.gov>; Bahia, Maninder@DWR <Maninder.Bahia@water.ca.gov>; Lewis Bair <lbair@rd108.org>; Bedwell, Mallory@DWR <Mallory.Bedwell@water.ca.gov>; Beeman, Tim <tlb@bullseyefarms.com>; Bettner, Thad <tbettner@gcid.net>; Serup, Bjarni@Wildlife <Bjarni.Serup@wildlife.ca.gov>; Brennan, John <john@landmba.org>; Chris Campbell <c.campbell@cbecoeng.com>; Pien, Catarina@DWR <Catarina.Pien@water.ca.gov>; Chelsea Martinez <cmartinez@yolobasin.org>; Wilkinson, Chris@DWR <Christopher.Wilkinson@water.ca.gov>; Cordova, Darren <Cordova@mbkengineers.com>; Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Dorris, Roger <hersheyland@sbcglobal.net>; Downing, B. <bdowning@usgs.gov>; Dwyer, Amanda@DWR <Amanda.Dwyer@water.ca.gov>; Emami, Mitra@DWR <Mitra.Emami@water.ca.gov>; Field, R. <rfield@usbr.gov>; Frantzich, Jared@DWR <Jared.Frantzich@water.ca.gov>; Gilbert, Morgan D <morgan_gilbert@fws.gov>; Gille, Daphne@DWR <Daphne.Gille@water.ca.gov>; Hudson, Haley@DWR <Haley.Hudson@water.ca.gov>; Hall, Mike <mike@conawayranch.com>; Hobbs, Joe@Wildlife <Joe.Hobbs@wildlife.ca.gov>; Ikemiyagi, Naoaki@DWR <Naoaki.Ikemiyagi@water.ca.gov>; Jeanette Wrynski <wrynski@yolorcd.org>; Jenkins, Jeff@DWR <Jeff.Jenkins@water.ca.gov>; John Spranza <John.Spranza@hdrinc.com>; Jon Burau <jrburau@usgs.gov>; Israel, JA <JAIsrael@usbr.gov>; Kennedy, Pat <pkennedy@gcid.net>; Kienlen, Gary <kienlen@mbkengineers.com>; Kiteck, E

<ekiteck@usbr.gov>; Koch, Eric@DWR <Eric.Koch@water.ca.gov>; Kraus, Tamara@USGS <tkraus@usgs.gov>; Kubo, Hideaki@Wildlife <Hideaki.Kubo@wildlife.ca.gov>; Kwan, Nicole@DWR <Nicole.Kwan@water.ca.gov>; Grimaldo, Lenny@DWR <Lenny.Grimaldo@water.ca.gov>; Lund, Casey@DWR <Casey.Lund@water.ca.gov>; Maguire, Amanda@DWR <Amanda.Maguire@water.ca.gov>; Mahardja, Brian@FWS <brian_mahardja@fws.gov>; Marie Vasi Stillway <mstillway@ucdavis.edu>; Martinez, Analisa@DWR <Analisa.Martinez@water.ca.gov>; Martinez, Josh@DWR <Joshua.Martinez@water.ca.gov>; Massa, Larry <massaranch@gmail.com>; Maya @ American West Conservation <maya@americanwestconservation.com>; Michael MacWilliams <mmacwilliams@anchorqea.com>; Paccassi, Michael@Wildlife <Michael.Paccassi@Wildlife.ca.gov>; Kilgour, Morgan@Wildlife <Morgan.Kilgour@Wildlife.ca.gov>; Murphy, Brian@DWR <Brian.Murphy@water.ca.gov>; Navarrot, Chad <cnavarrot@rd108.org>; Neu, Patrick <neu@mbkengineers.com>; Newcomb, James@DWR <James.Newcomb@water.ca.gov>; Nurmi, Francesca@DWR <Francesca.Nurmi@water.ca.gov>; boregan@ksninc.com; Orlando, Jim <jorlando@usgs.gov>; Ovee, B. <bovee@mbkengineers.com>; Pollack, Lynnel <yoloranch@yolo.net>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Robin Kulakow <robin@yolobasin.org>; Rominger, Rick <rombros@pacbell.net>; Ruhl, Cathy <cruhl@usgs.gov>; Salvador, Michael@DWR <Michael.Salvador@water.ca.gov>; Schreier, Brian@DWR <Brian.Schreier@water.ca.gov>; Schultz, Andrew <aschultz@usbr.gov>; Shipley, Jered <jshipley@gcid.net>; Sommer, Ted@DWR <Ted.Sommer@water.ca.gov>; Stumpner, Elizabeth <estumpner@usgs.gov>; Tjernell, Kristopher@DWR <Kristopher.Tjernell@water.ca.gov>; Tempel, Trishelle@Wildlife <Trishelle.Tempel@wildlife.ca.gov>; Twardochleb, Laura@DWR <Laura.Twardochleb@water.ca.gov>; Van Nieuwenhuysse, Erwin <EVanNieuwenhuysse@usbr.gov>; Vanni, Kaylee@DWR <Kaylee.Vanni@water.ca.gov>; Wallace, Jim <jimwallace@ecolusa.com>; Wilcox, Carl@Wildlife <Carl.Wilcox@wildlife.ca.gov>; Wilkerson, Frances <fwilkers@sfsu.edu>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Wright, Hailey@DWR <Hailey.Wright@water.ca.gov>

Cc: Davis, Brittany E.@DWR <Brittany.E.Davis@water.ca.gov>

Subject: Update about 2020 North Delta Flow Action Monitoring

Dear NDFA Stakeholders,

I want to update you about changes made to our 2020 NDFA monitoring. This is a no-action year in which we planned to conduct baseline food web monitoring.

Monitoring activities for 2020 have been reduced due to the recent wildfires in California. The 2020 monitoring season was scheduled for July to October 2020. Planned activities included deployment of continuous water quality sensors and discrete sampling transects every two weeks for monitoring water quality, contaminants, nutrients, and lower trophic organisms. Eight discrete sampling transects were planned in total. As of September 14, 2020, most discrete sampling has been discontinued. A timeline of changes to 2020 NDFA monitoring are described in the table below.

Please contact me or Brittany Davis (cc'd here) with any questions about these changes to 2020 monitoring.

Monitoring Activity	Previous Changes to Sampling	Status
Continuous water quality monitoring	None	Continuing as planned
Discrete monitoring of nutrients	Transects 4 and 5 postponed due to poor air quality starting Aug. 24	Reduced as of Sept. 14; sampling 5 of 11 planned sites 1x per month
Discrete monitoring of contaminants with partners at USGS	Transect 2 cancelled due to staff exposure to COVID-19 at partner agency; Transects 4 and 5 postponed due to poor air quality Aug. 24	Sampling discontinued on Sept. 14
Discrete monitoring of chl-a and phytoplankton	Transects 4 and 5 postponed due to poor air quality starting Aug. 24	Reduced as of Sept. 14; sampling 5 of 11 planned sites 1x per month
Discrete monitoring of zooplankton	Transects 4 and 5 postponed due to poor air quality starting Aug. 24	Sampling discontinued on Sept. 14

Phytoplankton growth experiments with partners at SFSU

Transects 4 and 5 postponed due to poor air quality starting Aug. 24

Reduced as of Sept. 14; sampling and growth experiments continuing at Rio Vista Bridge site

Laura Twardochleb, PhD

Senior Environmental Scientist (Specialist)
Office of Water Quality and Estuarine Ecology
CA Department of Water Resources
Office: (916) 376-9760

From: Kevin Spesert [kspesert@sitesproject.org]
Sent: 10/5/2020 8:57:02 AM
To: Fritz Durst (fritz.durst@gmail.com) [fritz.durst@gmail.com]; Thad Bettner (tbettner@gcid.net) [tbettner@gcid.net]; Jeff Harris (jsharris@cityofsacramento.org) [jsharris@cityofsacramento.org]; Gary Evans (gevans@countyofcolusa.org) [gevans@countyofcolusa.org]; 'Valerie Pryor' [vpryor@zone7water.com]; Jeff Sutton (jsutton@tccanal.com) [jsutton@tccanal.com]; Jerry Brown [jbrown@sitesproject.org]; Keith Dunn (keithdunn@me.com) [keithdunn@me.com]; Marcia Kivett [MKivett@sitesproject.org]; Stephanie Kauss [SKauss@cityofsacramento.org]; Keith Dunn (keithdunn@me.com) [keithdunn@me.com]
Subject: Event Briefing and Message Platform for Lt. Gov Kounalakis project tour - Wednesday October 7th 10:00am
Attachments: Sites_Lt Gov site tour_5Oct2020.pdf; Sites_Message Platform_MASTER.pdf

Attached is the Event Briefing for our project tour with Lt. Gov Kounalakis for this Wednesday October 7th at 10:00am...as a reminder, please be at the Maxwell Project Office by 9:30am on Wednesday...the event will start at 10:00am..

Final plans and logistics for the event are still being finalized...if anything changes I will reach out to the group..

I have also attached the Message Platform for your reference...please use the key messages outlined in this document to frame our conversations with the Lt. Gov...

Please give me a call if you have any questions.

Thanks!

Kevin

Kevin Spesert

External Affairs Manager

Sites Project Authority

Phone: 530.632.4071

Email: kspesert@sitesproject.org

Web: www.SitesProject.org

P.O. Box 517

122 Old Hwy 99W

Maxwell, CA 95955

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Lt. Gov Kounalakis Project Site Tour



To: Fritz Durst, Thad Bettner, Jeff Harris, Gary Evans, Valarie Pryor
Date: October 5, 2020
From: Jerry Brown, Kevin Spesert, Keith Dunn
Quality Review by: Kevin Spesert
Authority Agent Review by: Kevin Spesert
Subject: Lt. Gov Kounalakis Project Site Tour – October 7, 2020

Background:

On Wednesday October 7, 2020, California Lt. Gov Kounalakis will be travelling to the Sites Project Office in Maxwell for a round-table discussion and a site tour of the proposed project.

As a candidate, Lt. Gov Kounalakis previously visited the Maxwell Office in the May 2018 for a project briefing prior to her election to Lt. Gov.

The Lt. Gov has expressed support for the project, particularly the benefits associated with climate change and drought resiliency, as well as increased water supply reliability to the statewide system.

Event Itinerary:

Following is an overview of the tentative itinerary for the event. The final itinerary is pending final approval by the Lt. Gov's security detail.

9:30am - All Sites Project Authority participants arrive at Maxwell Office

10:00am -Lt. Gov Kounalakis, staff and security detail arrive at Maxwell Office

10:00am – 10:30am - Meet & Greet and general project briefing in the Maxwell Office

10:30am – 11:30am – Project site tour (*stops at GCID/TRR location & Sites Valley*)

11:30am – Return to the Maxwell Office

Logistics:

- Dress is business casual...we will be in the field and in cars so dress comfortably. We will have water available
- This is a non-press event. The Lt. Gov's staff will be taking pictures for posting on their social media platforms. We will be taking pictures as well.
- Maxwell Office will set-up for the roundtable discussion with the appropriate "social distancing protocols". Please remember to bring a mask (*we do have some in the office if you forget*)

Status: Draft
Filename: Lt. Gov Kounalakis Project Site Tour – October 7, 2020
Notes:

Phase: 2 Revision:
Date: October 5, 2020
Page: 1 of 3

- Logistics for transportation during the project site tour are currently being worked out and will not be finalized until the day of the event, however we are working with the Lt. Gov's staff and security detail on allowing a couple of Sites Project participants to travel in the Lt. Gov's car during the tour (*pending security and COVID-19 protocols*). Keith Dunn and I will be additional drivers as needed.

Messaging:

The complete message platform is attached for your reference. The general messages outlined in the message platform should be used to frame our discussions with the Lt. Gov during the roundtable discussion and during the project tour. Following are the key message themes that we should focus on during the event.

Statewide Participation

- The Sites Project Authority is working in collaboration with a broad coalition of project participants and stakeholders - throughout California – to address our statewide water supply challenges and create a resilient water future.
- Sites has broad statewide representation including the local counties where the project is located, along with cities, counties, water and irrigation districts throughout the Sacramento Valley, San Joaquin Valley, Bay Area, and Southern California.

"Right-Sizing"/Value Planning

- The Sites Project Authority conducted a rigorous Value Planning effort to review the project's proposed operations and facilities to develop a project that is "right sized" for our investors and participants while still providing water supply reliability and enhancing the environment.
- Rightsizing was responsive to input from state and federal agencies, NGOs, elected officials, landowners, and local communities.
- Resulted in a project with a smaller footprint that costs less than the original proposal, reduces impacts to the environment and identifies new opportunities to benefit key natural resources, while still providing a tremendous amount of flexibility.

State's investment under Prop 1 – Water for the environment

- Sites is creating an environmental water asset for the state by providing water and dedicated storage for environmental needs that does not currently exist, providing flexible resources to provide environmental water to the right place at the right time.
- Water dedicated for the environment provided by Sites Reservoir will be flexibly managed by state resources agency managers who will decide how, and when, this water would be used for environmental purposes.
- Sites provides California through its investment under Proposition 1, a reliable dry year water supply dedicated to environmental needs – when the environment and fisheries traditionally need this resource the most.

Resiliency to Climate Change and Droughts

- Sites captures and stores stormwater flows from the Sacramento River—after all other water rights and regulatory requirements are met—for release primarily in dry and critical years for environmental use and for California communities, farms, and businesses when it is so desperately needed.
- As snowpack declines due to the effects of climate change and more of our water comes in the form of atmospheric rivers and large stormwater flows – Sites Reservoir will become even more vital to the future resiliency of our statewide water supply by capturing and storing this water for future use.
- Extensive modeling has indicated that Sites Reservoir performs better and provides the most benefit to the people and environment of California, under the most challenging climate change scenarios.

“Asks”:

Following are the “asks” that the Authority would like the Lt. Gov to consider regarding advancing the project through the state environmental review and permitting process.

- On July 28, 2020, Governor Gavin Newsom released a final version of the Water Resilience Portfolio. The Portfolio recommended that the environmental review and permitting process for the Proposition 1 projects...including Sites Reservoir...should be “accelerated” in an effort to get these vital projects online.

The Sites Project Authority would like to work with the Lt. Gov and the administration to develop a strategy to advance the recommendation outlined in the final version of the Portfolio. The “accelerated” state permitting process is vital to ensure that the Prop 1 projects meet the statutorily required milestones and help get these vital projects online.

- With the California Water Commission’s decision to invest \$816 million in Proposition 1 funding in the Sites Project...it has purchased a dedicated portion of the water produced by the reservoir...as such the State has become an investor in the project just like any of our other participating water agencies. This water would be managed by state resources agencies who may not necessarily be comfortable with the role of “investor/project participant” and focus more on their “government/regulator role”.

The Sites Project Authority would like to work with the Lt. Gov and the administration to develop a strategy to develop a framework for partnership with the state resources agencies who will be the beneficiaries of the water that Sites Reservoir will provide. Engagement of the state resource agencies as “investors” ...and not only as “regulators”...is vital to ensuring that the benefits that the state invested in for Sites Reservoir is maximized.

SITES RESERVOIR MESSAGE PLATFORM

Updated June 16, 2020

KEY MESSAGE 1 *SITES RESERVOIR IS A 21st CENTURY MULTI-BENEFIT SOLUTION TO CALIFORNIA’S WATER RELIABILITY CHALLENGES*

- The Sites Project Authority is **working in collaboration** with a **broad coalition** of project participants and stakeholders - **throughout California** – to address our **statewide water supply challenges and create a resilient water future**.
- Sites Reservoir is a generational opportunity to construct a multi-benefit water storage project that helps **restore flexibility, reliability, and resiliency** to our **statewide** water supply.
- No other storage project currently under consideration in California can **positively influence the operational efficiencies of our existing statewide water system** like Sites Reservoir.
- Sites is **not a “traditional” reservoir project**. It is an **off-stream facility that does not dam a major river system** and would **not block fish migration or spawning**.
- Sites **captures and stores stormwater flows** from the **Sacramento River**—after all other water rights and regulatory requirements are met—**for release primarily in dry and critical years** for **environmental use** and for California **communities, farms, and businesses** when it is so desperately needed.
- Sites will be cooperatively managed in conjunction with both the State Water Project and Central Valley Project and **will greatly increase the flexibility, reliability, and resiliency of statewide water supplies in drier years for environmental, agricultural, and urban uses**.

KEY MESSAGE 2 *OUR STRENGTH IS IN OUR DIVERSE STATEWIDE PARTICIPATION*

- The agencies participating in Sites Reservoir are diverse, representing **major urban centers and rural agricultural regions** across California.
- Sites has **broad statewide representation** including the **local counties** where the project is located, along with **cities, counties, water and irrigation districts** throughout the **Sacramento Valley, San Joaquin Valley, Bay Area, and Southern California**.
- Sites participants provide water for over **24 million Californians** and over **500,000 acres of farmland** throughout California.

- Sites is working in **close collaboration** with **California Department of Water Resources and Bureau of Reclamation** to add **operational flexibility** to the **State Water Project and Central Valley Project**.
- The Sites Project is an example of **teamwork and regional collaboration** to advance a **practical solution** for our statewide water management challenges.

KEY MESSAGE 3 *SITES RESERVOIR IS A “RIGHT SIZED” PROJECT THAT WILL MEET OUR WATER SUPPLY NEEDS FOR TODAY AND IN THE FUTURE*

- The Sites Project Authority conducted a **rigorous Value Planning effort** to review the project’s proposed operations and facilities to **develop a project that is “right sized” for our investors and participants while still providing water supply reliability and enhancing the environment**.
- The recommended project is a 1.5 million acre-foot reservoir – with a **smaller footprint** that **costs less** than the original proposal, **reduces impacts to the environment** and identifies **new opportunities to benefit key natural resources**, while providing a tremendous amount of **flexibility** to manage the project for the **greatest overall benefit to the State**.
- The rightsized project is roughly **\$2 Billion less** than the 2017 preferred alternative.
- Rightsizing the reservoir was **responsive to input** from **state and federal agencies, NGOs, elected officials, landowners, and local communities**. The feedback we received through this robust outreach effort was critical to developing a reservoir that is the right size for both people and the environment.
- Right-sizing has resulted in a project that includes **facilities and operations that are different than originally proposed** – as such, the Authority as the California Environmental Quality Act lead agency will **revise and recirculate its Draft EIR** and work with landowners, tribes, stakeholders, NGOs, and local communities to conduct a **collaborative environmental review process**.

KEY MESSAGE 4 *SITES RESERVOIR PROVIDES ENVIRONMENTAL, WATER SUPPLY, FLOOD PROTECTION AND RECREATION BENEFITS FOR THE STATE OF CALIFORNIA FOR GENERATIONS TO COME*

Environmental Benefits

- A significant portion of the **Sites Reservoir Project’s annual water supplies will be dedicated to environment uses** to help **improve conditions for Delta smelt**; help **preserve the cold-water pool in Shasta Lake** later into the summer months to **support salmon development, spawning, and rearing**; and **improve Pacific Flyway habitat** for migratory birds and other native species.

- **Water dedicated for the environment** provided by Sites Reservoir will be **flexibly managed by state resources agency managers** who will decide how, and when, this water would be used for environmental purposes.
- Sites is creating an **environmental water asset** for the state by providing **water and dedicated storage for environmental needs** that **does not currently exist**, providing **flexible resources** to provide environmental water to the **right place at the right time**.
- Sites provides a **reliable dry year water supply dedicated to environmental needs** – when the environment and fisheries traditionally **need this resource the most**.
- The “rightsized” project has assumed restrictive bypass flow conditions that provide **highly protective** conditions for diverting water from the Sacramento River.
- **Elimination of the Delevan Pipeline** as a new point of diversion on the Sacramento River puts all **diversions at existing locations with proven state-of-the-art fish screens** at Red Bluff and Hamilton City.

Water Supply Benefits

- Sites Reservoir will **significantly improve** the state’s water management system primarily in **drier periods** and **restore much-needed flexibility and reliability** that has been lost in the statewide system.
- Sites Reservoir will **increase California’s existing water supply** by providing 1.5 million acre-feet of additional storage capacity to the state – providing a **vital supply of water** to our farms, communities, and the environment **during times of drought**.
- As **snowpack declines due to the effects of climate change** and more of our water comes in the form of atmospheric rivers – Sites Reservoir will become even more vital to the **future resiliency of our statewide water supply**.
- Extensive modeling has indicated that Sites Reservoir **performs better and provides the most benefit to the people and environment of California, under the most challenging climate change scenarios**.
- Sites can deliver a **significant amount water to meet the needs of our participants and provide a dedicated and reliable supply of water for the environment** – 230,000 AFY long-term average

Flood Protection Benefits

- Sites Reservoir will provide **significant regional flood protection benefits** for the Sacramento Valley by **storing flood flows** that would normally impact the community of **Maxwell** - protecting homes, business, and farms.
- Will help to **limit “down-stream” flood impacts** by capturing storm flows in the Sacramento River that sometimes overwhelm the regions flood control facilities during major storm events.

Economic & Recreation Benefits

- Sites Reservoir will benefit the **local and regional economy** by **creating hundreds of construction-related jobs** during each year of the construction period, and **long-term jobs related to operations and recreation**.
- Sites Reservoir will provide **additional recreational opportunities** and **contribute to the overall economy** of the **Sacramento Valley**.
- **Agriculture is a critical component of the Sacramento Valley’s economy** - a more **reliable water supply creates a stronger agricultural economy** - which creates a ripple of benefits for our rural communities.

KEY MESSAGE 5 ***WE ARE ON-TRACK TO DELIVER THIS VITAL PROJECT FOR THE PEOPLE OF CALIFORNIA***

- Sites Reservoir is **one of only two statewide projects specifically named as a priority project in Governor Newsom’s Water Resilience Portfolio**.
- Sites **participants** have **invested over \$27 million** to advance the project over the last 3 years.
- Sites Reservoir was **awarded \$816 million** in state investment under **Proposition 1** to advance the project, the **largest award given to any project requesting funding**.
- Sites Reservoir has received **significant Federal investment** - including over **\$10 million in Water Infrastructure Improvements for the Nation (WIIN) Act** funding and a **\$449 million loan** from the **US Department of Agriculture’s Rural Development** program.
- The Authority is working to **further refine the reservoir’s operations and integration with the State Water Project and Central Valley Project** and **improve certainty** related to the project’s **permittability** and prepare applications for key **federal and state permits** and the **state’s water rights**.

- The Authority will continue to **strengthen partnerships** with **local landowners, communities, and key stakeholders** that represent **environmental, business, labor, and other interests** and continue to **pursue funding** to move the project forward through the **planning and feasibility stage** and into **implementation** beginning in **2022**.

####

From: Micko, Steve/SAC [Steve.Micko@jacobs.com]
Sent: 10/5/2020 11:02:10 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Lecky, Jim [jim.lecky@icf.com]; Hendrick, Mike [mike.hendrick@icf.com]
CC: Hassrick, Jason [jason.hassrick@icf.com]; Greenwood, Marin [Marin.Greenwood@icf.com]; Wilder, Rick [rick.wilder@icf.com]; Steve Zeug [stevez@fishsciences.net]; Noble Hendrix [noblehendrix@gmail.com]; Leaf, Rob/SAC [Rob.Lead@jacobs.com]; Thayer, Reed/SAC [Reed.Thayer@jacobs.com]
Subject: RE: Sites: HEC5Q Sacramento River Alt A2 Preliminary Effects Analysis Results
Attachments: NODOS_EggMortalityExceedancePlots_20201005__NAA_091720_ALTA2_PEA.pdf

Hello again,

Anderson and Martin model results for winter run Chinook Salmon temperature-dependent early life stage mortality are attached.

Model results pdf includes monthly exceedance plots, displaying results from NAA 091720 and ALTA2 PEA, for each month of the temperature management period (May through October).

I also posted this pdf to the link below:

https://jacobsengineering-my.sharepoint.com/:f/g/personal/reed_thayer_jacobs_com/EhZ2PZme_SxNvOI6lDcEnLOBisiZwSGMb-SKOnXRn5D9mw?e=oQCM19

Please let me know if you have any questions.

More to come soon!
Steve

From: Micko, Steve/SAC
Sent: Sunday, October 4, 2020 10:33 PM
To: 'Alicia Forsythe' <aforsythe@sitesproject.org>; 'Spranza, John' <John.Spranza@hdrinc.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>; 'Lecky, Jim' <Jim.Lecky@icf.com>; 'Hendrick, Mike' <Mike.Hendrick@icf.com>
Cc: 'Hassrick, Jason' <jason.hassrick@icf.com>; 'Greenwood, Marin' <Marin.Greenwood@icf.com>; 'Wilder, Rick' <Rick.Wilder@icf.com>; Steve Zeug <stevez@fishsciences.net>; 'Noble Hendrix' <noblehendrix@gmail.com>; Leaf, Rob/SAC <Rob.Lead@jacobs.com>; Thayer, Reed/SAC <Reed.Thayer@jacobs.com>
Subject: Sites: HEC5Q Sacramento River Alt A2 Preliminary Effects Analysis Results

Hi all,

You may access NAA and ALTA2 Sacramento River HEC5Q results for the preliminary effects analysis at the link below:

https://jacobsengineering-my.sharepoint.com/:f/r/personal/reed_thayer_jacobs_com/Documents/SitesTransmittal/Sites_20201004_ALTA2PEA_HEC5Q_SR?csf=1&web=1&e=rvjoQv

At this link you will find:

- [_Readme_20201004.pdf](#)
- Description of modeled scenarios and HEC5Q trend reporting spreadsheet
- [NODOS_Trend_Reporting_rev02cy_DV2_HistClim_HEC5Q__NAA_091720_ALTA2_092020_PrelimEffects.xlsx](#)
- Sacramento River HEC5Q trend reporting spreadsheet with the following modeled results for preliminary effects analysis:
 - No Action Alternative
 - ALTA2 PEA

The HEC5Q trend reporting spreadsheet contains storage, flow and temperature output parameters.

Note that some storage and flow locations in HEC5Q may coincide with locations available in CalSim II. For consistency, please observe storages and flows from CalSim II at boundary condition or controlled flow locations.

Anderson and Martin model results will be provided tomorrow.

Temperature results for the American and Feather Rivers should be ready by Tuesday, October 6th.

Please let me know if you have any questions.

Best,
Steve

Steve Micko, PE | Jacobs | Associate Water Resources Engineer
O:916.286.0358 | M:408.834.6614 | Steve.Micko@jacobs.com
2485 Natomas Park Drive Suite 600 | Sacramento, CA 95833

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**Winter Run Chinook Temperature Dependent Egg Mortality Results
(Anderson and Martin Models)**

The following results of the Martin and Anderson models are included for winter run Chinook Salmon temperature-dependent egg mortality for the following alternatives:

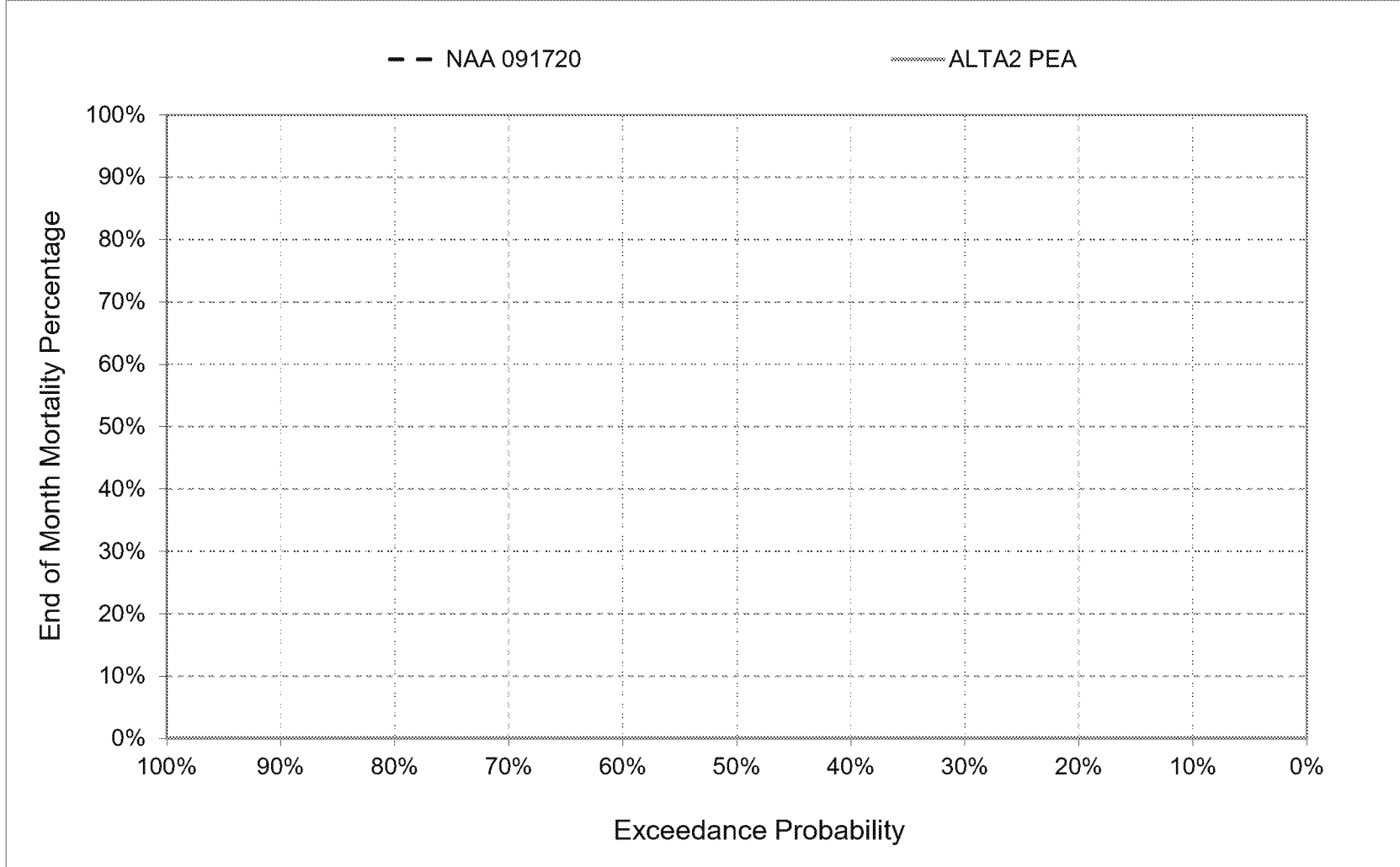
- No Action Alternative (NAA 091720)
- Alternative A2 092220 rev03 PEA (ALTA2 PEA)

Title	Model Parameter	Table Numbers	Figure Numbers
Upper Sacramento Winter Run Chinook Salmon, Anderson Model	NA	NA	1-1 to 1-6
Upper Sacramento Winter Run Chinook Salmon, Martin Model	NA	NA	2-1 to 2-6

Report formats

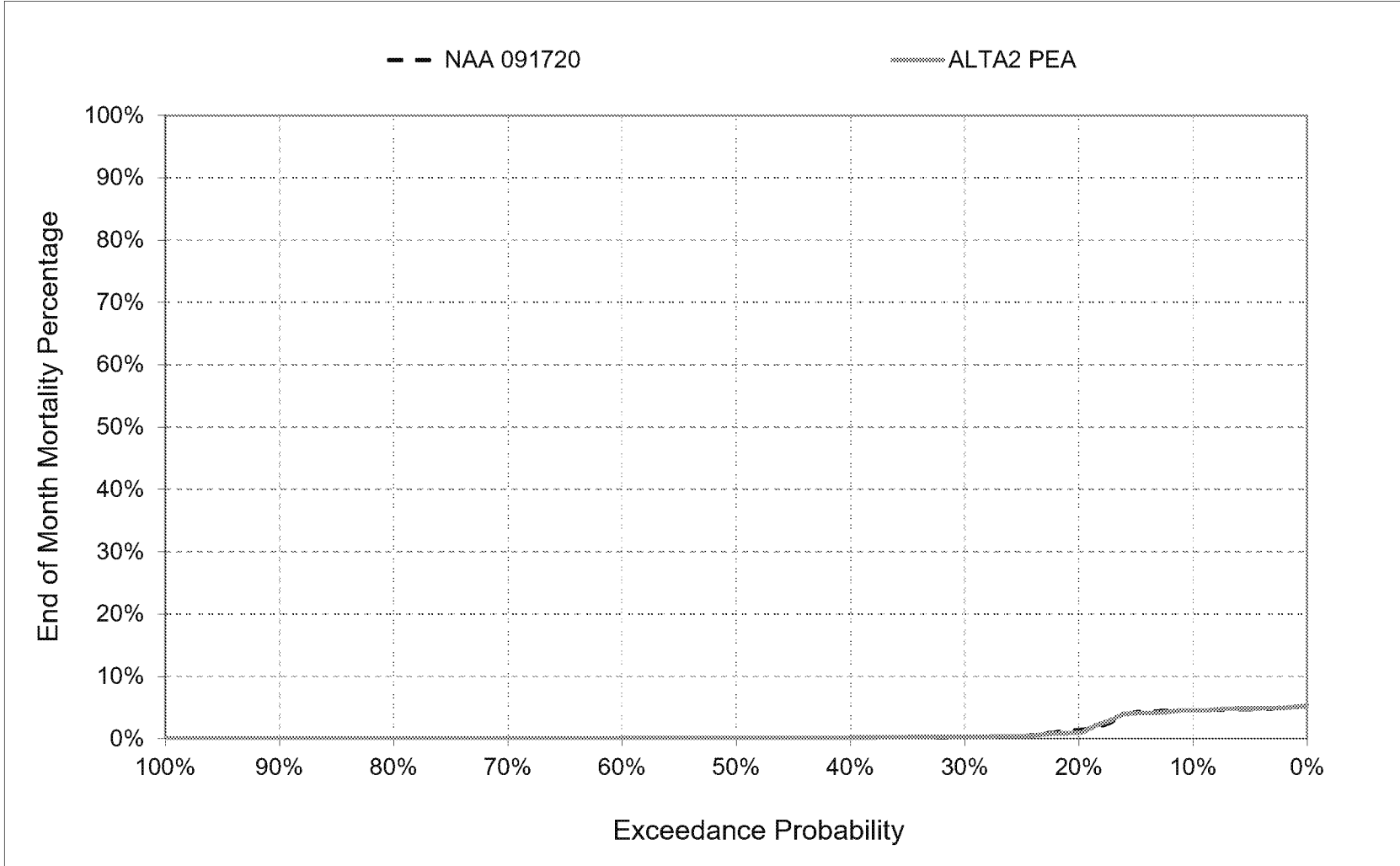
- Exceedance charts including all scenarios

Figure 1-1. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Anderson Model), May



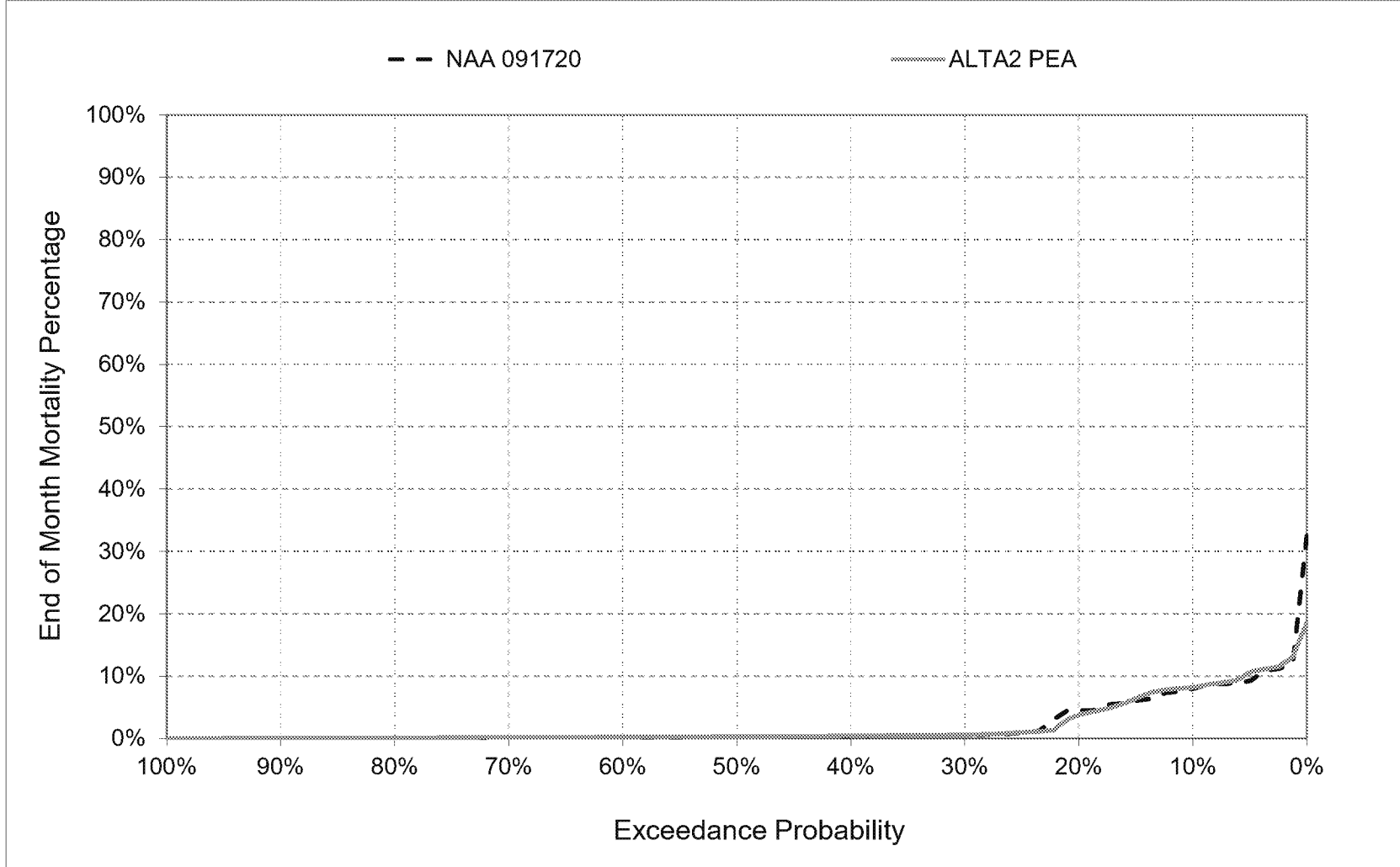
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 1-2. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Anderson Model), June



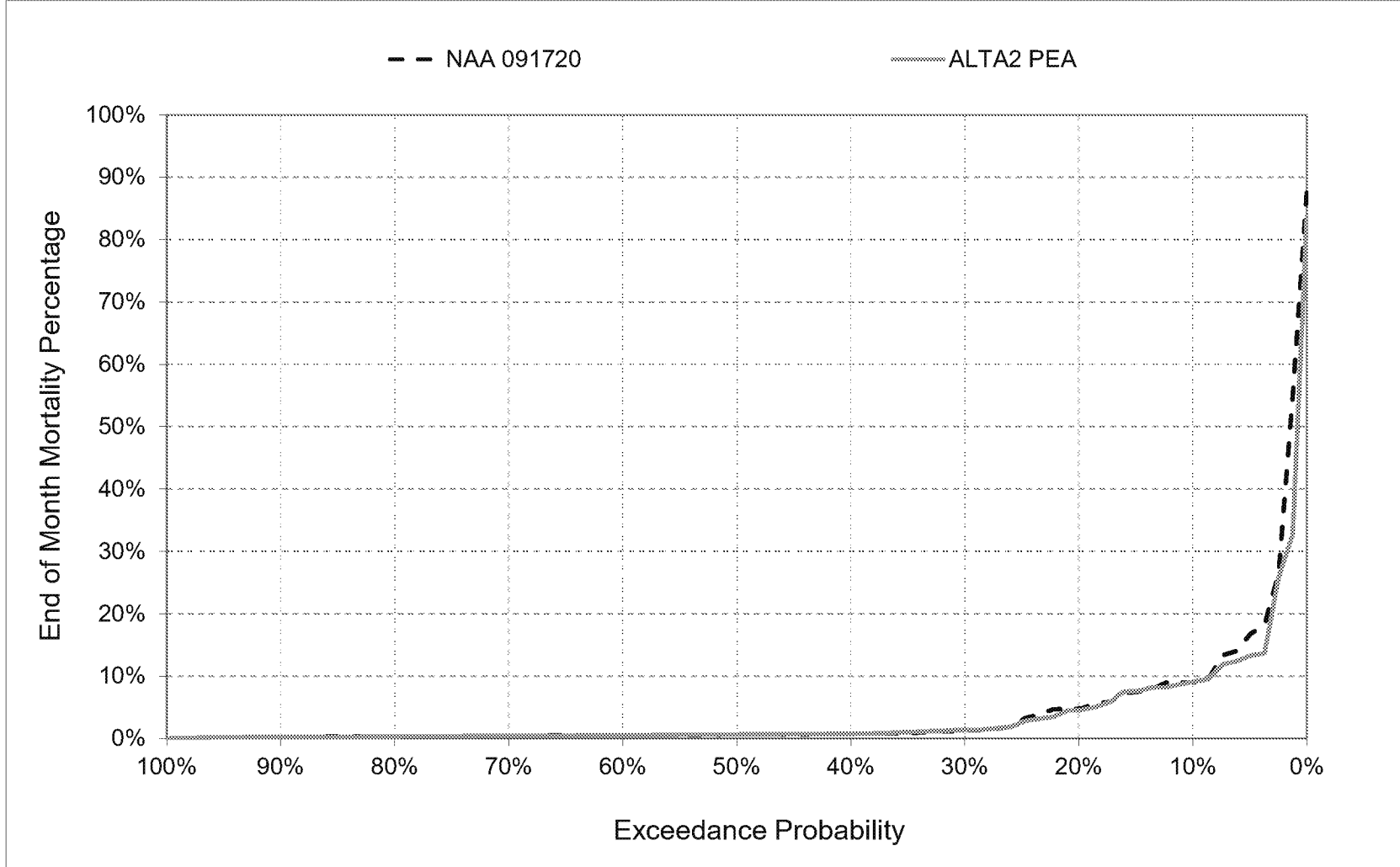
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 1-3. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Anderson Model), July



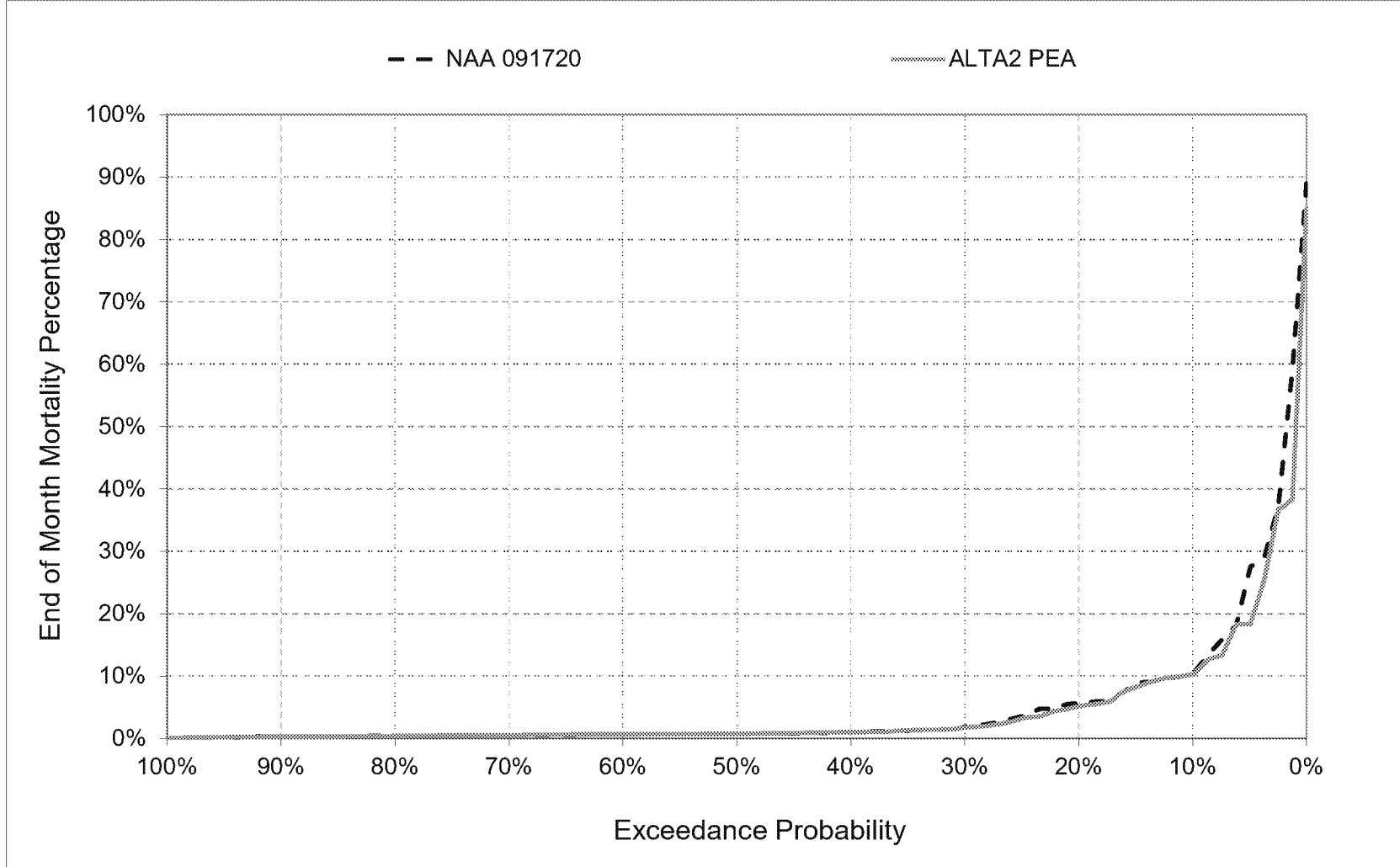
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 1-4. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Anderson Model), August



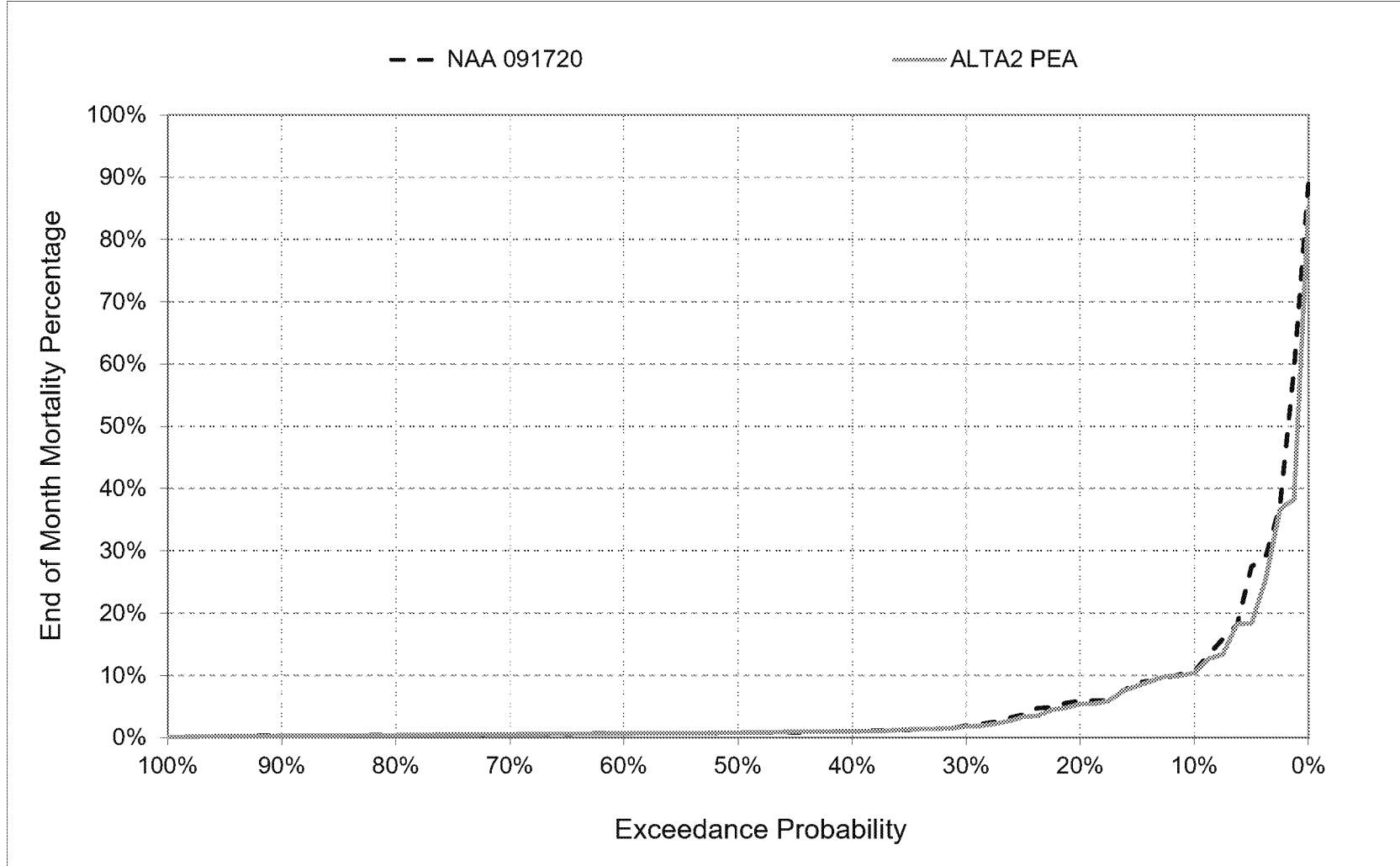
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 1-5. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Anderson Model), September



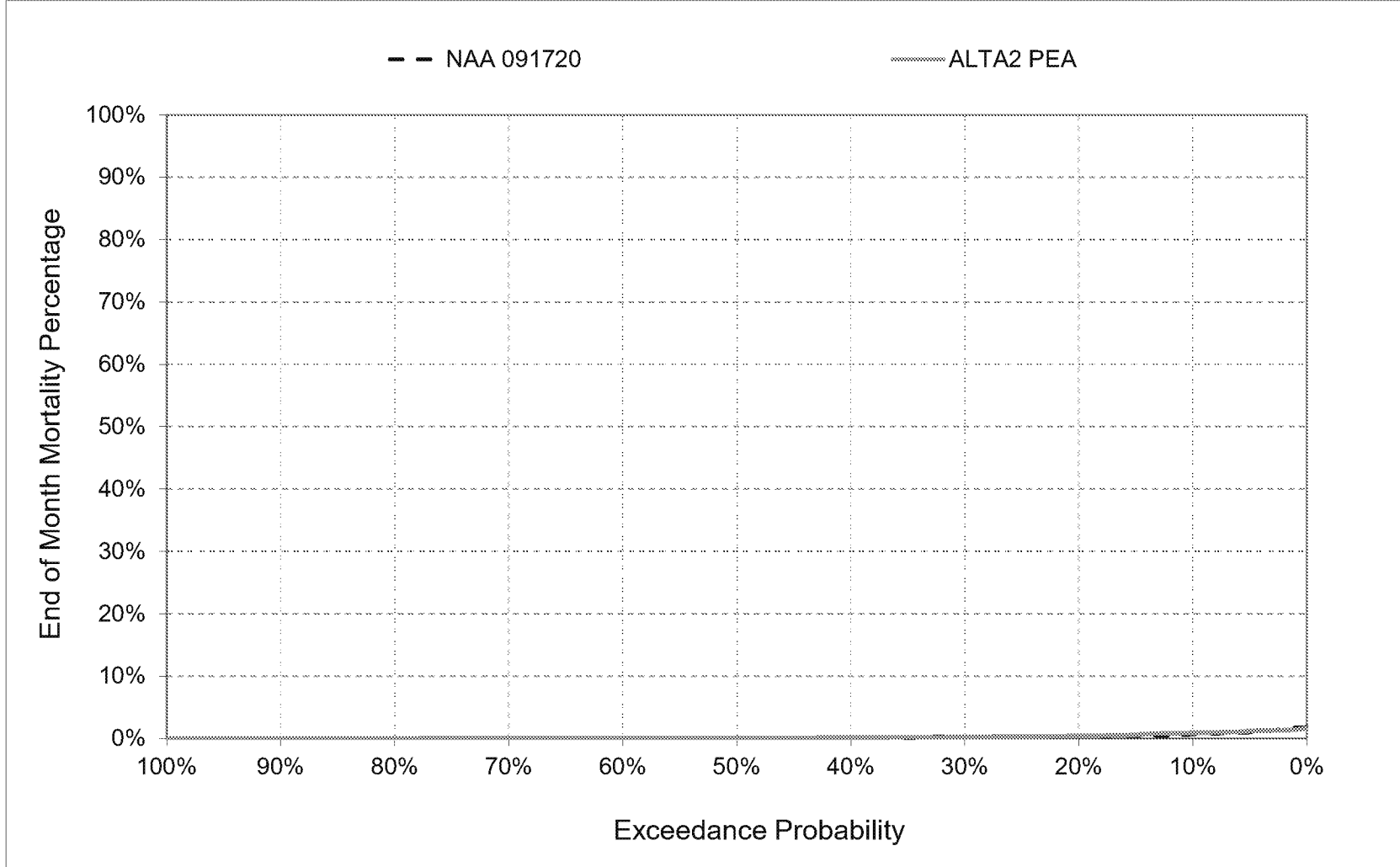
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 1-6. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Anderson Model), October



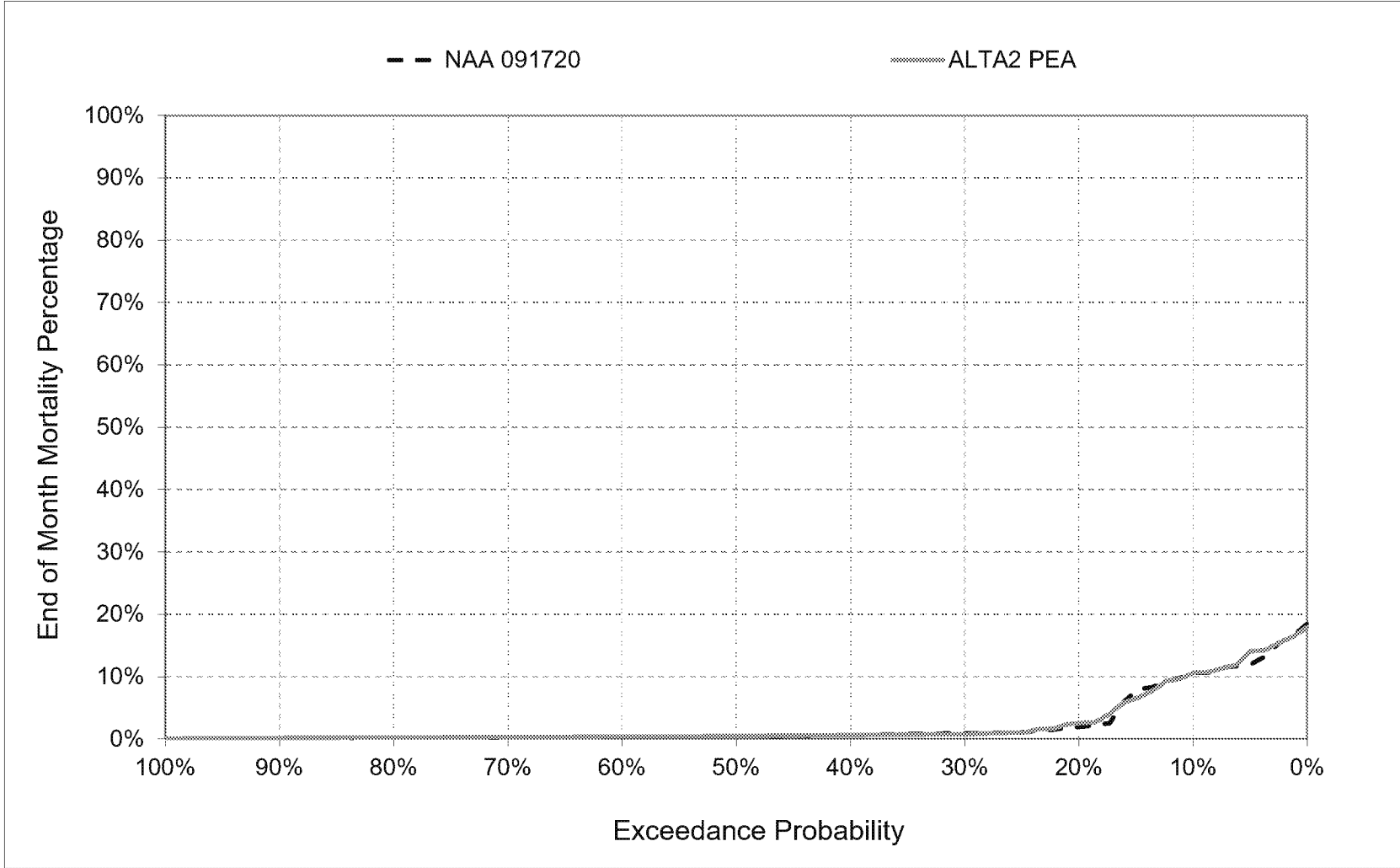
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 2-1. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Martin Model), May



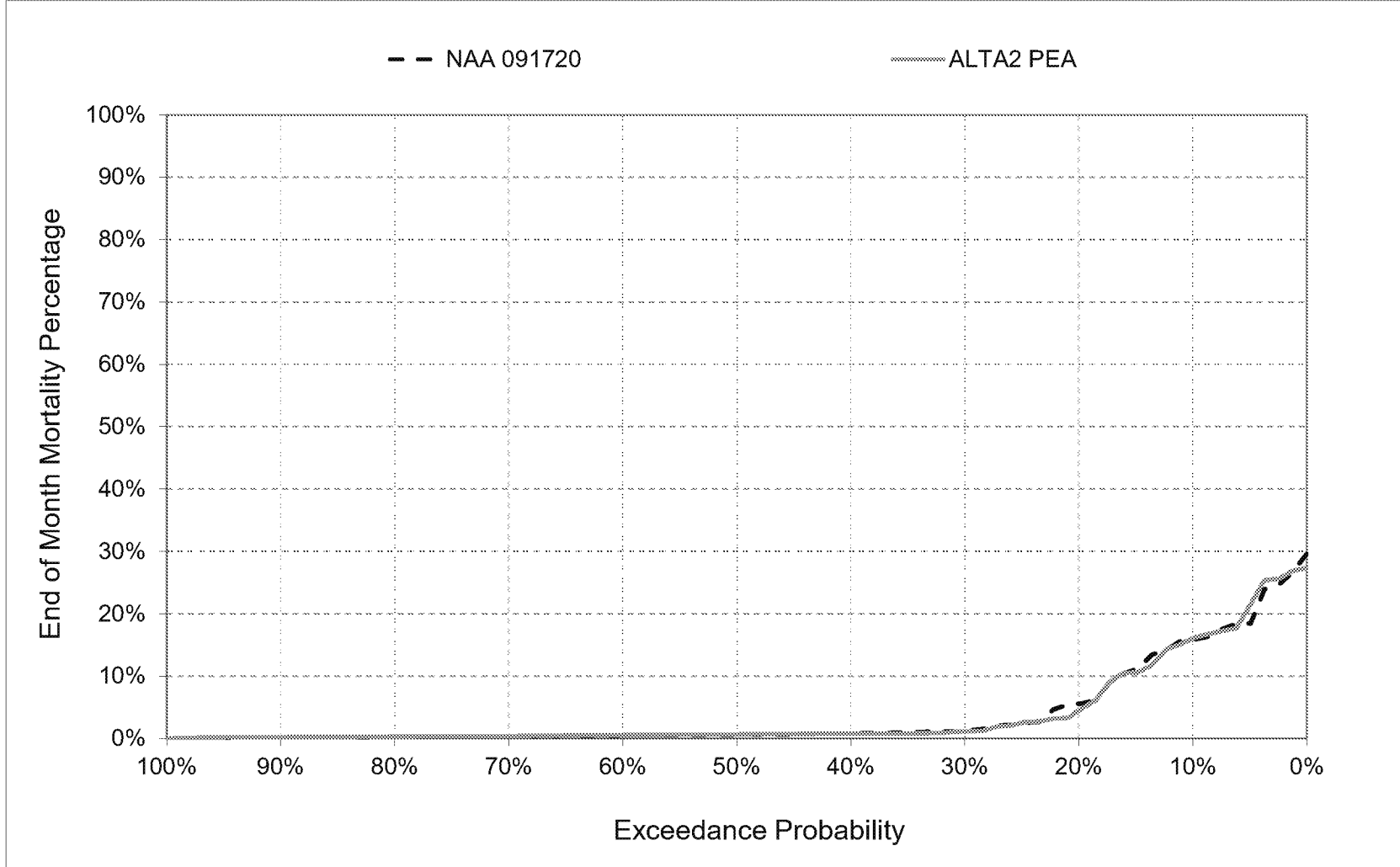
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 2-2. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Martin Model), June



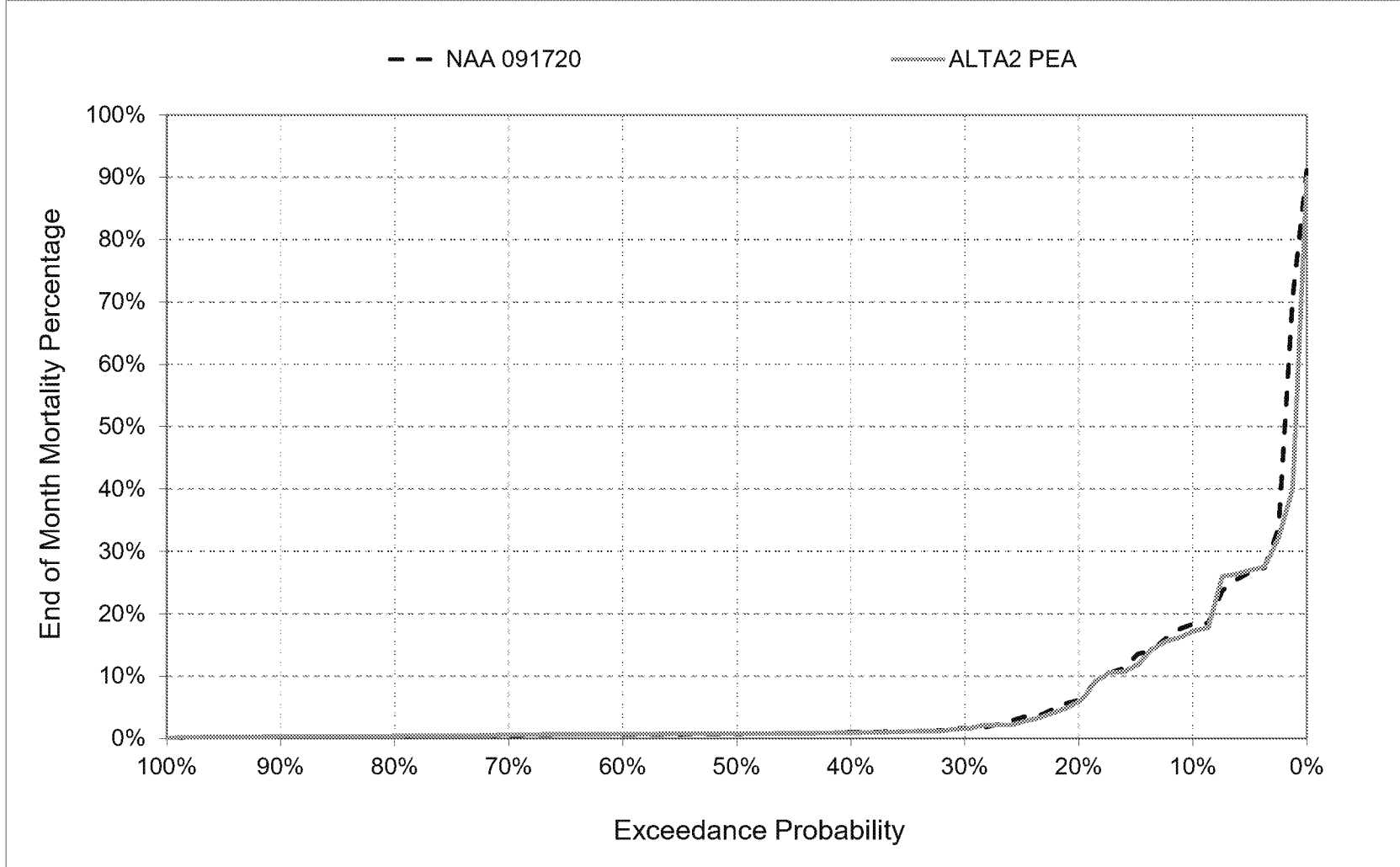
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 2-3. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Martin Model), July



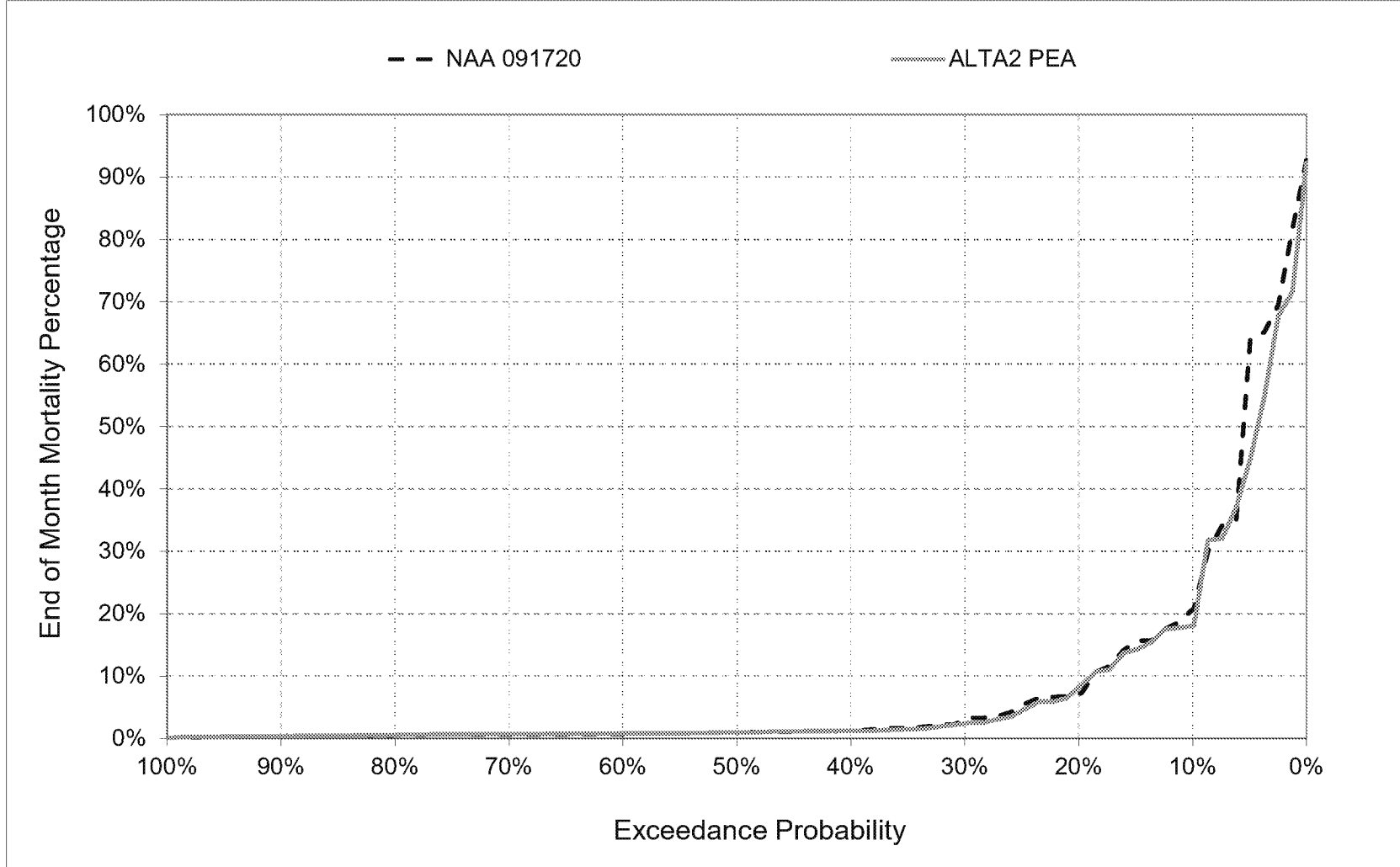
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 2-4. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Martin Model), August



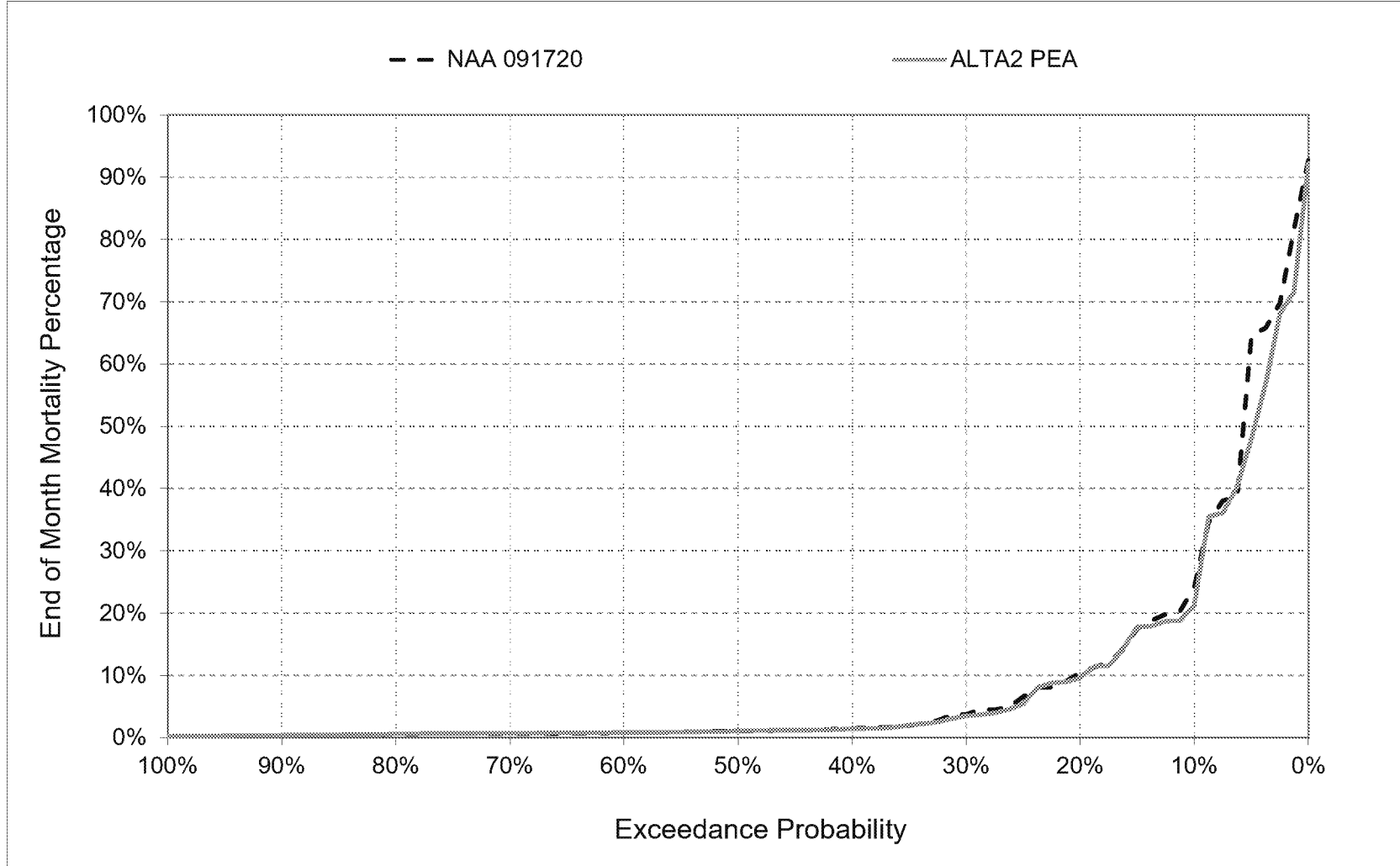
*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 2-5. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Martin Model), September



*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

Figure 2-6. Exceedance of Temperature-Based Egg Mortality for Winter Run Chinook Salmon (Martin Model), October



*All scenarios are simulated at Q0 with current climate and 0 cm sea level rise.

From: Micko, Steve/SAC [Steve.Micko@jacobs.com]
Sent: 10/6/2020 9:48:25 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Lecky, Jim [jim.lecky@icf.com]; Hendrick, Mike [mike.hendrick@icf.com]
CC: Hassrick, Jason [jason.hassrick@icf.com]; Greenwood, Marin [Marin.Greenwood@icf.com]; Wilder, Rick [rick.wilder@icf.com]; Steve Zeug [stevez@fishsciences.net]; Noble Hendrix [noblehendrix@gmail.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Thayer, Reed/SAC [Reed.Thayer@jacobs.com]
Subject: RE: Sites: HEC5Q Sacramento River Alt A2 Preliminary Effects Analysis Results

PS I should clarify that the exceedance plots are cumulative for each season. So, the August plots show the cumulative mortality that has occurred from May through August of each year in rank order.

From: Micko, Steve/SAC
Sent: Monday, October 5, 2020 11:02 PM
To: 'Alicia Forsythe' <aforsythe@sitesproject.org>; 'Spranza, John' <John.Spranza@hdrinc.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>; 'Lecky, Jim' <Jim.Lecky@icf.com>; 'Hendrick, Mike' <Mike.Hendrick@icf.com>
Cc: 'Hassrick, Jason' <jason.hassrick@icf.com>; 'Greenwood, Marin' <Marin.Greenwood@icf.com>; 'Wilder, Rick' <Rick.Wilder@icf.com>; Steve Zeug <stevez@fishsciences.net>; 'Noble Hendrix' <noblehendrix@gmail.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Thayer, Reed/SAC <Reed.Thayer@jacobs.com>
Subject: RE: Sites: HEC5Q Sacramento River Alt A2 Preliminary Effects Analysis Results

Hello again,

Anderson and Martin model results for winter run Chinook Salmon temperature-dependent early life stage mortality are attached.

Model results pdf includes monthly exceedance plots, displaying results from NAA 091720 and ALTA2 PEA, for each month of the temperature management period (May through October).

I also posted this pdf to the link below:

https://jacobsengineering-my.sharepoint.com/:f/g/personal/reed_thayer_jacobs_com/EhZ2PZme_SxNvOI6lDcEnLOBisiZwSGMb-SKOnXRn5D9mw?e=oQCMi9

Please let me know if you have any questions.

More to come soon!

Steve

From: Micko, Steve/SAC
Sent: Sunday, October 4, 2020 10:33 PM
To: 'Alicia Forsythe' <aforsythe@sitesproject.org>; 'Spranza, John' <John.Spranza@hdrinc.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>; 'Lecky, Jim' <Jim.Lecky@icf.com>; 'Hendrick, Mike' <Mike.Hendrick@icf.com>
Cc: 'Hassrick, Jason' <jason.hassrick@icf.com>; 'Greenwood, Marin' <Marin.Greenwood@icf.com>; 'Wilder, Rick' <Rick.Wilder@icf.com>; Steve Zeug <stevez@fishsciences.net>; 'Noble Hendrix' <noblehendrix@gmail.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Thayer, Reed/SAC <Reed.Thayer@jacobs.com>
Subject: Sites: HEC5Q Sacramento River Alt A2 Preliminary Effects Analysis Results

Hi all,

You may access NAA and ALTA2 Sacramento River HEC5Q results for the preliminary effects analysis at the link below:

https://jacobsengineering-my.sharepoint.com/:f:/r/personal/reed_thayer_jacobs_com/Documents/SitesTransmittal/Sites_20201004_ALTA2PEA_HEC5Q_SR?csf=1&web=1&e=rvjoQv

At this link you will find:

- [_Readme_20201004.pdf](#)
- Description of modeled scenarios and HEC5Q trend reporting spreadsheet
- [NODOS_Trend_Reporting_rev02cy_DV2_HistClim_HEC5Q__NAA_091720_ALTA2_092020_PrelimEffects.xlsm](#)
- Sacramento River HEC5Q trend reporting spreadsheet with the following modeled results for preliminary effects analysis:
 - No Action Alternative
 - ALTA2 PEA

The HEC5Q trend reporting spreadsheet contains storage, flow and temperature output parameters.

Note that some storage and flow locations in HEC5Q may coincide with locations available in CalSim II. For consistency, please observe storages and flows from CalSim II at boundary condition or controlled flow locations.

Anderson and Martin model results will be provided tomorrow.

Temperature results for the American and Feather Rivers should be ready by Tuesday, October 6th.

Please let me know if you have any questions.

Best,
Steve

Steve Micko, PE | Jacobs | Associate Water Resources Engineer
O:916.286.0358 | M:408.834.6614 | Steve.Micko@jacobs.com
2485 Natomas Park Drive Suite 600 | Sacramento, CA 95833

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From: Micko, Steve/SAC [Steve.Micko@jacobs.com]
Sent: 10/6/2020 1:36:33 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Lecky, Jim [jim.lecky@icf.com]; Hendrick, Mike [mike.hendrick@icf.com]
CC: Hassrick, Jason [jason.hassrick@icf.com]; Greenwood, Marin [Marin.Greenwood@icf.com]; Wilder, Rick [rick.wilder@icf.com]; Steve Zeug [stevez@fishsciences.net]; Noble Hendrix [noblehendrix@gmail.com]; Leaf, Rob/SAC [Rob.Lead@jacobs.com]; Thayer, Reed/SAC [Reed.Thayer@jacobs.com]
Subject: Sites: HEC5Q American and Feather Rivers Alt A2 Preliminary Effects Analysis Results

Hi all,

You may access NAA and ALTA2 Sacramento and American River HEC5Q, and Feather River Reclamation Temperature Model results for the preliminary effects analysis at the link below:

https://jacobsengineering-my.sharepoint.com/:f/g/personal/reed_thayer_jacobs_com/EorixTN6Z2plpyDRv8y1bLUBft437Lcw93FeThCrxOgQsQ?e=XQflq6

At this link you will find:

- [_Readme_20201006.pdf](#)
- Description of modeled scenarios and temperature results trend reporting spreadsheet
- [NODOS_Trend_Reporting_rev03cy_DV2_HistClim_HEC5Q_RecTemp__NAA_091720_ALTA2_092020_PrelimEffects.xlsx](#)
- Sacramento, American, and Feather River temperature trend reporting spreadsheet with the following modeled results for preliminary effects analysis:
 - No Action Alternative
 - ALTA2 PEA

The HEC5Q and Reclamation Temperature Model trend reporting spreadsheet contains storage, flow and temperature output parameters.

Note that some storage and flow locations in HEC5Q and Reclamation Temperature Model may coincide with locations available in CalSim II.

For consistency, please observe storages and flows from CalSim II at boundary condition or controlled flow locations.

Please let me know if you have any questions.

Best,
Steve

Steve Micko, PE | Jacobs | Associate Water Resources Engineer
O:916.286.0358 | M:408.834.6614 | Steve.Micko@jacobs.com
2485 Natomas Park Drive Suite 600 | Sacramento, CA 95833

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Draft_0004048

From: Williams, Nicole [Nicole.Williams@icf.com]
Sent: 10/7/2020 7:52:22 AM
To: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Briard, Monique [Monique.Briard@icf.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]
Subject: RE: Tomorrow's PD agenda items

Hi Laurie –

Is the TRR part of Alternative 2 or 1, or both alternatives? Is it expected to be integrated into the chapters that we are working on now? If so, it would ultimately need all construction mean/methods/etc. similar to all other facilities, and that information would ultimately make its way into Appendix 2C.

Highlighted below. I apologize if I missed something, but we have not been reviewing the TMs since our kick off. I thought based on our conversations last week/previous week Integration was working to edit Chapter 2 as Integration/HR/HC continue to generate the information to respond to gray italicized text. An example of this is Jelica's information that came in on Monday, which I said I would take the lead on incorporating, and have done so in my author's version of Chapter 2, but not the Sites Authority Chapter 2 (will do so today). We looked through the TMs to prepare for our kick off, but have not gone back to them.

What is the timeline for sharing the files with Yoche Dehe?

Cheers, Nicole

NICOLE L. WILLIAMS
Senior Environmental Planner
ICF
o 916.231.9614
icf.com

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 07, 2020 7:35 AM
To: Briard, Monique <Monique.Briard@icf.com>; Williams, Nicole <Nicole.Williams@icf.com>
Cc: Alicia Forsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: Tomorrow's PD agenda items

Good Morning –

Thank you Nicole for leading the discussion on the construction appendix. We are hoping you can provide a walk through so everyone understands the purpose and priorities/timing for information needs. Jeff Herrin was trying to set up a meeting to discuss the tables with Integration yesterday, I was unable to join that meeting but told him we would be discussing the appendix today. I'm sure he will have questions.

We can either schedule a call this week or discuss the TRR on our Monday call. I know that Ali and others are focused on the EPP Work Group meeting but I can look for a time. Meanwhile, I will get a copy of the figure with the new TRR alternative from Henry.

Regarding Chapter 2 data gaps –has your team updated the text of Chapter 2 based on the final tech memos? We need to have that done before I can have any live edit meetings with the HR and HC teams. Right now I am focusing on some of the key areas - during our call with Colusa County on Friday and I need to coordinate with Henry and the HR-Roadway team to make sure we are appropriately characterizing the roads and roadway nomenclature.

Also, thank you for QCing the GIS for missing facilities – we have promised to share the GIS files with the Yocha Dehe so it is important that we send them a complete set.

I think the best way to submit questions that you have from the authors would be through the data needs tracking process that Henry and Jelica are developing. I will check in with Henry and Jelica to confirm status and applicability to the EIR/EIS process.

Thank you,

Laurie

From: Briard, Monique [<mailto:Monique.Briard@icf.com>]

Sent: Tuesday, October 6, 2020 5:02 PM

To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

Cc: Williams, Nicole <Nicole.Williams@icf.com>

Subject: Tomorrow's PD agenda items

Laurie and Ali,

Nicole will facilitate the discussion tomorrow on the construction appendix. Not sure if she will need the full 55 min but let's keep it and we can then have the option for other topics if we don't use the full allotted time. I've let Nicole know that we discussed adding a new alignment for TRR to be included with Alt 2 and that you would be setting up a call to discuss it with us this week. A few other PD items that we can either discuss tomorrow/add to the agenda or include in the separate TRR call are:

- Status of Chapter 2 data gap information updates
- Best way to submit questions that our EIR/S technical authors have
- List of potential missing facilities from the draft Alt 1 GIS data files. Nicole and Dave have been QCing the GIS files to the KMZ created for technical authors and we will have the list for you tomorrow.

Thanks,
Monique

Monique Briard | Sr. Managing Director, Environmental Planning | +1.916.231.9551 direct
| monique.briard@icf.com | icf.com

ICF | 980 9th Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.842.0894 mobile


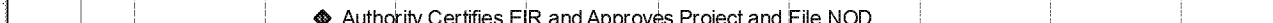

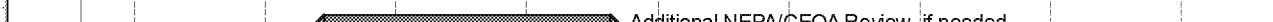








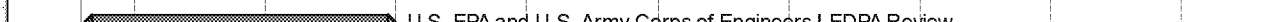



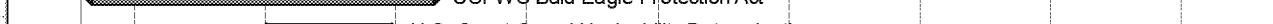
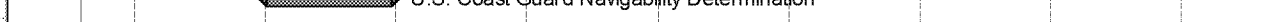

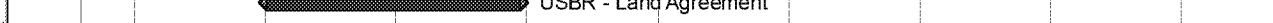


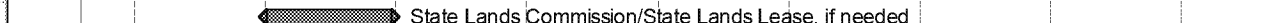








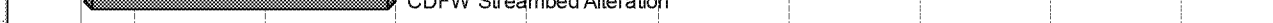








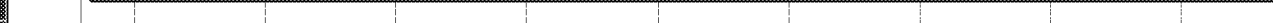





Activity ID	Activity Name	Remaining Duration	Start	Finish	2020		2021		2022		2023		2024		2025		2026		2027		2028		2029			
					Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
SITES PROJECT					2414	02-Jan-20 A	01-Nov-29																			
MILESTONES					2393	13-Apr-20 A	01-Nov-29																			
MS-005-VP	Approve Preferred Project	0		13-Apr-20 A	◆ Approve Preferred Project																					
MS-007-PD	Preliminary Project Description Complete	0		31-Aug-20	◆ Preliminary Project Description Complete																					
MS-011-DE	Release Revised Draft EIR/EIS for Public Review	0		06-Jul-21	◆ Release Revised Draft EIR/EIS for Public Review																					
MS-020-CS	WIIN Construction Start Date	0		16-Dec-21*	◆ WIIN Construction Start Date																					
MS-250-FE	Final EIR/EIS	0		13-May-22	◆ Final EIR/EIS																					
MS-450-RD	ROD Signed	0		13-Jun-22	◆ ROD Signed																					
MS-500-CS	Construction Starts	0		17-Jul-23	◆ Construction Starts																					
MS-510-CC	Construction Complete	0		27-Nov-28	◆ Construction Complete																					
MS-600-PB	Public Benefits	0		01-Nov-29	◆ Public Benefits																					
VALUE PLANNING					0	02-Jan-20 A	13-Apr-20 A	▶ VALUE PLANNING																		
	Value Planning Analysis	0	02-Jan-20 A	03-Mar-20 A	▶ Value Planning Analysis																					
	Value Planning Report	0	14-Feb-20 A	13-Apr-20 A	▶ Value Planning Report																					
	Preferred Project	0	13-Apr-20 A	13-Apr-20 A	◆ Preferred Project																					
PROJECT DESCRIPTION					21	11-Feb-20 A	31-Aug-20	▶ PROJECT DESCRIPTION																		
	Determine Needs	0	11-Feb-20 A	28-Apr-20 A	▶ Determine Needs																					
	Components	21	01-Apr-20 A	31-Aug-20	▶ Components																					
	Develop Project Description	21	29-Apr-20 A	31-Aug-20	▶ Develop Project Description																					
	Preliminary Project Description Complete	0	31-Aug-20	31-Aug-20	◆ Preliminary Project Description Complete																					
OPERATIONS MODELING					2198	02-Jan-20 A	03-Jan-29	▶ OPERATIONS MODELING																		
	Value Planning Operations	21	02-Jan-20 A	31-Aug-20	▶ Value Planning Operations																					
	Refine Operational Parameters	0	10-Feb-20 A	12-Jun-20 A	▶ Refine Operational Parameters																					
	Full Operations Analysis	145	15-Jun-20 A	19-Feb-21	▶ Full Operations Analysis																					
	EIR/EIS AND BA/ITP Documentation	55	09-Nov-20	22-Jan-21	▶ EIR/EIS AND BA/ITP Documentation																					
	Operations Plan, Ver 1	232	02-Jan-20 A	23-Nov-21	▶ Operations Plan, Ver 1																					
	Operational Agreements	232	04-Jan-21	23-Nov-21	▶ Operational Agreements																					
	Bridging Analysis for Baseline	91	04-Jan-21	10-May-21	▶ Bridging Analysis for Baseline																					
	Bridging Analysis for CWC/WSIP Benefits	105	01-Feb-21	25-Jun-21	▶ Bridging Analysis for CWC/WSIP Benefits																					
	Final Sites-Reclamation Operating Agreement	328	07-Jul-21	07-Oct-22	▶ Final Sites-Reclamation Operating Agreement																					
	Final Sites-DWR Operating Agreement	328	07-Jul-21	07-Oct-22	▶ Final Sites-DWR Operating Agreement																					
	Final TCCA Facility Use Agreement	328	07-Jul-21	07-Oct-22	▶ Final TCCA Facility Use Agreement																					
	Final GCID Facility Use Agreement	328	07-Jul-21	07-Oct-22	▶ Final GCID Facility Use Agreement																					
	Final CBDA Facility Use Agreement	328	07-Jul-21	07-Oct-22	▶ Final CBDA Facility Use Agreement																					
	Operations Plan, Version 2	370	07-Jul-21	06-Dec-22	▶ Operations Plan, Version 2																					
	Annual Operating Plan Process and Procedures	519	11-Oct-21	06-Oct-23	▶ Annual Operating Plan Process and Procedures																					
	Provide Operations Input on Response to Comments and Final EIR/EIS	20	11-Oct-21	08-Nov-21	▶ Provide Operations Input on Response to Comments and Final EIR/EIS																					
	Member Portal/Accounting System	0	03-Jan-29	03-Jan-29	▶ Member Portal/Accounting System																					
	Operations Support	819	21-Jun-21	09-Aug-24	▶ Operations Support																					
EIR/EIS					1056	11-Feb-20 A	19-Aug-24	▶ EIR/EIS																		
	Work Plan & Outline	21	11-Feb-20 A	31-Aug-20	▶ Work Plan & Outline																					
	Project Description Chapter	81	01-Sep-20	22-Dec-20	▶ Project Description Chapter																					
	Draft EIR/EIS	221	01-Sep-20	06-Jul-21	▶ Draft EIR/EIS																					
	Public Review	60	07-Jul-21	05-Sep-21	▶ Public Review																					
	Begin Preparation of the Admin Final EIR/EIS	40	23-Aug-21	18-Oct-21	▶ Begin Preparation of the Admin Final EIR/EIS																					
	Summary Report FOR CWC	26	18-Oct-21	23-Nov-21	▶ Summary Report FOR CWC																					
	Final EIR/EIS	149	18-Oct-21	13-May-22	▶ Final EIR/EIS																					

Actual Work
 Critical Remaining Work
 Summary
 ◆ Milestone



Sites Reservoir Project

Date: 01-Oct-20

Activity ID	Activity Name	Remaining Duration	Start	Finish	2020		2021		2022		2023		2024		2025		2026		2027		2028		2029					
					Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q		
NOD, Findings of Fact, Statement of Overriding Considerations, Mitigation Monitoring Program		32	22-Apr-22	07-Jun-22																								
Authority Certifies EIR and Approves Project and File NOD		1	07-Jun-22	08-Jun-22																								
ROD		22	13-May-22	13-Jun-22																								
Additional NEPA/CEQA Review, if needed		570	14-Jun-22	19-Aug-24																								
PERMITTING		1077	01-Oct-20	15-Nov-24																								
CWC Feasibility Report		298	01-Oct-20	23-Nov-21																								
Geotechnical Field Monitoring		1056	30-Oct-20	15-Nov-24																								
FEDERAL PERMITS		1133	14-Apr-20 A	04-Dec-24																								
Phase 1 Environmental Site Assessments		763	03-Jan-22	04-Dec-24																								
U.S. Army Corps of Engineers CWA 404, Rivers and Harbors Act Section 10		612	14-Apr-20 A	06-Dec-22																								
U.S. Army Corps of Engineers Rivers and Harbors Act Section 14, Section 408		591	01-Sep-20	06-Dec-22																								
U.S. EPA and U.S. Army Corps of Engineers LEDPA Review		591	01-Sep-20	06-Dec-22																								
Advisory Council on Historic Preservation NHPA Section 106		338	01-Sep-20	16-Dec-21																								
USFWS and NMFS ESA Section 7		359	14-Apr-20 A	16-Dec-21																								
USFWS Bald Eagle Protection Act		685	01-Sep-20	17-Apr-23																								
U.S. Coast Guard Navigability Determination		253	03-Jan-22	21-Dec-22																								
USBR Warren Act		371	11-Jan-21	13-Jun-22																								
USBR - Land Agreement		506	03-Jan-22	11-Dec-23																								
STATE PERMITS AND AGREEMENTS		2131	01-Sep-20	31-Oct-28																								
Caltrans Encroachment & Transportation		761	03-Jan-22	02-Dec-24																								
State Lands Commission/State Lands Lease, if needed		253	03-Jan-22	21-Dec-22																								
Central Valley Flood Protection Board Levee Encroachment		591	01-Sep-20	06-Dec-22																								
SWRCB Water Rights Permit		684	01-Sep-20	17-Apr-23																								
SWRCB NPDES and CWA Section 402 (Multiple permits based on construction packages and/or ROW access)		1234	12-Dec-23	01-Sep-28																								
SWRCB Waste Discharge Requirements (Multiple permits based on constr. packages and/or ROW access)		1234	12-Dec-23	01-Sep-28																								
RWQCB CWA Section 401 Water Quality Certification		445	24-Nov-25	06-Aug-27																								
DWR DSOD (Multiple permits based on construction packages and/or ROW access)		509	17-Sep-24	28-Aug-26																								
Cal OSHA Permits (Multiple permits based on construction packages and/or ROW access)		1276	12-Dec-23	31-Oct-28																								
CDFW Streambed Alteration		591	01-Sep-20	06-Dec-22																								
CDFW Section 2081		419	01-Sep-20	08-Apr-22																								
NAHC/Local Tribes AB 52 Consultation		419	01-Sep-20	08-Apr-22																								
SMARA		140	18-Oct-21	29-Apr-22																								
LOCAL AGENCY PERMITS AND APPROVALS		400	03-Jan-22	14-Jul-23																								
Colusa County		400	03-Jan-22	14-Jul-23																								
Glenn County		400	03-Jan-22	14-Jul-23																								
Yolo County		400	03-Jan-22	14-Jul-23																								
MITIGATION		2391	01-Sep-20	30-Oct-29																								
FEASIBILITY LEVEL GEOTECH		359	25-Mar-20 A	16-Dec-21																								
Geotechnical Permitting & Planning		84	25-Mar-20 A	26-Nov-20																								
Field Investigation		103	30-Oct-20	23-Mar-21																								
Data Evaluation and Reporting		295	30-Oct-20	16-Dec-21																								
FEASIBILITY ENGINEERING		456	02-Jan-20 A	02-May-22																								
PROP 1		1491	22-Oct-20	10-Jul-26																								
CWC Feasibility Review		180	25-Mar-21	03-Dec-21																								
Revised Public Benefits		0	22-Oct-20	22-Oct-20																								
CWC Review of Public Draft EIR/EIS		30	07-Jul-21	17-Aug-21																								

Actual Work
 Critical Remaining Work
 Summary
 Remaining Work
 ◆ Milestone



Activity ID	Activity Name	Remaining Duration	Start	Finish	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
					Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
	CWC Determination of Feasibility	0	03-Dec-21	03-Dec-21				◆						
	CWC All Permits Acquired for Construction Funding	0	10-Jul-26	10-Jul-26									◆	
	RIGHT OF WAY (ROW)	1981	01-Sep-20	04-Apr-28										
	Rights of Entry	508	01-Sep-20	11-Aug-22										
	Acquisitions (Phased)	1542	03-Jan-22	30-Nov-27										
	Relocation Assistance, as needed	1119	04-Oct-23	17-Jan-28										
	Acquisition Closeout and Transfer of Jurisdiction as needed	90	01-Dec-27	04-Apr-28										
	DESIGN LEVEL GEOTECH & SURVEY	253	03-Jan-22	21-Dec-22										
	Design Level Survey	147	03-Jan-22	26-Jul-22										
	Design Level Geotech	253	03-Jan-22	21-Dec-22										
	PRELIMINARY AND FINAL ENGINEERING	1776	11-Jan-21	01-Nov-27										
	Project Delivery Method (assumes mixed contracting)	253	11-Jan-21	29-Dec-21										
DB-100	Design Packages and Project Delivery Method Determinations (Assumes Mixed Contracting)	253	11-Jan-21	29-Dec-21										
	Preliminary Engineering	506	03-Jan-22	11-Dec-23										
	Final Engineering	509	12-Dec-23	21-Nov-25										
	Recreation Facilities Design/Engineering	506	24-Nov-25	01-Nov-27										
	CONSTRUCTION	1643	17-Jul-23	31-Oct-29										
	Conveyance Features	1276	12-Dec-23	31-Oct-28										
	Reservoir Features	1401	17-Jul-23	27-Nov-28										
	Recreational Features	520	04-Nov-27	31-Oct-29										
	OPERATIONS	371	01-Jun-28	01-Nov-29										
	Early Operations (Commissioning)	370	01-Jun-28	31-Oct-29										
	Full Operations Begins	0	01-Nov-29	01-Nov-29										

Actual Work
 Remaining Work
 Critical Remaining Work
 Summary
 Milestone



From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/7/2020 11:06:45 AM
To: Janis Offermann [janis@horizonh2o.com]; Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Colusa Tribe

Hi Janis –

Thanks for the update. Apparently there are still some missing GIS files for Alternative 1 – ICF is currently QCing the files. I have asked the team to provide a schedule for when we have a complete set of files that we can share with the Yocha Dehe.

Thanks,

Laurie

From: Janis Offermann [mailto:janis@horizonh2o.com]
Sent: Wednesday, October 7, 2020 10:42 AM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Colusa Tribe

Hi, all

Just an FYI that I heard back from Colusa this morning. Molly will check with the council members who might want to participate in the meeting and get back to me with some prospective dates. She asked if we would come to their offices or if it would be a conference call. I told her we had been doing video conference calls so that we could share info over the computer but that we could also come to the office if they preferred. She said that she would check with their preference. I imagine they will be OK with a video conference.

Laurie, did you determine if the KMZ for Alternative 1 is available? I had an email from the Yocha Dehe GIS specialist this morning, just to make that re-acquaintance. I let him know we would send the info as soon as it was available.

Thanks
janis

Janis Offermann

Cultural Resources Practice Leader
Horizon Water and Environment
400 Capitol Mall, Suite 2500
Sacramento, CA 95814
916.465.8076 – office
530.220.4918 – mobile

From: Herrin, Jeff [jeff.herrin@aecom.com]
Sent: 10/8/2020 8:19:52 AM
To: Micko, Steve/SAC [Steve.Micko@jacobs.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Thayer, Reed/SAC [Reed.Thayer@jacobs.com]; Kasberg, Kevin/SAC [Kevin.Kasberg@jacobs.com]; Carlson, Nik [nik.carlson@aecom.com]
Subject: RE: Sites: Preliminary Model Results
Attachments: Sites_A11 Physical and Economic Benefits Summary Tables.pdf

I took a very cursory look at the results. I don't have an apples to apples comparison because the WSIP application had everything in 2030 and 2070 results at delivery to the point of use. For 2030, the application has an annual average delivery of 39 TAF delivered to the Yolo Bypass for smelt and 35 TAF delivered to the refuges. The results provided have 32 TAF for the Yolo Bypass and 21 TAF/yr for refuges. We've probably dropped a little more than 18% on the Yolo Bypass benefits. We've dropped over 40% on refuge benefits because the modeling results don't account for carriage water. We are probably dropping below \$816M in eligible benefits, but should re-gain some when we have the modeling results for both 2030 and 2070. I believe the refuge water has a higher unit value, so we should try to see if we can increase that benefit. Eventually, this may include shifting some water from the Yolo Bypass to the refuge category.

Jeff

From: Micko, Steve/SAC <Steve.Micko@jacobs.com>
Sent: Wednesday, October 07, 2020 8:40 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <erin.heydinger@hdrinc.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Thayer, Reed/SAC <Reed.Thayer@jacobs.com>; Kasberg, Kevin/SAC <Kevin.Kasberg@jacobs.com>
Subject: [EXTERNAL] Sites: Preliminary Model Results

Hi Jeff,

Feasibility report for preliminary effects analysis is attached.
Please focus your analysis on "ALT A2 092220 rev03 (91 TAF OpFlex) PEA" model results.

As discussed earlier today, these results are subject to change.

Let us know if you have any questions.

Best,
Steve

Steve Micko, PE | Jacobs | Associate Water Resources Engineer
O:916.286.0358 | M:408.834.6614 | Steve.Micko@jacobs.com
2485 Natomas Park Drive Suite 600 | Sacramento, CA 95833

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Draft_0004055

Physical and Economic Benefits Summary

August 2017

Part 1. Physical and Economic Benefits. Repeat this block for each category of public or non-public benefit quantified							
Ecosystem							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Anadromous Fish & Other Aquatic					Notes:		
2. Physical Benefit Measurement Units: Habitat Units/Yr					Notes:		
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-5	45,484	44,945	539	41,253	39,431	1822
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-6	na	na	\$25.6	na	na	\$86.6
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	na	na	\$62.35	na	na	\$145.5

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Part 1. Physical and Economic Benefits. Repeat this block for each category of public or non-public benefit quantified							
Ecosystem							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Incremental Level 4 Refuge					Notes:		
2. Physical Benefit Measurement Units: TAF/Yr					Notes:		
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-7	35	0	35	31	0	31
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-7	\$16.1	\$0	\$16.1	\$24.6	\$0	\$24.6
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	na	na	\$62.4	na	na	\$145.5

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Enter Benefit Category here ¹							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Oroville Coldwater Pool					Notes:		
2. Physical Benefit Measurement Units: TAF/Yr					Notes:		
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-8	2,786	2,760	26	2,651	2,620	31
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-9	na	na	\$11.8	na	na	\$25.0
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	na	na	\$62.4	na	na	\$145.5

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Part 1. Physical and Economic Benefits. Repeat this block for each category of public or non-public benefit quantified							
Ecosystem							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Yolo Bypass					Notes:		
2. Physical Benefit Measurement Units: TAF/Yr					Notes:		
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-10	56	17	39	57	18	39
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-10	na	na	\$8.9	na	na	\$9.2
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	na	na	\$62.4	na	na	\$145.5

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Recreation							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Recreation					Notes:		
2. Physical Benefit Measurement Units: Increased Visitor Days					Notes:		
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-11	186,829	46,707	140,122	186,829	46,707	140,122
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-12	\$9.3	\$2.3	\$7.0	\$9.3	\$2.3	\$7.0
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	\$9.3	\$2.3	\$7.0	\$9.3	\$2.3	\$7.0

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Flood Control							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Flood Control					Notes:		
2. Physical Benefit Measurement Units: Acres					Notes: Area of reduced flood risk - 100 Year Flood Event		
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-12	9,570	0	9,570	9,570	0	9,570
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-13	\$4.4	\$0	\$4.4	\$4.4	\$0	\$4.4
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	\$4.4	\$0	\$4.4	\$4.4	\$0	\$4.4

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Part 1. Physical and Economic Benefits. Repeat this block for each category of public or non-public benefit quantified							
Non-public benefit							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Water Supply				Notes: Includes M&I, Agricultural and Recaptured Supplies			
2. Physical Benefit Measurement Units: TAF/Yr				Notes:			
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-13	7,113	6,859	254	6,607	6,312	295
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-14	na	na	\$89.0	na	na	\$251.5
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	na	na	\$108.5	na	na	\$271.0

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Non-public benefit							
Non-public benefit							
Repeat Rows 1 through 4 for every quantified physical benefit in this benefit category							
1. Physical Benefit Name: Hydropower (System)				Notes:			
2. Physical Benefit Measurement Units: MWh/Yr				Notes: Average Annual Hydropower Generation			
	Enter Page Number from Application	2030			2070		
		With Project	Without Project	Difference	With Project	Without Project	Difference
3. Net Physical Benefit Measurement ²	A3-14	215,542	0	215,542	215,542	0	215,542
4. Annual Economic Benefit, 2015 \$ Million/Yr	A3-15	\$19.5	\$0	\$19.5	\$19.5	\$0	\$19.5
5. Total Annual Monetized Benefit for the Category (sum of all row 4s.)	A3-3	na	na	\$108.5	na	na	\$271.0

¹ Enter one of these benefits: Ecosystem, Water Quality, Flood Control, Emergency Response, Recreation, or Non-public benefit

² Net of any non-mitigated physical effects

Part 2. Total Economic Net Benefits and Allocated Cost by Benefit Category in 2015 \$ Million									
	Enter Page Number from Application	Ecosystem	Water Quality	Flood Control	Emergency Response	Recreation	Total Public Benefits	Non-Public Benefits	Total public and non-public benefits ¹
Sum of annual economic net benefits by type									
Sum of 2030 benefits from Part 1, Row 5	A3-3	\$62.35	\$0	\$4.4	\$0	\$7.0	\$73.73	\$108.52	
Sum of 2070 benefits from Part 1, Row 5	A3-3	\$145.5	\$0	\$4.4	\$0	\$7.0	\$156.83	\$271.0	
Present Value of Benefits over Planning Horizon using 3.5% Discount Rate	A6-2	\$3,176	\$0	\$138	\$0	\$192	\$3,506	\$5,528	\$9,035
Present Value of Total Project Costs Allocated to each Benefit Category	A10-5	\$2,510	\$0	\$109	\$0	\$153	\$2,773	\$3,158	\$5,931
Capital Costs Allocated to Each Benefit Category	A10-6	\$2,169	\$0	\$94	\$0	\$129	\$2,392	\$2,785	\$5,176
Total Requested Program Cost Share	A10-5	\$1,480	\$0	\$53	\$0	\$129	\$1,662		

¹ Present value of total public and non-public benefits, total project costs, and total Program funding request must match numbers in Part 3

Part 3. Present Value of Project Costs, Cost-Effectiveness Measure, and Public Benefit Ratio, Million 2015 \$ Present Value		
	Enter Page Number of Application	2015 \$ Million Present Value
Project Costs		
Capital costs as defined in Program regulations	A10-2	\$4,397
Interest during construction	A10-2	\$429
Replacement costs	A10-3	\$44
Future environmental mitigation or compliance obligation costs	A10-2	\$350
Operations, maintenance and repair (OM&R) costs	A10-3	\$711
Other costs (describe)	na	\$0
Present Value of Total Project Costs ¹	A10-5	\$5,931
Present Value of Cost of Least-Cost Alternative that Provides the Same Total Physical Benefits	A2-2	\$6,926
Present Value of All Public and Non-public Benefits ¹	A6-2	\$9,035
Ratio of Present Value of Total Monetized Net Benefits to the Total Project Costs	A9-3	1.52
Present Value of Public Benefits ¹	A9-4	\$3,506
Total Requested Program Cost Share ¹	A9-4	\$1,662
Public Benefit Ratio: Ratio of Present Value of Monetized Net Public Benefits to the Total Requested Program Cost Share	A9-4	2.11

¹ Must match numbers in Part 2

From: Janis Offermann [janis@horizonh2o.com]
Sent: 10/8/2020 8:55:39 AM
To: Davis, Ryan A [rdavis@usbr.gov]; Kevin Spesert [kspesert@sitesproject.org]; Marcia Kivett [MKivett@sitesproject.org]
CC: Board Clerk [boardclerk@sitesproject.org]
Subject: RE: [EXTERNAL] RE: Contact Information Request

The Chairman of the Colusa tribe is Daniel Gomez, as you probably want to address the letter to him.

From: Davis, Ryan A <rdavis@usbr.gov>
Sent: Thursday, October 08, 2020 8:52 AM
To: Janis Offermann <janis@horizonh2o.com>; Kevin Spesert <kspesert@sitesproject.org>; Marcia Kivett <MKivett@sitesproject.org>
Cc: Board Clerk <boardclerk@sitesproject.org>
Subject: Re: [EXTERNAL] RE: Contact Information Request

Thanks! For the 2017 Draft EIR/EIS they both were listed as NEPA cooperating agencies. We plan to send out follow-up letters requesting continued NEPA support for the supplemental coming out next summer.

From: Janis Offermann <janis@horizonh2o.com>
Sent: Thursday, October 8, 2020 8:35 AM
To: Kevin Spesert <kspesert@sitesproject.org>; Marcia Kivett <MKivett@sitesproject.org>; Davis, Ryan A <rdavis@usbr.gov>
Cc: Board Clerk <boardclerk@sitesproject.org>
Subject: [EXTERNAL] RE: Contact Information Request

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Absolutely.

Ryan, the contact for Colusa is Molly West at (530) 458-8231 or mwest@colusa-nsn.gov. She is an administrative officer and appears to be the liaison for the tribal council.

The contact at Cortina is Chairman Charlie Wright at (530) 473-3274; I don't have an email for him.

Please note that both tribes staff their offices intermittently since the COVID-19 restrictions were put in place, so it might take a little time to actually connect with anyone. If you want to try snail mail, here are their addresses.

Colusa Indian Community Council
3730 Highway 45
Colusa, CA 95932
Cortina Indian Rancheria of Wintun Indians
P.O. Box 1630
Williams, CA 95987

Thanks

Janis

Janis Offermann

Cultural Resources Practice Leader
Horizon Water and Environment
400 Capitol Mall, Suite 2500
Sacramento, CA 95814
916.465.8076 – office
530.220.4918 – mobile

From: Kevin Spesert <kspesert@sitesproject.org>
Sent: Thursday, October 08, 2020 8:20 AM
To: Marcia Kivett <MKivett@sitesproject.org>; Davis, Ryan A <rdavis@usbr.gov>; Janis Offermann <janis@horizonh2o.com>
Cc: Board Clerk <boardclerk@sitesproject.org>
Subject: Re: Contact Information Request

Janis...

Can you send Ryan (Reclamation) the contact info we have for the Colusa and Cortina Tribe.

Thanks!

Kevin

From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Thursday, October 8, 2020 8:17 AM
To: Davis, Ryan A
Cc: Kevin Spesert; Board Clerk
Subject: RE: Contact Information Request

Copying Kevin and Yolanda, they may have this list.

Marcia Kivett
Sites Project Admin
Phone: 561.843.9740
Email: mkivett@sitesproject.org
Web: www.SitesProject.org
P.O. Box 517
122 Old Hwy 99W
Maxwell, CA 95955

From: Davis, Ryan A <rdavis@usbr.gov>
Sent: Thursday, October 8, 2020 8:16 AM
To: Marcia Kivett <MKivett@sitesproject.org>
Subject: Contact Information Request

Good Morning Marcia,

Do you happen to have the most current POC information for Colusa Indian Community Council and Cortina Indian Rancheria?

Thanks,

Ryan A. Davis, EIT

Project Manager, Water Supply Planning Branch

US Bureau of Reclamation

Interior Region 10: California-Great Basin

2800 Cottage Way, Sacramento, CA 95825

Email: rdavis@usbr.gov

Office: (916) 978-5083

Cell: (916) 206-5133

From: Luu, Henry [Henry.Luu@hdrinc.com]
Sent: 10/8/2020 11:38:33 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Heydinger, Erin [erin.heydinger@hdrinc.com]
Subject: FW: Sites October 2020 Ad Hoc Ops and Engineering Work Group - Kunde Comments
Attachments: CBD_HydModel_Prelim_Results_09232020_ICFPres.pdf

Hi Ali and Erin,

Rob Kunde would like further discussions on the items noted in his email below during the Work Group meeting this coming Monday. A summary of the CBD hydraulic model results are attached for your reference. The study noted that August/September releases into CBD at 1,000 cfs will result in significant water surface elevation change and requires additional coordination/analysis to identify specific mitigation measures (staff recommendation) but is not a fatal flaw. Item no. 3 appears to be operations related, and am hoping you can assist when it comes up. Do you think we need a coordination call to review before Monday?

Thank you,

Henry N. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Rob Kunde [mailto:rkunde@wrwmwsd.com]
Sent: Thursday, October 8, 2020 9:53 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>
Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group - Kunde Comments

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Henry and Mike:

Thanks for the description below. Potential concerns for further discussion:

1. The CH2M prior modeling for Sites deliveries to State Water Contractors South of the Delta assumed deliveries would be made in many months, but significantly in the July to September time frame. The comment below suggests CBD water surface elevation changes may preclude significant August and September releases.'
2. Many Sites participants may choose to make Sites deliveries as SWP Non-Project water which limits deliveries to the July to November time frame under the current federal Biological Opinion. This delivery pattern has not been modeled, but August/September release restrictions would be an issue under this delivery pattern.
3. I also request a refresher on the adequacy of the 1000 cfs release parameter to meet South of Delta participant demands.

The above needs further discussion in the Work Group including input from CH2M.

Robert J. Kunde, P.E.

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, October 6, 2020 12:46 PM
To: Michael Azevedo
Cc: Rob Kunde
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

Mike,

Item 3 – CBD Hydraulic Modeling Results: review model results

- The model indicates CBD is a viable project feature and can accommodate 1,000 cfs releases during the months of June, July, and October without major impacts to water surface elevation
- There are seasonal (timing) and operational (release) constraints – the model analyzed project releases for dry and critical years based on historical data between 2013 and 2019
- Staff recommends advancing modeling efforts by acquiring supplemental data (Balsdon Weir, Davis Weir, verification with RD108), and evaluation of release scenarios of less than 1,000 cfs
 - Release scenarios with less than 1,000 cfs may extend the timeframe that releases can occur, which can potentially increase the amount of water released from Sites Reservoir. This will provide greater operation flexibility for the Project

Item 5 – Level of Service Standards for Engineering Feasibility Analysis: review diversion and release criteria established during Value Planning vs. current feasibility analysis

- The engineering team continues to advance feasibility analysis based on diversion and release criteria identified in the April 2020 Sites Project Value Planning Alternatives Appraisal Report
 - 2,100 cfs from TC Canal to Sites Reservoir
 - 1,800 cfs from GCID Main Canal to Sites Reservoir
 - 1,000 cfs release from Sites Reservoir to CBD/Sacramento River
- Proposed improvements at the Red Bluff pumping plant will increase capacity from 2,000 cfs to 2,500 cfs, which will accommodate project diversion requirement from the TC Canal
- In discussion with GCID, improvements to GCID facilities will be required to reliably convey 1,800 cfs to Sites Reservoir. Staff recommend to proceed with analysis of GCID facilities to address reliability concerns
- Level of Service Standards for releases can be met based on results from the CBD Hydraulic Model
- Staff is requesting the Work Group to provide input and/or accept the proposed diversion and release Level of Service Standards, as noted above, for engineering feasibility analysis

Item 6 – Operations Modeling Status:

- Staff update on operations modeling status. Results are pending and will be presented at a later date.

I hope the above is sufficient, but please let me know if you would like additional clarifications.

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

hdrinc.com/follow-us

From: Michael Azevedo [<mailto:mjazevedo@countyofcolusa.com>]
Sent: Tuesday, October 6, 2020 9:30 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Rob Kunde <rkunde@wrnwdsd.com>
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.


Henry,

Would you please provide a synopsis of the information to be presented relative items 3,5 & 6 please?

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, October 6, 2020 7:14 AM
To: Michael Azevedo <mjazevedo@countyofcolusa.com>
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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Thank you, sir.

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

hdrinc.com/follow-us

From: Michael Azevedo [<mailto:mjazevedo@countyofcolusa.com>]
Sent: Tuesday, October 6, 2020 7:10 AM
To: Rob Kunde <rkunde@wrnwdsd.com>; Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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I can make that work as well.

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Rob Kunde <rkunde@wrnwdsd.com>
Sent: Monday, October 5, 2020 4:26 PM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>
Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin

<Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>

Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group



CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I am available for 10/12 10:00-11:30 am

Robert J. Kunde, P.E.

Retired Annuitant
Wheeler Ridge-Maricopa Water Storage District
12109 Highway 166, Bakersfield, CA 93313
cell: 661-345-3719 email: rkunde@wrmsd.com

From: Luu, Henry <Henry.Luu@hdrinc.com>

Sent: Monday, October 5, 2020 4:06 PM

To: Rob Kunde; Michael Azevedo

Cc: Jerry Brown; Alicia Forsythe; Heydinger, Erin; White, Drew

Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

Rob and Mike – thank you for your input. How about next Monday (10/12/2020) from 10am to 11:30am?

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

hdrinc.com/follow-us

From: Rob Kunde [<mailto:rkunde@wrmsd.com>]

Sent: Monday, October 5, 2020 9:07 AM

To: Michael Azevedo <mjazevedo@countyofcolusa.com>; Luu, Henry <Henry.Luu@hdrinc.com>

Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>

Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I have marked my availability below but would prefer to accommodate Mike's availability. My mornings are available after 9am through Oct 15 except for Oct 14.

Robert J. Kunde, P.E.

Retired Annuitant
Wheeler Ridge-Maricopa Water Storage District
12109 Highway 166, Bakersfield, CA 93313
cell: 661-345-3719 email: rkunde@wrmsd.com

From: Michael Azevedo <mjazevedo@countyofcolusa.com>

Sent: Monday, October 5, 2020 6:10 AM

To: Luu, Henry; Rob Kunde

Cc: Jerry Brown; Alicia Forsythe; Heydinger, Erin; White, Drew

Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group


I'm sorry Henry,

I've practically zero afternoon availability for the next three weeks. If staff would like me to participate it will need to be an AM schedule.

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Sunday, October 4, 2020 12:30 PM
To: Rob Kunde <rkunde@wrnwsd.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>
Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>
Subject: Sites October 2020 Ad Hoc Ops and Engineering Work Group

 **CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Rob and Mike,

Staff propose to hold an Ad Hoc Operations and Engineering Work Group to review topics included in the attached draft agenda before the next Reservoir Committee meeting. Are you available for a Work Group meeting during any of the following timeframes?

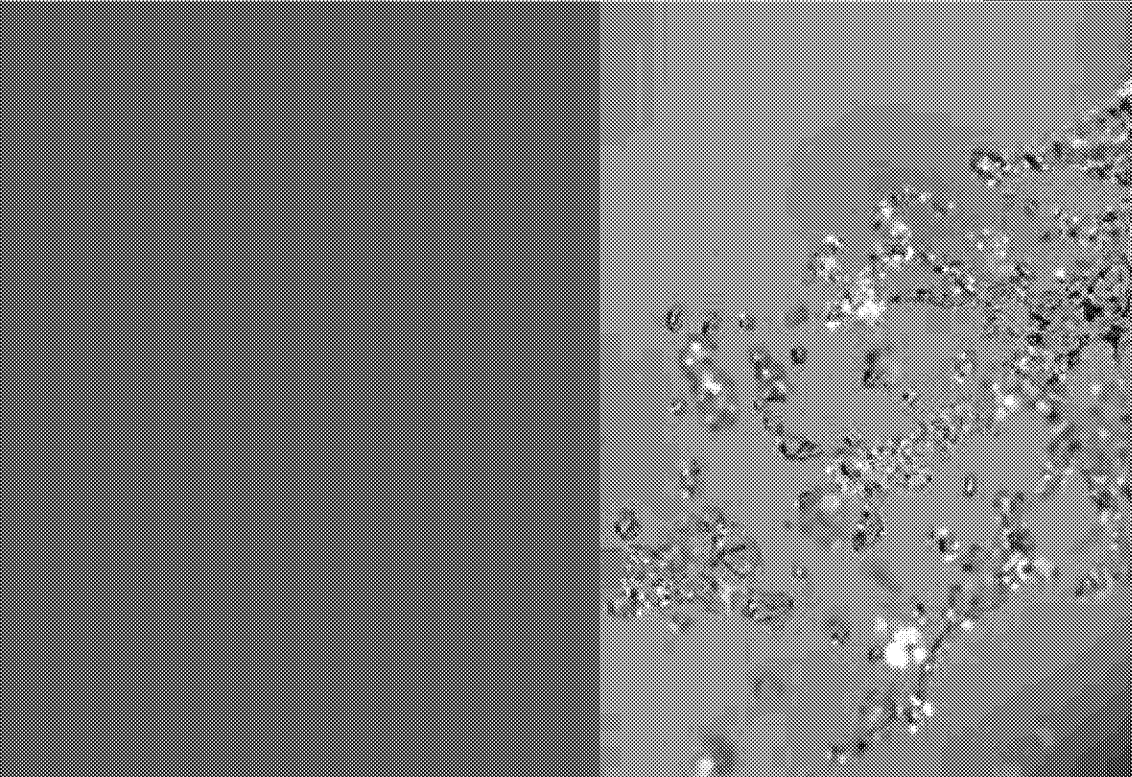
- Thursday (10/8/2020) between 1pm and 5pm - Kunde NOT available
- Friday (10/9/2020) between 1pm and 5pm - Kunde available
- Monday (10/12/2020) between 2pm and 5pm - Kunde available
- Wednesday (10/14/2020) between 1pm and 5pm - Kunde available

We anticipate the meeting topics will take less than one and a half hours to cover. Can you let us know your availability?

Thank you,

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

hdrinc.com/follow-us



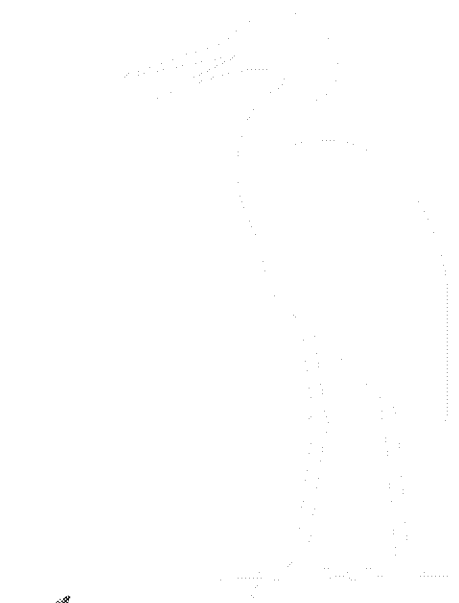
Colusa Basin Drain – Preliminary Hydraulic Modeling Results

September 23, 2020



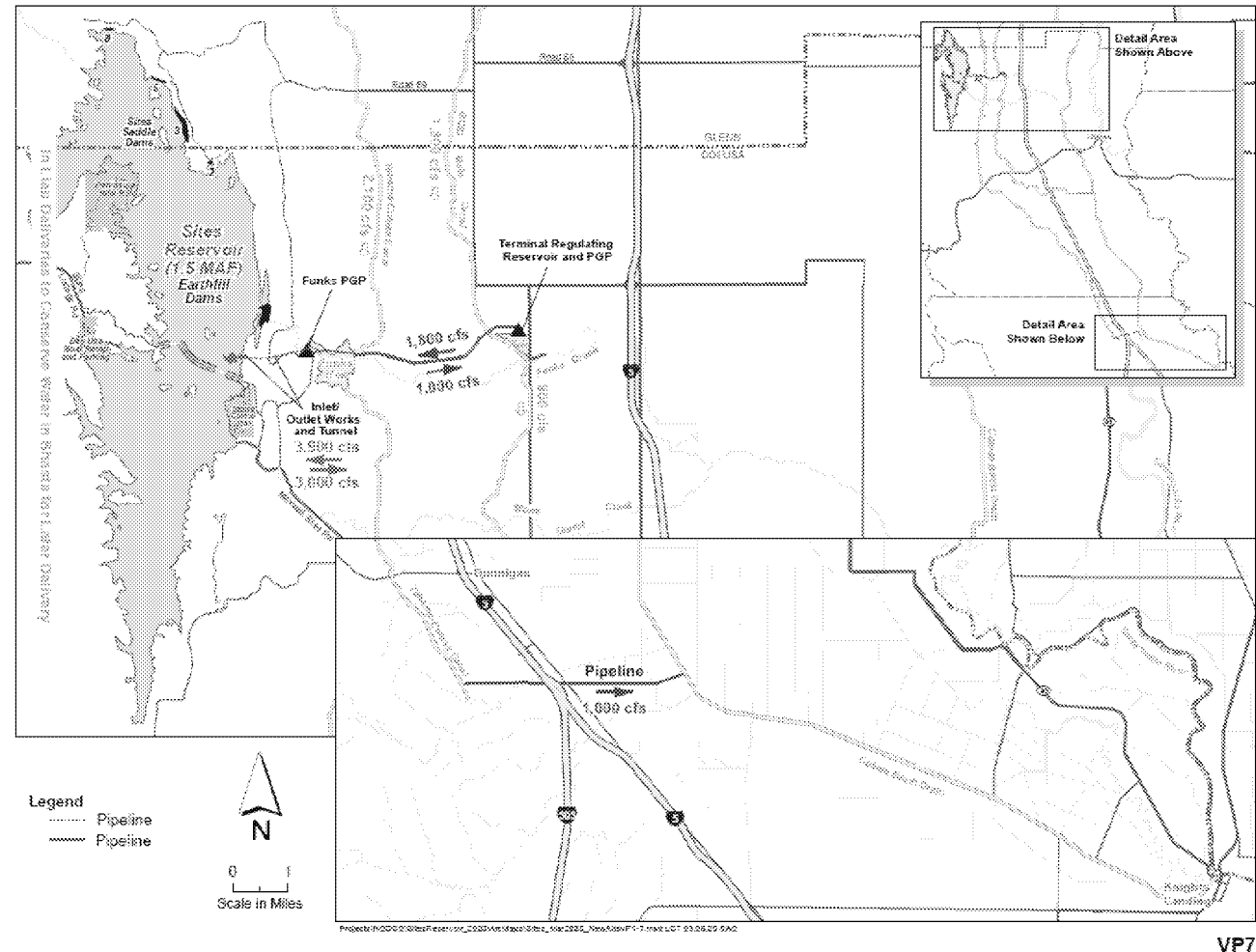
Agenda

1. Overview of Sites Project
2. Colusa Basin Drain (CBD) Modeling Objectives
3. Historical Data
4. Analysis Period
5. Hydraulic Model
6. Preliminary Results
7. Next Steps



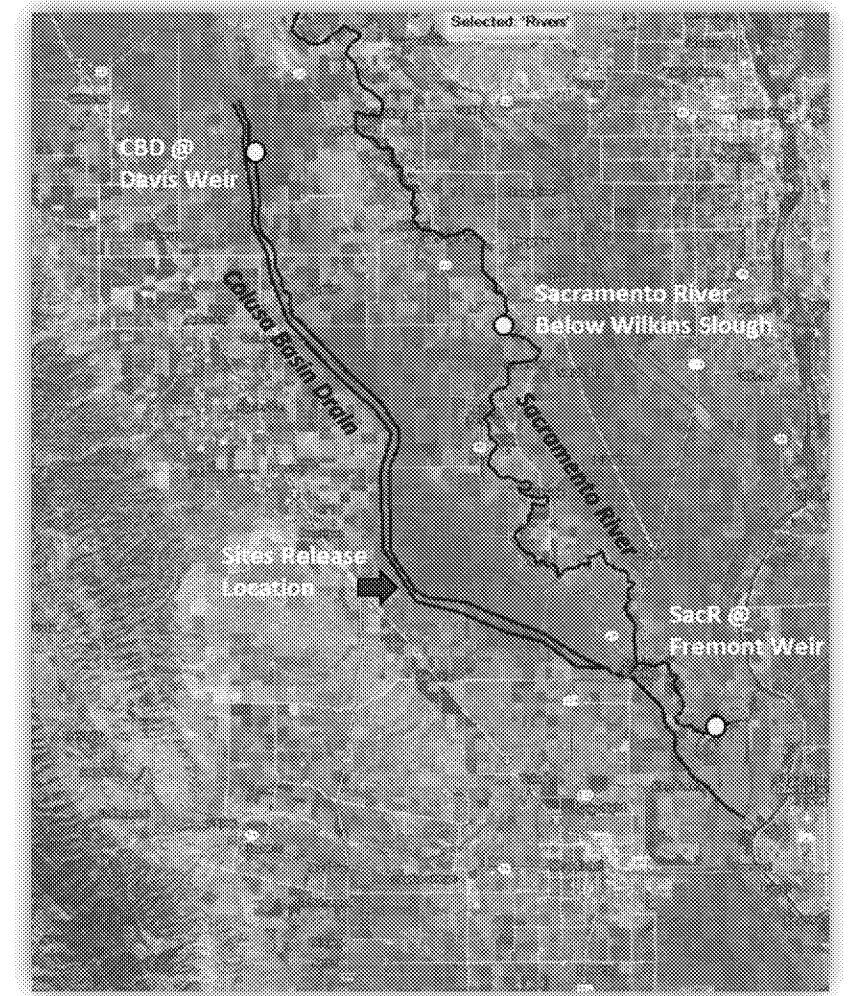
Overview of Sites Project

- Sites Value Planning Alternative (VP7) uses pipeline from TC Canal to release 1,000 cfs to CBD near Dunnigan
- Sites release to be conveyed through CBD to Sacramento River via Knights Landing Outfall Gate (KLOG) structure
- Sites releases will be made primarily during June through October months for Dry and Critical Water Years



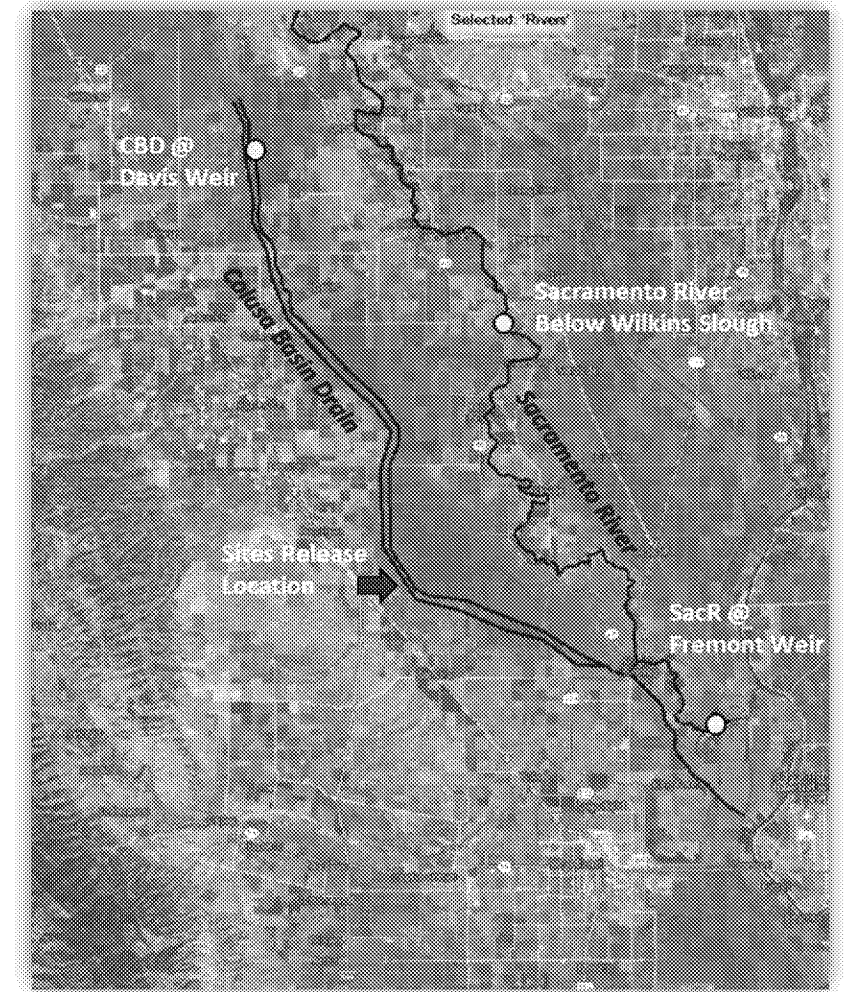
CBD Modeling Objectives

- Evaluate the effects on water surface elevations (WSE) in CBD and Knights Landing Ridge Cut (Ridge Cut) caused by Sites release of 1,000 cfs
- Understand potential release constraints, timing (seasonal) and operational affects on Sites releases



Historical Data

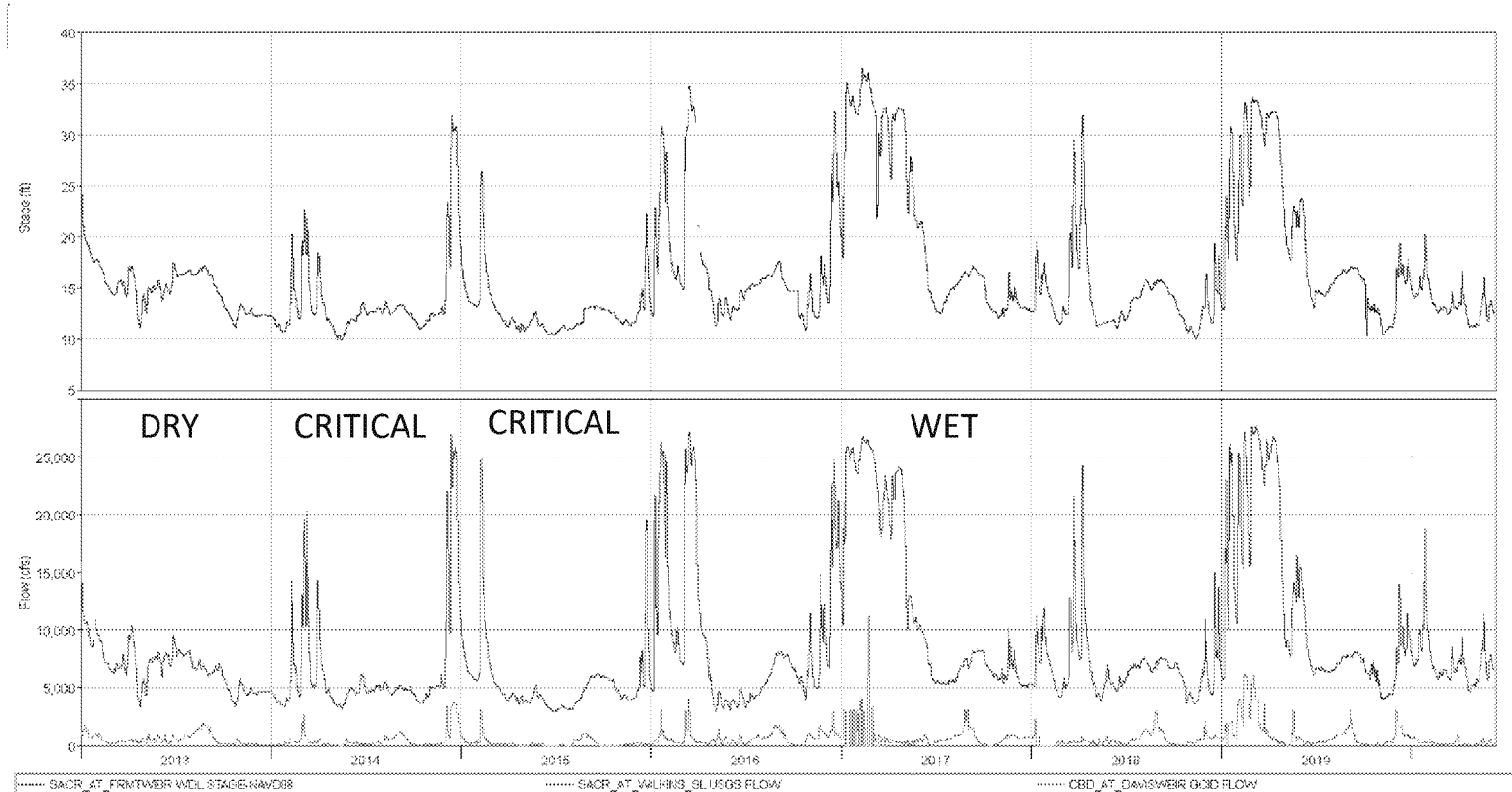
Location	Data	Period of Record	Source
CBD at Davis Weir	Daily Flow and Stage	2013 to 2019	GCID
CBD at KLOG	Daily Flow	1975 to 2012	WDL (A02945)
CBD at KLOG	Daily Stage	1975 to 2018	WDL (A02945)
Sacramento River Below Wilkins Slough	Daily Flow	1940 to 2020	USGS (11390500)
Sacramento River at Knights Landing	Daily Flow and Stage	1982 to 2018	WDL (A02200)
Sacramento River at Fremont Weir	Daily Stage	1982 to 2020	WDL (A02170)
Ridge Cut Slough at Knights Landing	15-min Flow	2007 to 2020	WDL (A02939)



Analysis Period

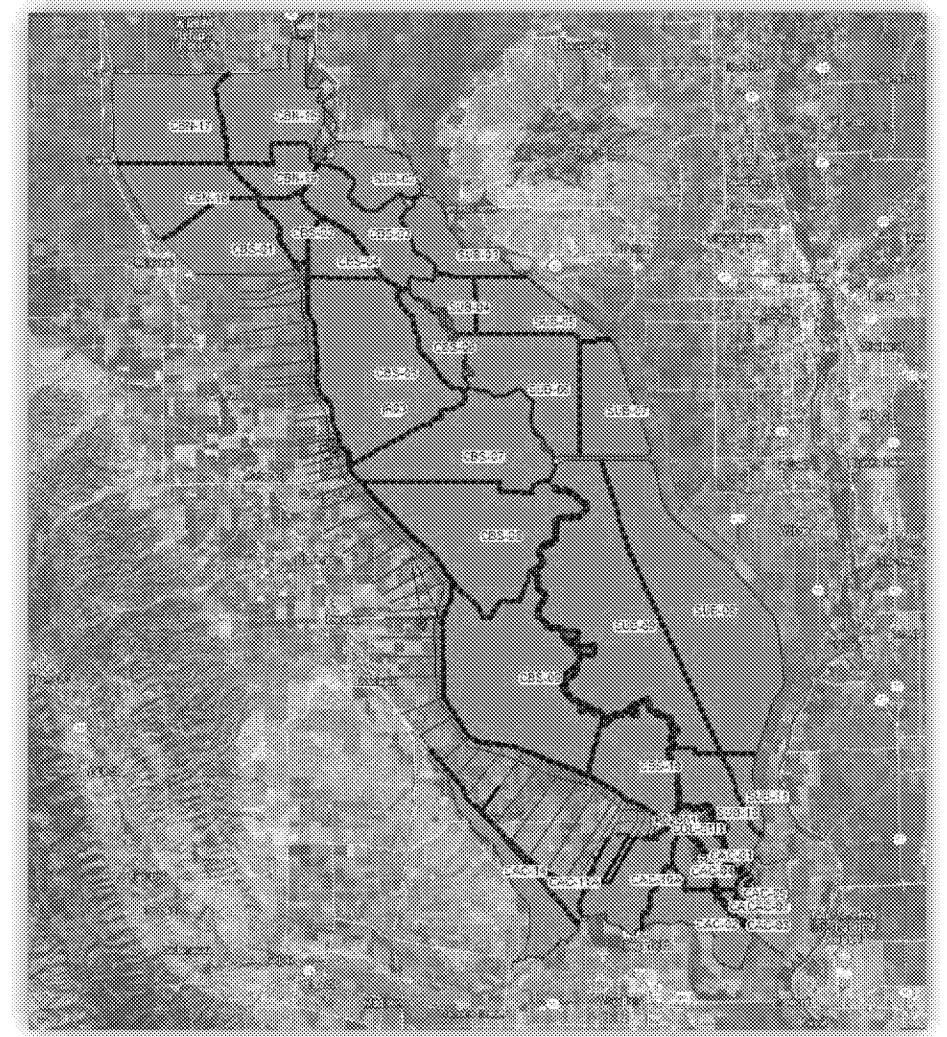
- CBD @ Davis Weir Flow Data is available from 2013 to 2019
- Selected Four Water Years between 2013 to 2019

	Water Year	WY Type
✓	2013	DRY
✓	2014	CRITICAL
✓	2015	CRITICAL
	2016	BELOW NORMAL
✓	2017	WET
	2018	BELOW NORMAL
	2019	WET



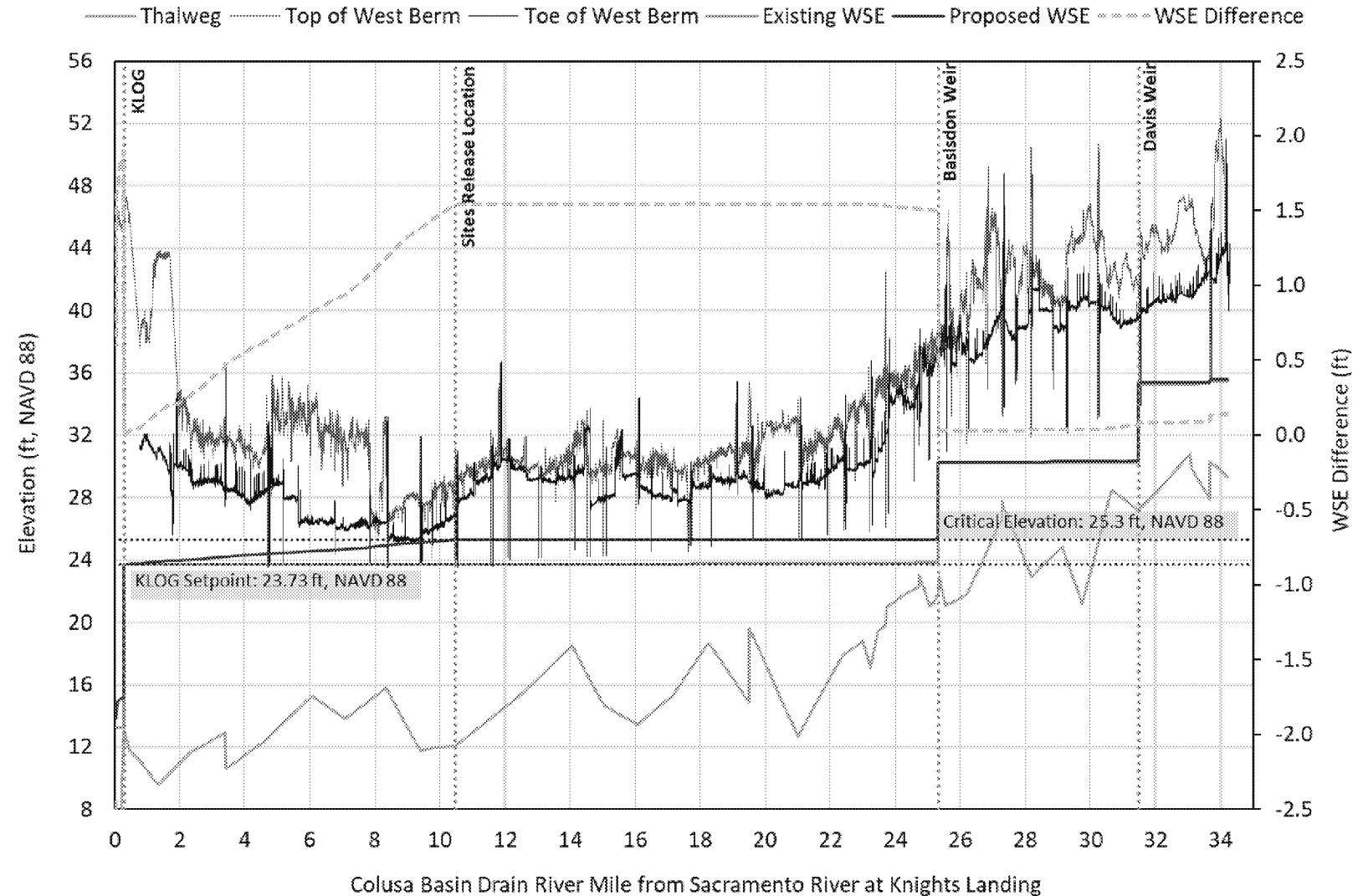
Hydraulic Model

- DWR's CVFED Program HEC-RAS 1D Model
- CBD & Sacramento River channel geometry is based on CVFED LiDAR and Bathymetric surveys collected in 2009
- Updated KLOG structure based on as-built drawings from DWR and gate operations using operating guidelines
- Added Wallace Weir based on as-built drawings from RD108
- Added Davis Weir and Balsdon Weir based on LiDAR and information received from GCID



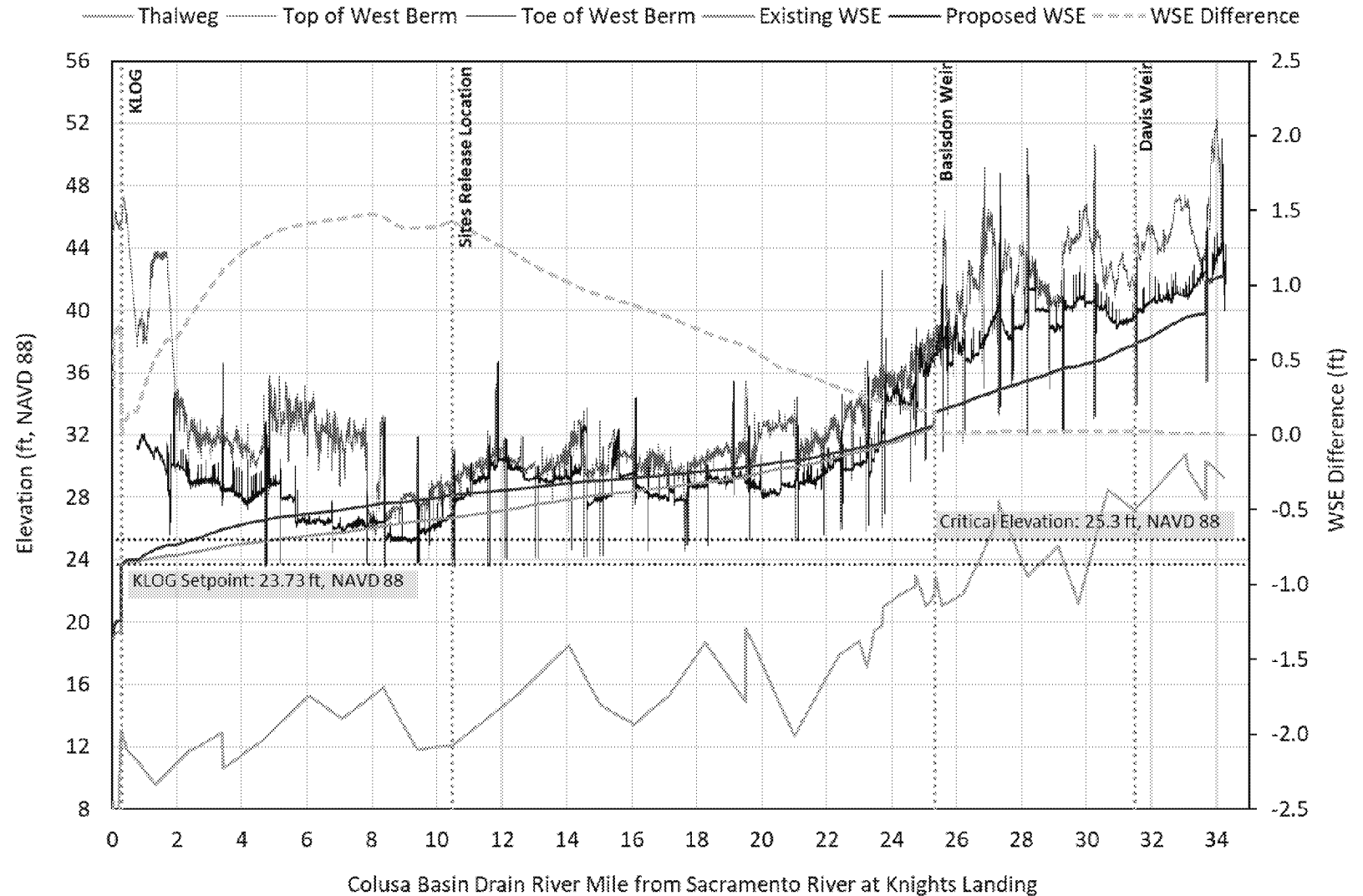
Water Surface Profile Preliminary Results- CBD Low Flow

- Comparison of simulated WSE Profiles
- CBD flow rates
 - Existing = 50 cfs
 - Proposed = 1,050 cfs
- At low CBD flow, backwater continues up to RM 25 near Balsdon Weir.
- Maximum WSE increase of 1.54 feet is observed from the Sites release location to RM 25 and dissipates at Balsdon Weir
- WSE increases taper off towards KLOG



Water Surface Profile Preliminary Results – CBD High Flow

- Comparison of simulated WSE Profiles
- CBD flow rates
 - Existing = 1,700 cfs
 - Proposed = 2,700 cfs
- At high CBD flow, slope of CBD water surface is steeper
- Maximum WSE increase of 1.5 feet is observed from the Sites release location and tapers off at Balsdon Weir
- WSE increases taper off towards KLOG



Water Surface Elevations Summary Results

- WSEs at Select Locations on CBD

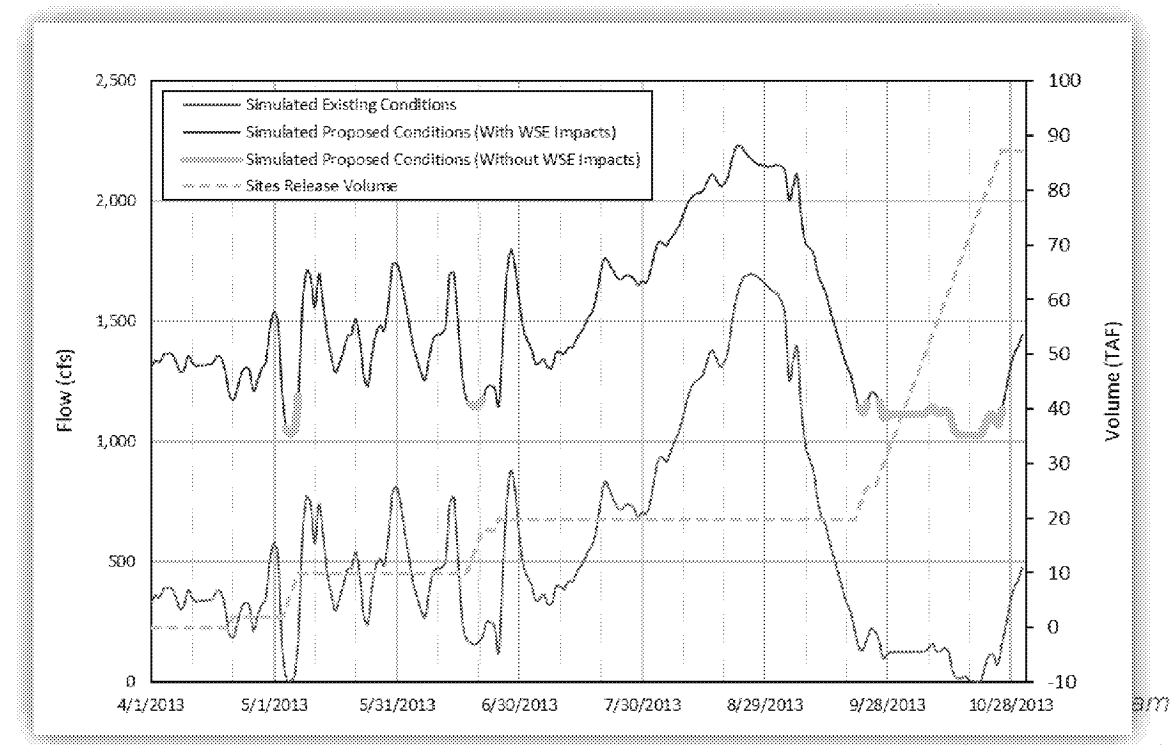
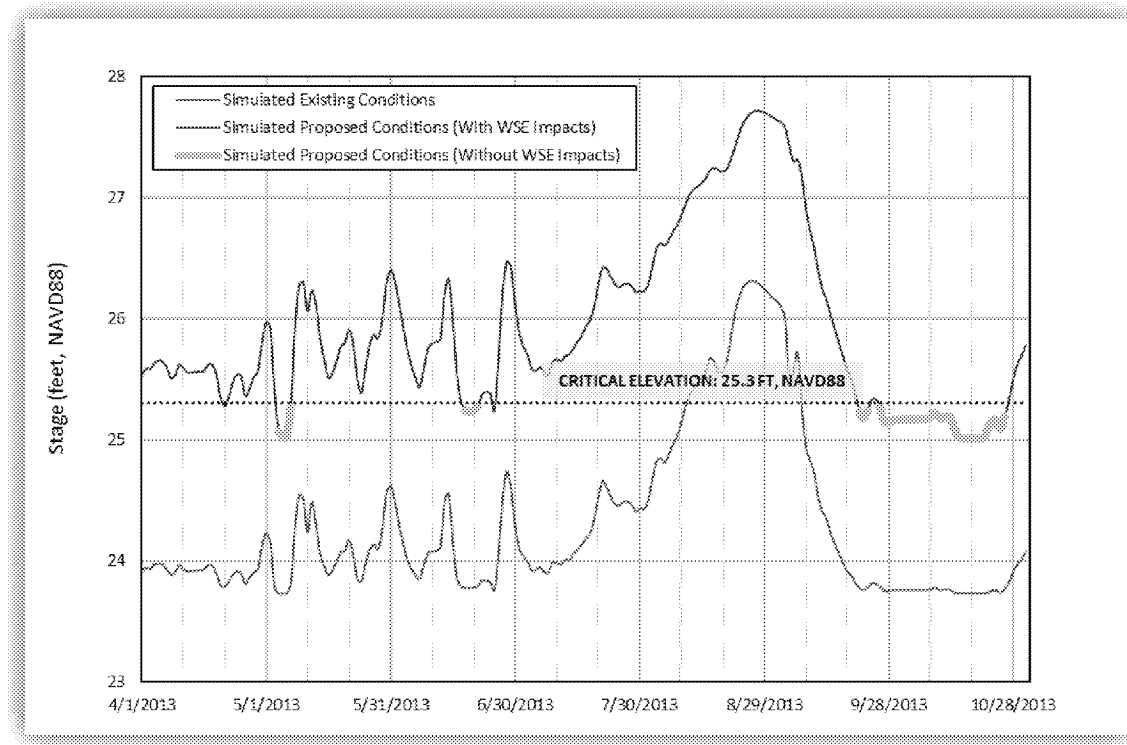
CBD location	Flow Profile 1 WSEs ^a			Flow Profile 2 WSEs ^b		
	Existing (ft, NAVD 88)	Proposed (ft, NAVD 88)	Difference (ft)	Existing (ft, NAVD 88)	Proposed (ft, NAVD 88)	Difference (ft)
KLOG (RM 0.287)	23.73	23.73	-0.01	23.74	23.73	-0.01
RM 4	23.73	24.30	0.57	25.09	26.33	1.24
Lowest West Field (RM 8.9)	23.74	25.12	1.38	26.44	27.83	1.38
Sites Outfall (RM 10.5)	23.74	25.28	1.54	27.02	28.33	1.31
RM 16	23.74	25.28	1.54	28.37	29.24	0.87
Balsdon Weir (RM 25.329)	30.24	30.27	0.03	33.45	33.46	0.01

^a Flow Profile 1 includes Existing Conditions flow of 50 cfs and Proposed Conditions flow of 1,050 cfs

^b Flow Profile 2 includes Existing Conditions flow of 1,700 cfs and Proposed Conditions flow of 2,700 cfs

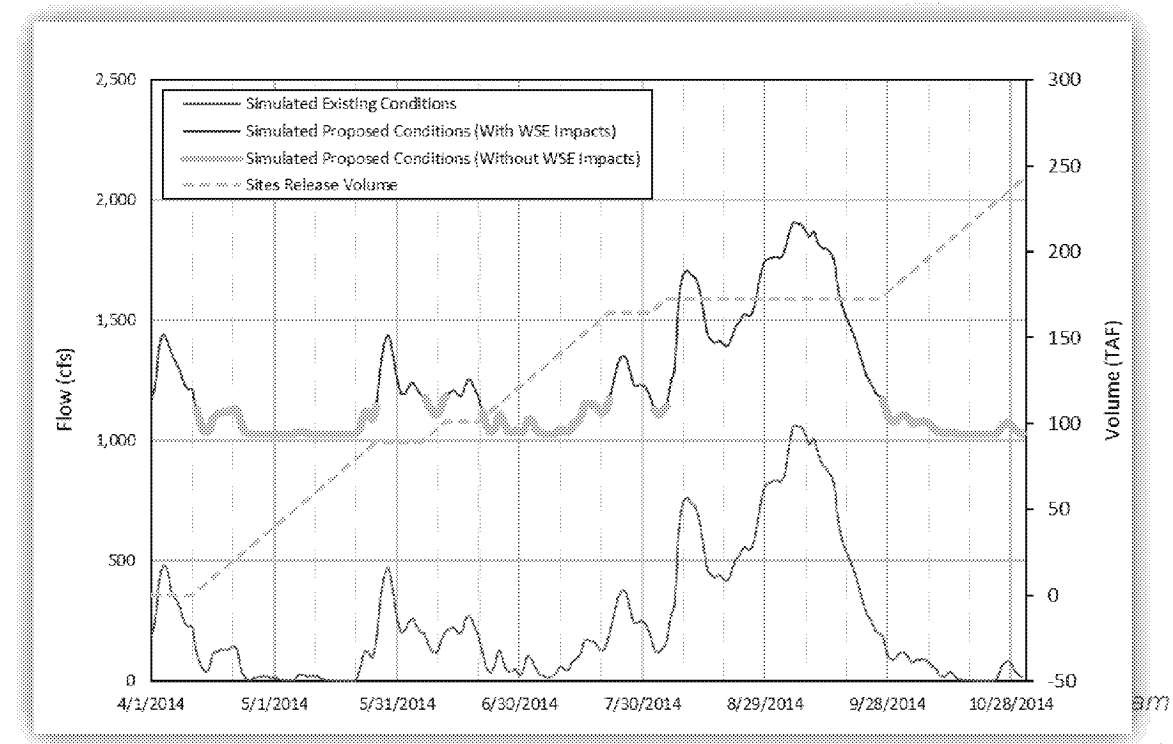
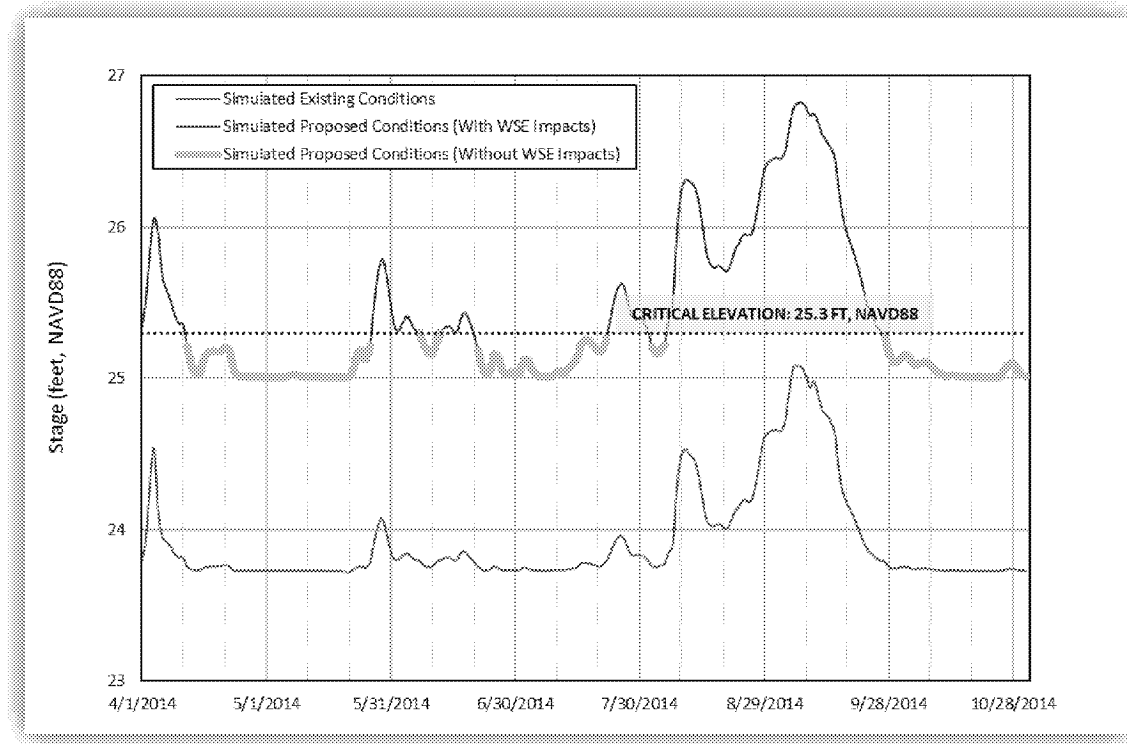
Water Year 2013 Preliminary Results

- Comparison of simulated flow and stage at CBD at RM 8.9
- Existing Conditions – Historical flows
- Proposed Conditions – Additional 1,000 cfs constant flow added at CBD River Mile 10.5
- Green line identifies periods when Sites release of 1,000 cfs can be made without raising WSE at RM 8.9 above the critical elevation of 25.3 ft, NAVD88.
- Yellow line shows cumulative Sites release volume without increasing WSEs at RM 8.9



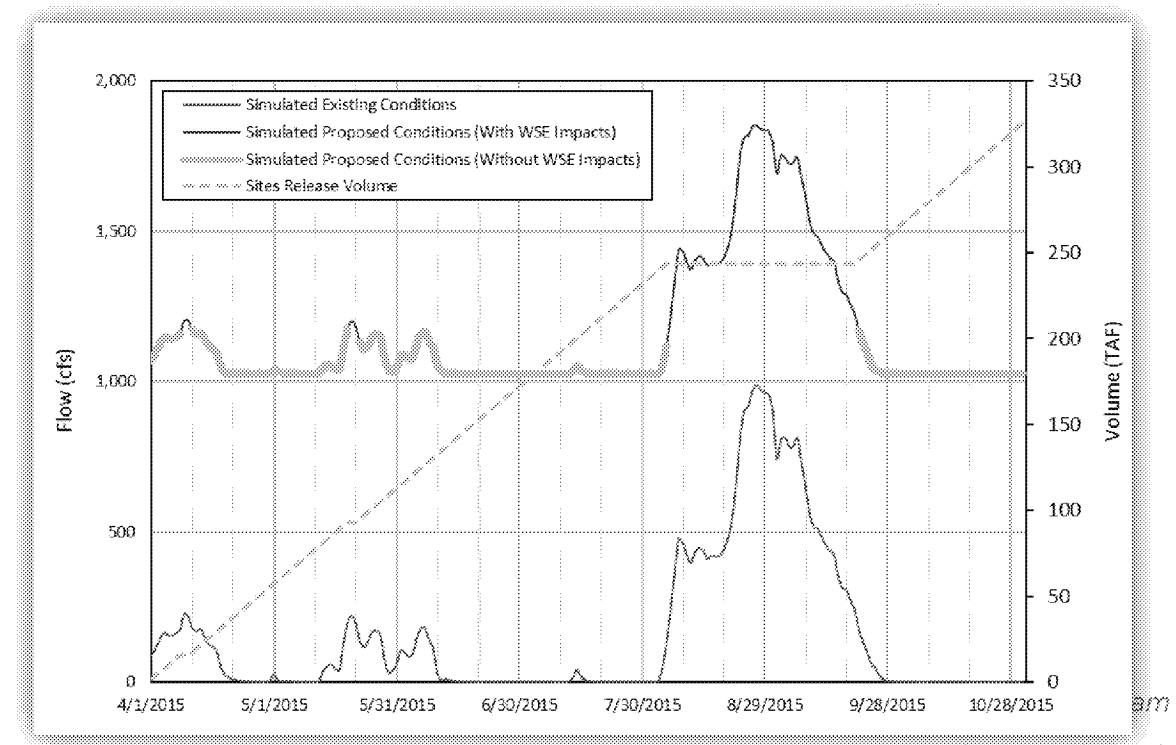
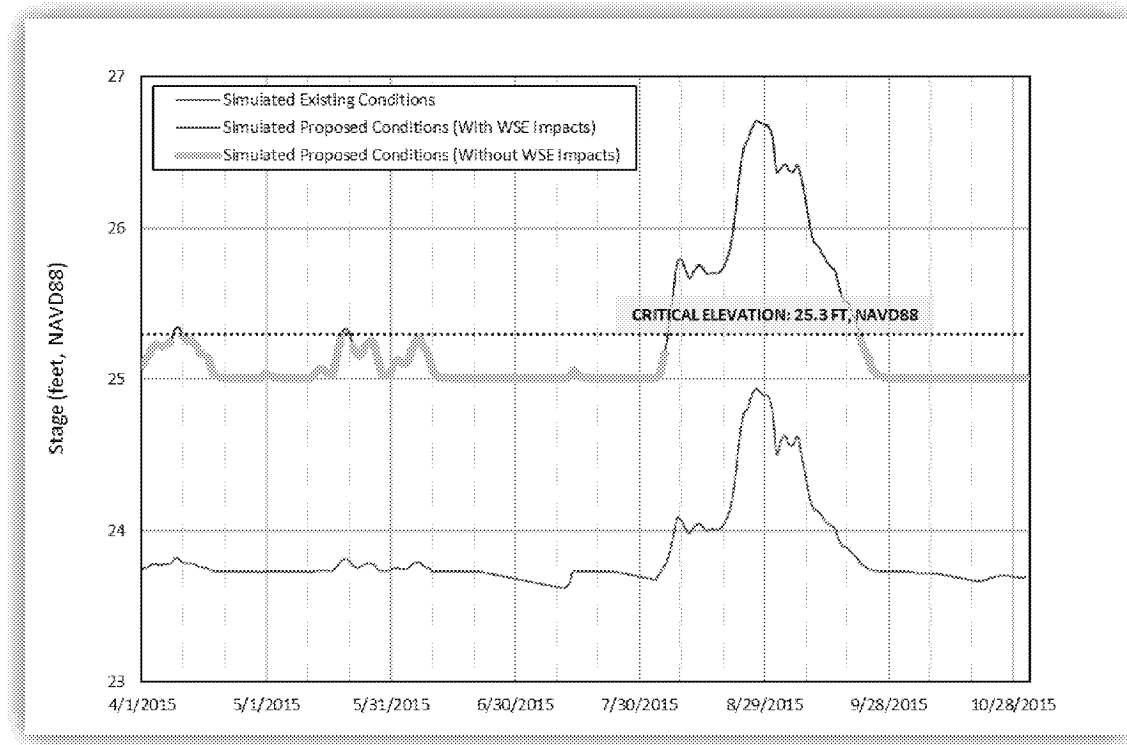
Water Year 2014 Preliminary Results

- Comparison of simulated flow and stage at CBD at RM 8.9
- Existing Conditions – Historical flows
- Proposed Conditions – Additional 1,000 cfs constant flow added at CBD River Mile 10.5
- Green line identifies periods when Sites release of 1,000 cfs can be made without raising WSE at RM 8.9 above the critical elevation of 25.3 ft, NAVD88.
- Yellow line shows cumulative Sites release volume without increasing WSEs at RM 8.9



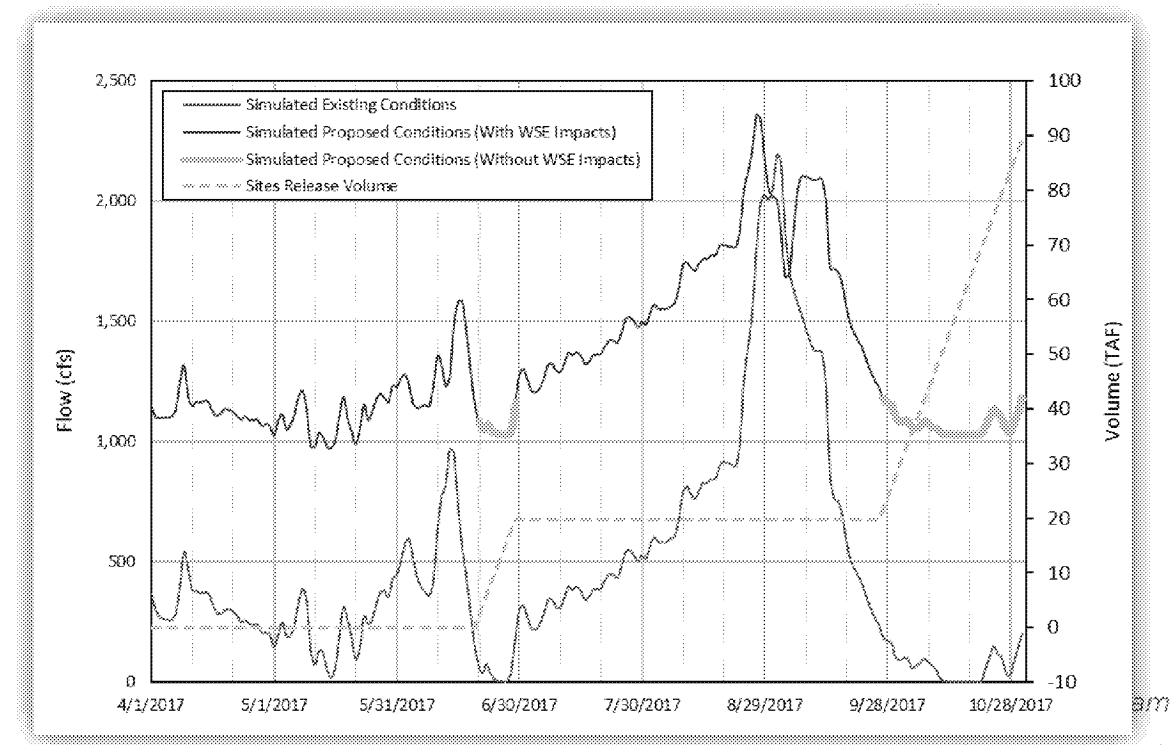
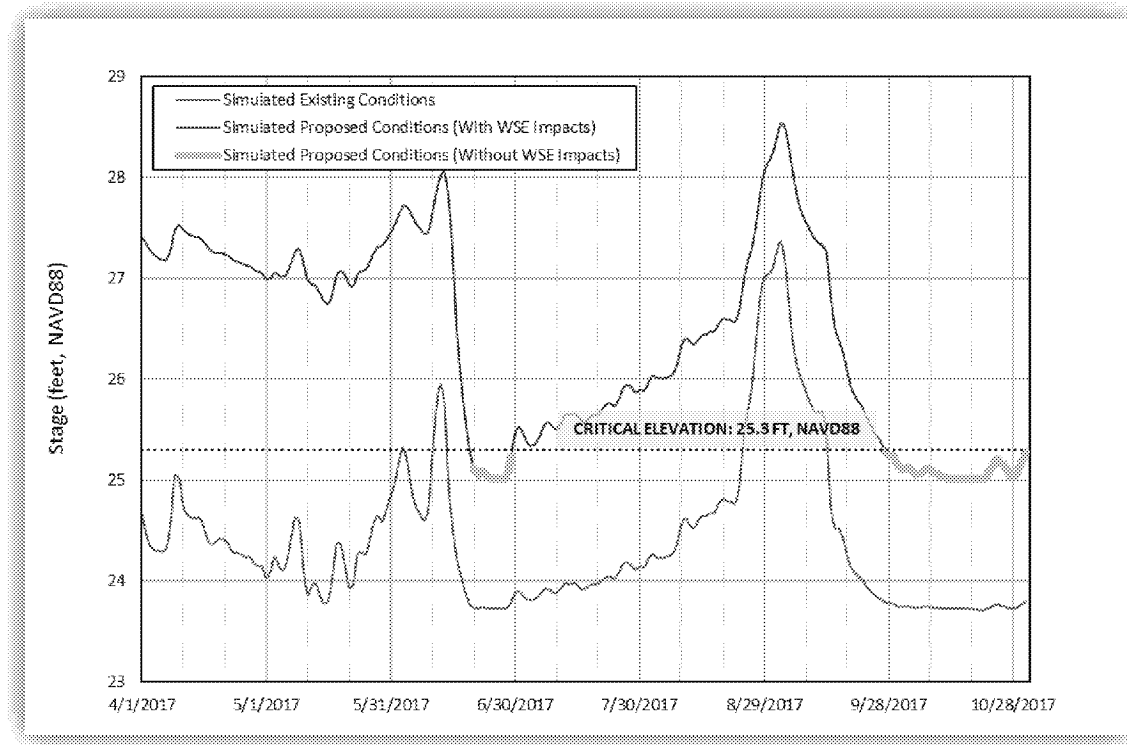
Water Year 2015 Preliminary Results

- Comparison of simulated flow and stage at CBD at RM 8.9
- Existing Conditions – Historical flows
- Proposed Conditions – Additional 1,000 cfs constant flow added at CBD River Mile 10.5
- Green line identifies periods when Sites release of 1,000 cfs can be made without raising WSE at RM 8.9 above the critical elevation of 25.3 ft, NAVD88.
- Yellow line shows cumulative Sites release volume without increasing WSEs at RM 8.9



Water Year 2017 Preliminary Results

- Comparison of simulated flow and stage at CBD at RM 8.9
- Existing Conditions – Historical flows
- Proposed Conditions – Additional 1,000 cfs constant flow added at CBD River Mile 10.5
- Green line identifies periods when Sites release of 1,000 cfs can be made without raising WSE at RM 8.9 above the critical elevation of 25.3 ft, NAVD88.
- Yellow line shows cumulative Sites release volume without increasing WSEs at RM 8.9



Sites Volume Summary Results

Month	CBD Existing Conditions Monthly Average Flow (cfs)				# of Days without WSE Effects ^a				Sites Volume Conveyed to Sacramento River ^b (TAF)			
	2013 (D)	2014 (C)	2015 (C)	2017 (W)	2013 (D)	2014 (C)	2015 (C)	2017 (W)	2013 (D)	2014 (C)	2015 (C)	2017 (W)
Jun	435	158	376	376	5	16	30	10	9.9	31.7	59.5	19.8
Jul	555	148	387	387	0	22	31	0	0.0	43.6	61.5	0.0
Aug	1,319	509	1,022	1,022	0	4	5	0	0.0	7.9	9.9	0.0
Sep	636	633	940	940	8	4	10	4	15.9	7.9	19.8	7.9
Oct	137	43	60	60	26	31	31	31	51.6	61.5	61.5	61.5
Total					44	122	164	45	87.3	241.9	325.2	89.2

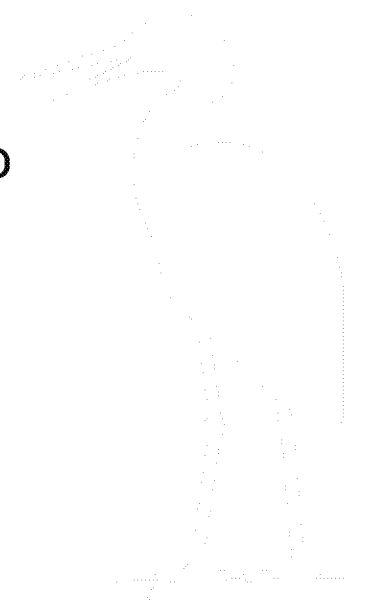
^aCritical WSE of 25.3 feet, NAVD 88 was used to calculate the number of days without WSE effects.

^bSites volume was calculated using 1,000 cfs constant flow for the total number of days in the water year without WSE effects.

- C = critical year
- D = dry year
- TAF = thousand acre-feet
- W = wet year

Preliminary Conclusions

1. During Critical Years (2014 and 2015) - we can discharge 1,000 cfs into CBD in June, July and October without major water surface increases
2. If we discharge less than 1,000 cfs during the periods of increasing water surface elevations in the CBD (i.e. June through September), we could release more Sites water to the Sacramento River (this would take additional modeling)
3. The preliminary hydraulic results indicate that the CBD is a viable way to convey Sites water to the Sacramento River
4. Sites will need to see if there are landowner, biological or permitting issues that effect this conveyance route



Next Steps

1. Verify with RD108 the lowest field elevation (RM 8.9) and the CBD operations for 2013 because they are not consistent with Jacobs' understanding for dry-year operations.
2. Conduct field visit to collect geometric data for Balsdon and Davis Weirs, to improve model representation and evaluation.
3. Improve the representation of CBD and Ridge Cut junction in the HEC-RAS model. Currently, the junction is modeled with reaches connecting to a storage area.
4. Calibrate and validate CBD HEC-RAS model for additional events with historical gate operations.
5. Model other Sites Reservoir release scenarios with variable release rates of less of 1,000 cfs.

From: JP Robinette [JRobinette@BrwnCald.com]
Sent: 10/8/2020 3:02:55 PM
To: Charles Gardiner [Charles@catalystgroupca.com]
CC: Jerry Brown [jbrown@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Next Steps on Strategic Plan
Attachments: Attachment #8 - Project Financing Action Plan.pdf

Flag: Follow up

Charles,

This is the action plan that will go for work group review today. Hopefully this is helpful for future action plans. I have cc'd Ali as I believe she may be working on one next, but I believe it may be quite a bit different.

Thanks,

JP Robinette, PE*
Brown and Caldwell
JRobinette@brwncauld.com
T 916.853.5312 | C 801.819.4306
*Professional Registration in Specific States

From: Charles Gardiner <Charles@catalystgroupca.com>
Sent: Wednesday, October 07, 2020 12:42 PM
To: JP Robinette <JRobinette@BrwnCald.com>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Next Steps on Strategic Plan

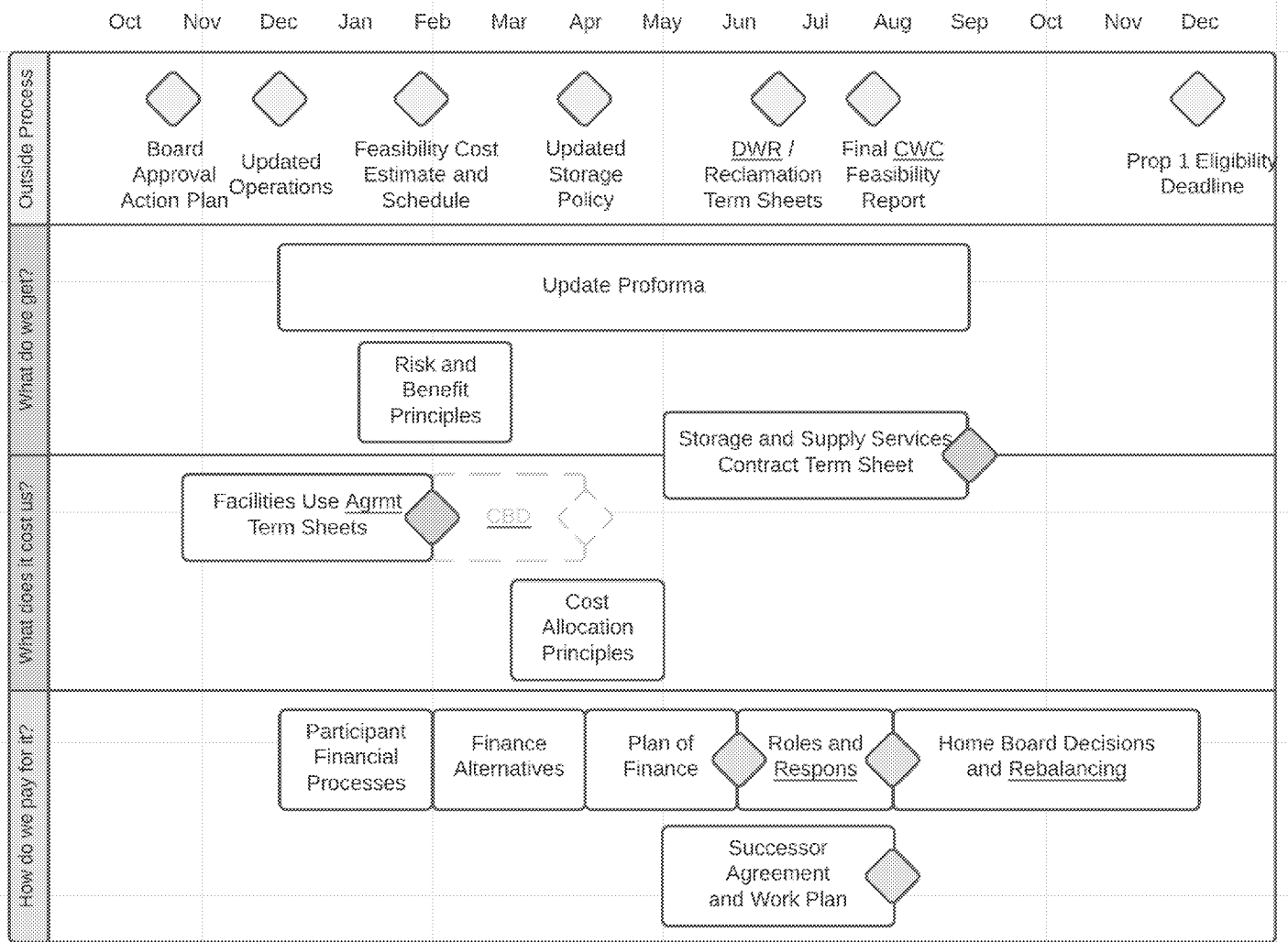
Great to see you are starting to lay this out. Nice, simple, high-level view.

Charles

From: JP Robinette <JRobinette@BrwnCald.com>
Sent: Wednesday, October 7, 2020 11:00 AM
To: Charles Gardiner <Charles@catalystgroupca.com>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Next Steps on Strategic Plan

Hi Charles,

I wanted to give you an update. When we talked, the next step was to develop a high level schedule. This is the format I am working on for the schedule. Please let me know if you have questions or comments. Don't pay too much attention to the dates at this point.



JP Robinette, PE*
 Brown and Caldwell
JRobinette@brwncald.com
 T 916.853.5312 | C 801.819.4306
 *Professional Registration in Specific States

From: JP Robinette
Sent: Friday, September 25, 2020 10:55 AM
To: Charles Gardiner <Charles@catalystgroupca.com>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Next Steps on Strategic Plan

Here is an update for our discussion.

JP Robinette, PE*
 Brown and Caldwell
JRobinette@brwncald.com
 T 916.853.5312 | C 801.819.4306
 *Professional Registration in Specific States

From: JP Robinette
Sent: Wednesday, September 23, 2020 2:49 PM
To: Charles Gardiner <Charles@catalystgroupca.com>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Next Steps on Strategic Plan

A thought/very rough draft of a roadmap for the local cost share commitment effort. I am about to start a schedule but thought I would share the roadmap in advance of our meeting to think about. Grey represent things that are already in the work plan. Sharing as a concept, not a developed process.

Thanks,

JP Robinette, PE*

Brown and Caldwell

JRobinette@brwncald.com

T 916.853.5312 | C 801.819.4306

*Professional Registration in Specific States

-----Original Appointment-----

From: Marcia Kivett <MKivett@sitesproject.org>

Sent: Tuesday, September 22, 2020 11:38 AM

To: Marcia Kivett; JP Robinette; Charles Gardiner

Cc: Jerry Brown

Subject: Next Steps on Strategic Plan

When: Friday, September 25, 2020 11:00 AM-12:00 PM (UTC-08:00) Pacific Time (US & Canada).

Where: Microsoft Teams Meeting

Join Microsoft Teams Meeting

+1 213-379-5743 United States, Los Angeles (Toll)

(888) 404-2493 United States (Toll-free)

Conference ID: 634 129 265#

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A Brown and Caldwell Teams meeting has been created for this event.

[Help](#)

Project Financing Action Plan Technical Memorandum



To: Reservoir Committee and Authority Board
CC: Budget and Finance Committee
Date: October 8, 2020
From: JP Robinette
Authority Agent Review by: Jerry Brown
Subject: Project Financing Action Plan

1.0 Introduction

In August 2020, a revised Amendment 2 Work Plan was approved. The work plan included an operating budget through the end of 2021 with a start date of September 1, 2020. A \$1.5 million placeholder was established in the budget to resource the work needed to achieve the 75% local cost share commitment, a requirement under Prop 1 (WSIP), which is administered by the California Water Commission (CWC). The Prop 1 requirement includes no specific definition of what constitutes the commitment so there appears to be latitude to self-define.

At the joint Reservoir Committee and Authority Board September 2020 meeting, there was concurrence on a set of deliverables to achieve the required local cost share commitment and direction was given to prepare an action plan involving these items.

This action plan represents the Authority's strategy for advancing next steps for Strategic Plan Goal 1 (Affordability) and Goal 4 (Effective) and contains an approach and process for securing local cost share commitment, a schedule for these activities, a set of resources and associated budgets needed, and recommended next steps.

2.0 Cost Share Commitment Approach and Process

At the September joint meeting, it was confirmed that information answering the following "three big questions" represents an appropriate framework for providing project agreement participants and Authority Board members with project assurances that would facilitate making the necessary local cost share commitment. Also, since the Prop 1 requirement precedes the State's final contractual commitment of funding, having these questions answered for the local cost share should suffice to meet the State's requirement as well. This is an issue we would engage CWC staff on once there is Board concurrence with the approach. The proposed "three big questions" are:

- What do we get? ("we" refers to the individual participating agency)
- What does it cost us? ("us" refers to the individual participating agency)
- How do we pay for it? ("we" refers to all of the local agencies together)

The assurances needed for agencies to commit to their share of the project are summed up in two key deliverables: the storage and supply services contract term sheet and the plan of finance (Figure 1). The process for developing these key deliverables is outlined in Figure 2.

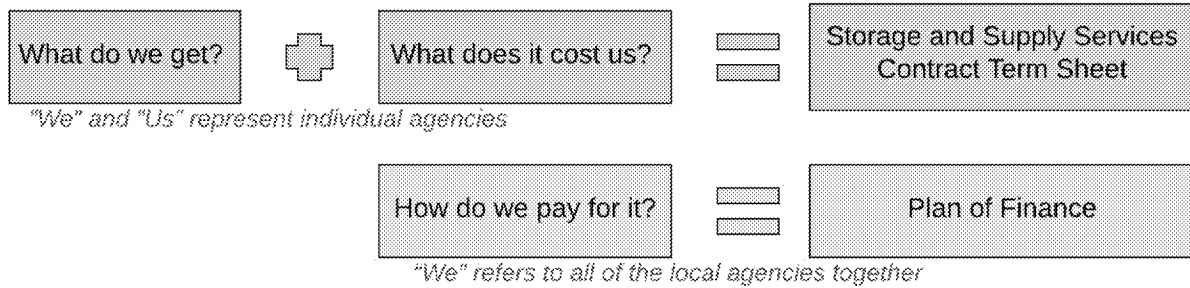


Figure 1. Member Assurances

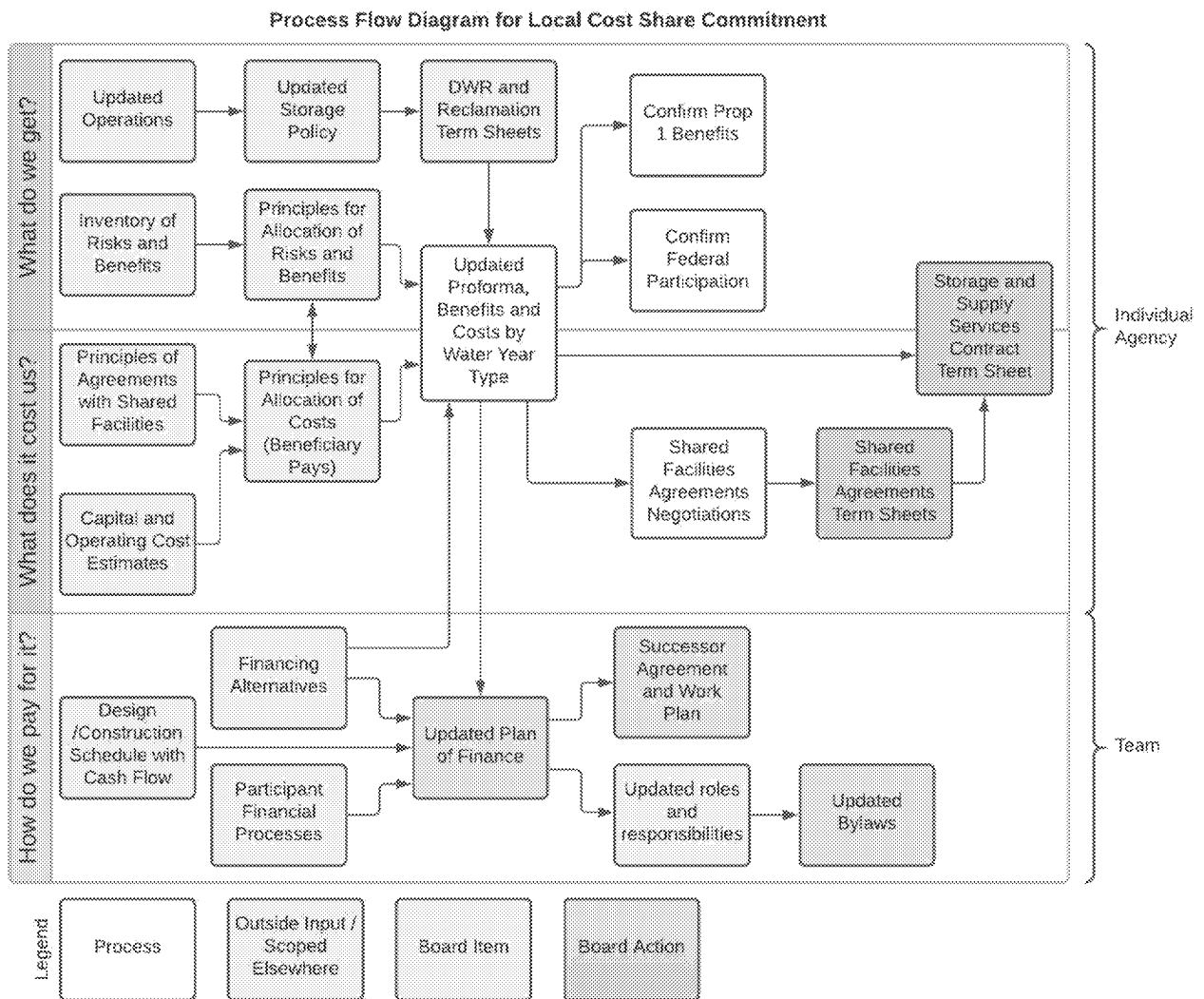


Figure 2. Cost Share Commitment Process

Confirmation will be sought from CWC staff, but it is assumed that Reservoir Committee and Authority Board approval of the following deliverables will satisfy the Prop 1 requirement of 75% local cost share commitment by Jan 1, 2022:

- Plan of Finance
- Storage and Supply Services Contract (SSSC) Term Sheet
- Successor Agreement and Work Plan (for activities post Jan 1, 2022)

In order to complete a term sheet for the SSSC it is expected that shared facilities term sheets for the use of the Glenn Colusa Irrigation District facilities, Tehama Colusa Canal Authority Facilities, and the Colusa Basin Drain will be required. Additionally, should the updated plan of finance impact roles and responsibilities between the Reservoir Committee and Authority Board, an update to the Authority Bylaws would be required.

3.0 Schedule

To meet the Prop 1 due date of 75% local cost share commitment by January 1, 2022, the schedule in Figure 3 has been developed. Critical outside process that impact the schedule are shown in grey.

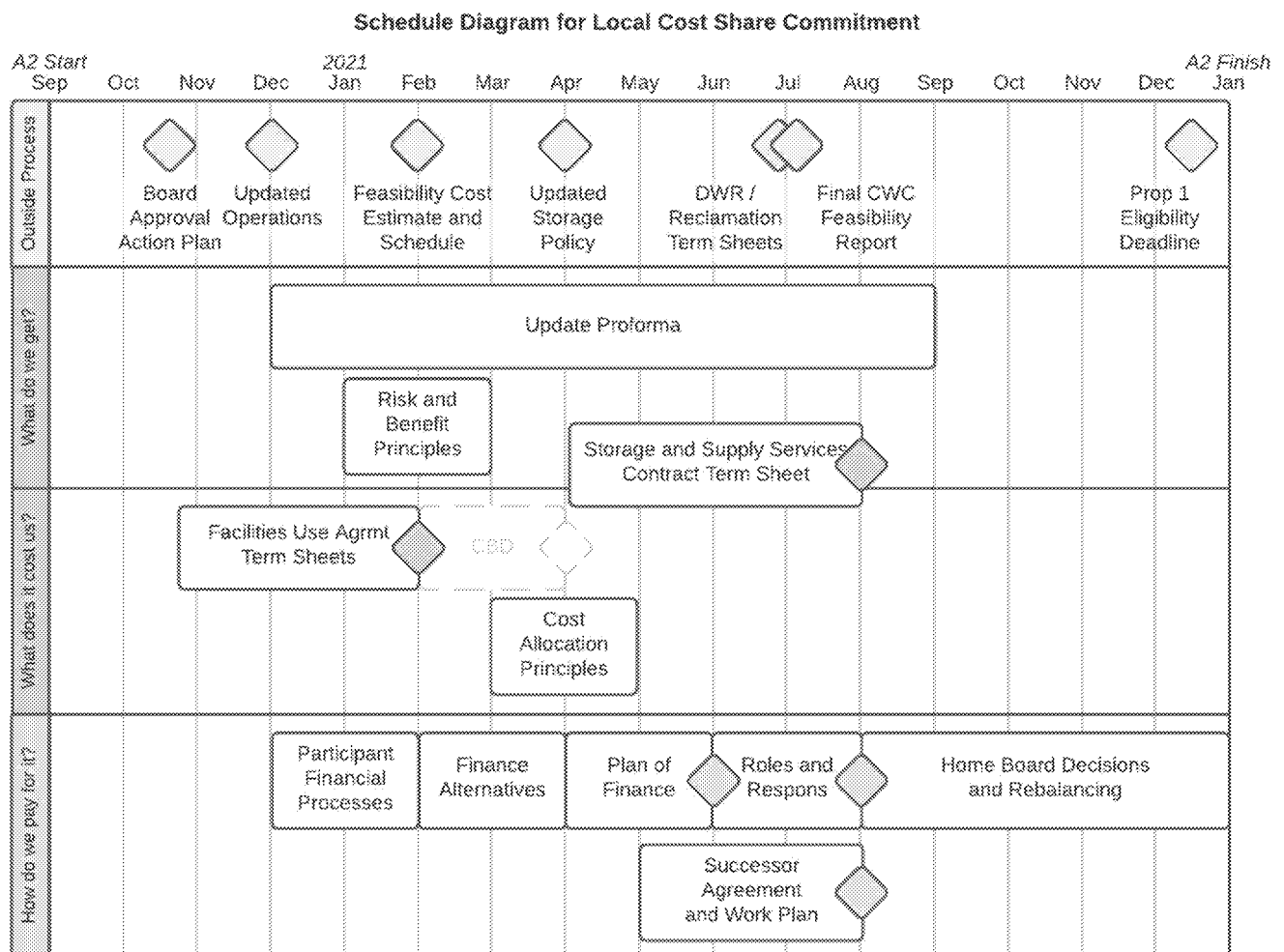


Figure 3. Cost Share Commitment Schedule

4.0 Resources and Budget

The anticipated resources include to deliver the scope on schedule include the project controls consultant, Brown and Caldwell, for overall task leadership, Montague DeRose and Associates for municipal advisory services, Stradling Yocca Carlson and Rauth for bond counsel services, and The Catalyst Group for as-needed facilitation support and strategic plan alignment. Task orders have been developed for these resources and are to be considered at the October Reservoir Committee and Authority Board meetings. Table 1 shows a summary of costs by deliverable for each firm compared to the approved work plan. Unallocated funds remain and will be committed only upon future approval by the Reservoir Committee and Authority Board.

Table 1. Cost Share Commitment Resources

Deliverable / Firm	Work Plan Budget Incl. Placeholder* (\$k)	October '20 Budget Allocations (\$k)
Plan of Finance	\$289	\$447
Brown and Caldwell	\$39	\$169
The Catalyst Group		\$40
Montague DeRose and Associates	\$250	\$148
Stradling Yocca Carlson & Rauth		\$90
Shared Facilities Term Sheets		\$105
Brown and Caldwell		\$105
Storage and Supply Services Contract Term Sheet		\$379
Brown and Caldwell		\$379
Plan of Finance Placeholder	\$1,211	\$569
Unallocated	\$1,211	\$569
Work Plan Budget	\$1,500	\$1,500

* Per Amendment 2 Work Plan (Rev D) approved in August 2020.

5.0 Recommended Next Steps

Staff recommends the approach, schedule, and budget outlined in this action plan be adopted and implemented. Approval in October 2020 is important for meeting the Prop 1 deadline for 75% local cost share commitment by January 1, 2022.

Following approval of this action plan, the following implementation steps are recommended:

1. Approve task orders for identified resources in October 2020.
2. Establish an appropriate work group / committee for the local cost share commitment effort.
3. Execute necessary organizational reporting changes.
4. Begin facilities use agreement negotiations (per Figure 3) through delegation of lead negotiator responsibilities.

Handouts

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Imported Water Storage Team can you be prepared to answer the questions?

- *LV3 is more of the same, very limited benefit to SBA Contractors, and a 60% Public Benefit due to accepting Prop1 monies.
 - Can you compute the cost?
- The LV-JPA now will require a super majority vote from the other members to allow leaving the LV-JPA
 - Is this true?
- SBA Contractors are being asked to partially reimburse CCWD for LV1 and LV2. (amount not yet published).
 - Can you confirm zero reimbursement?
- The 8-ft diameter Bethany Transfer Pipeline can be invested in separately
 - Can you confirm this is still true?
- LV4 (500,000-acre feet) allowed in Bay Delta Record of Decision, and LV5 (1-million acre feet using saddle dams) would be located at a site near the Transfer Station over 5 miles down stream and probably require removing LV1-3.
 - Is this accurate?
- Sea Level rise of more than 2-ft will result in the Estuary becoming a seasonal water supply due to higher salinity. A 1-million acre foot reservoir would be needed to support CCWD alone.
 - Have we looked at this?

Also what do the potential partner say?

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MEMORANDUM

FC 14 (08-21-19)

TO: Water Storage Exploratory Committee

FROM: Don Rocha, Acting Deputy
Administrative OfficerSUBJECT: Pacheco Reservoir Expansion Project -
Potential Options for Unused Proposition 1
WSIP Funding

DATE: October 27, 2020

Temperance Flat Reservoir Authority Announcement at the California Water Commission

On 10/21/20, the Temperance Flat Reservoir Authority informed the California Water Commission (CWC or Commission) that the Temperance Flat Reservoir Project may not secure 75% of the project's non-state funding by 1/1/22, as required by the project's \$171 million Proposition 1 Water Storage Investment Program (WSIP) grant. In the presentation, the Authority urged that, if the project ultimately fails to meet the requirements, the CWC should reallocate the \$171 million award to another project in the Central Valley. The Commission made no assurances regarding how a reallocation could be accomplished or to what type of projects the unused funds could be reallocated.

As the Committee is aware, the Pacheco Reservoir Expansion Project was awarded \$484,550,000 million from the same Proposition 1 WSIP program, which was the maximum amount for which the Pacheco project could qualify under existing statute and regulation. With the Temperance Flat announcement, there will be an effort by the CWC and other WSIP funded projects to determine how the \$171 million in unused funds could be reallocated. This memo explores options for securing more WSIP funding for the Pacheco Reservoir Expansion Project.

When Would There Be Unused Proposition 1 WSIP Funds?

The following discussion is prefaced on the assumption that a WSIP funded project will fail. The timing of when the CWC or the Legislature will see a WSIP funded project as failing may not occur until a project misses the statutory deadline of 1/1/22 for completing draft environmental documents, submitting a feasibility study, and securing 75% of non-state funding. Until at least one of the WSIP funded projects is seen as failing, the CWC and the Legislature are not likely to take a binding action to reallocate the funding. However, planning for how to reallocate Temperance Flat Reservoir funds likely proceeds now.

Statutory Changes Require Approval by the Voters

California Water Code Section 79760 (a), enacted by Proposition 1, requires that any amendments to Chapter 8 relating to the Water Storage Investment Program (WSIP) must first pass both houses of the Legislature with a 2/3 vote and then appear on the statewide ballot for approval by a majority of California voters. While improbable of success, the most viable way to amend Proposition 1 would be to attach statutory changes to another possible water bond measure that would go to the voters on a 2022 statewide ballot or later.

Pacheco's Maximum Conditional Eligibility Determination

Both the statutory language and CWC regulations require that state funds only be spent on public benefits as defined in the statute and that a maximum of 50% of project costs can be paid by the state. The public benefits of the Pacheco project were already determined by the CWC and a Maximum Conditional Eligibility Determination (MCED) was assigned to Pacheco of \$484,550,000. As stated above, that is the maximum amount of funding that can be provided to the Pacheco project pursuant to the statute and the regulations as they are in place today.

CWC Reconsideration of Pacheco's MCED?

One question that comes to mind is if the CWC could reconsider the MCED for Pacheco based on a higher project cost and a revised requested amount. The emergency water supply and environmental benefits scored for Pacheco were higher than needed to get to the 50% funding limit. If reconsideration happens, Pacheco also might qualify for dual designation in more than one funding category, namely a "reservoir reoperation project," in addition to its existing designation as a "surface storage project." Our review of the Proposition 1 statute (Attachment 1) found no reason why the CWC could not amend the WSIP regulations to allow for a

reconsideration of the MCED based on updated project information, especially if that reconsideration were requested by the project applicant. However, this is tempered with the fact that some WSIP project applicants were ranked with significant public benefits, but either did not receive their full funding request or received no funding at all. Pacheco would be competing with those projects in the minds of the CWC commissioners as they considered reallocation of WSIP funds.

CWC’s Non-Binding Resolution on Reallocation of Unused Funds

On 9/19/2018, 2/20/2019, and 3/20/19, the CWC considered offering advice to a future Commission as to what should happen to unused funding should a WSIP project fail. In the 3/20/19 meeting, the CWC adopted a resolution (Attachment 2) that advises a future Commission on how it could redistribute funding. The resolution is non-binding and states that:

- 1) The Commission could distribute funding to the Rank 3 projects that didn't secure all the funding they requested; and/or
- 2) Query applicants who requested less than their Commission approved eligible amounts.

* Neither scenario would allow Pacheco to secure additional funding.

In 2018 and 2019 as the CWC was considering the non-binding resolution, the staff considered the options for the Pacheco project and determined, based on project cost estimates available at that time, that Pacheco had already been awarded the maximum amount possible pursuant to the 50% project cost limit in Water Code Section 79756, that can only be changed by a 2/3 vote in both houses of the Legislature and a majority approval of the voters.

Statutory Change a Longshot

Our options are quite limited by the Water Code regarding state legislation to allow for a reconsideration of the MCED for Pacheco. The most viable option for statutory change to the Water Code provisions of Proposition 1 is adding language to a future water bond that is passed by a 2/3 vote in both houses of the Legislature and approved by a majority of voters. That’s a high bar, and while technically possible, there are numerous interests that would want to consume the unused Proposition 1 funds into the purposes of the new water bond, which may or may not include a new round of applications for water storage projects. While Water Code Section 79750 prohibits the repurposing of WSIP funds, that could be changed by the voters through another bond measure. Any statutory change presents additional political risk and the 2/3 vote in the Legislature makes a Pacheco windfall even less likely.

Regulatory Change Allowing Reconsideration of MCED - Most Viable Path

A reconsideration of the Pacheco MCED may be possible if Valley Water works with the remaining project applicants on a regulatory change by the CWC that would award the unused funds among the remaining projects, but also would allow for a reconsideration of higher project costs across the board for every project applicant. Given the attached non-binding Commission resolution discussed above, a regulatory effort may include the Rank 3 projects as well as the reconsideration of all the WSIP funded projects’ costs and MCED.

With the 10/21/20 announcement by the Temperance Flat Reservoir Authority referenced above, the scramble is on to get the CWC to adopt new regulations or find a way to make the existing regulations work. Staff intends to pursue a regulatory change by the CWC as the most viable path to a reconsideration of the Pacheco MCED. Valley Water’s Legislative Guiding Principles include direction from the Valley Water Board to seek funding for water supply, climate adaptation, and flood projection projects, all of which could apply to the Pacheco Project.

Funding for Water Infrastructure

- 1. Support funding to ensure sustainable long-term water supplies, including recycled water projects.

Resource Protection Funding

- 1. Support funding to address climate change impacts on water supply and flood management facilities and infrastructure needs.

Flood Protection Funding

- 1. Support funding for infrastructure, construction, and repair of flood protection systems.

Next Steps

The CWC may not take a formal action to reallocate funds from a failing WSIP funded project until a project misses the statutory 1/1/22 deadline for completing draft environmental documents, submitting a feasibility study, and securing 75% of non-state funding for the project. Based on the Legislative Guiding Principles listed above, staff will begin working with other WSIP funded project applicants to determine if a unified approach is possible and to determine if the CWC would reopen the MCED determinations.

HANDOUT: AGENDA ITEM 4.3

Based on staff's review of the statute and regulations, the CWC cannot open a new round of grant applications because statutory deadlines in Water Code Section 79757 likely could not be met by new project applicants. A regulatory approach would enable only a reallocation to the existing WSIP applicants. A regulatory change that would make Pacheco eligible must address the MCED already determined at the maximum 50% of the project cost as required by the statute. Staff will begin exploration with existing WSIP applicants and the CWC to determine if a regulatory approach to allow reconsideration of the WSIP funded projects' MCEs is politically viable.

Don Rocha

Acting Deputy Administrative Officer
Office of Government Relations

Attachment 1: Chapter 8 of Proposition 1 Water Storage Investment Program Statute
Attachment 2: California Water Commission Resolution Dated 3/20/19

cc: R. Callender, M. Richardson, R. Gibson, A. Baker, C. Hakes, B. Broome, R. McCarter, M. Ozbilgin

BB
(2020-10-27 DR to Wtr Storage Cmte - Reallocation of WSIP Funds - Final)


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WATER CODE - WAT

DIVISION 26.7. Water Quality, Supply, and Infrastructure Improvement Act of 2014 [79700 - 79798] (*Division 26.7 added by Stats. 2014, Ch. 188, Sec. 8.*)

CHAPTER 8. Statewide Water System Operational Improvement and Drought Preparedness [79750 - 79760] (*Chapter 8 added by Stats. 2014, Ch. 188, Sec. 8.*)

79750. (a) Notwithstanding Section 162, the commission may make the determinations, findings, and recommendations required of it by this chapter independent of the views of the director. All final actions by the commission in implementing this chapter shall be taken by a majority of the members of the commission at a public meeting noticed and held pursuant to the Bagley-Keene Open Meeting Act (Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code).

(b) Notwithstanding Section 13340 of the Government Code, the sum of two billion seven hundred million dollars (\$2,700,000,000) is hereby continuously appropriated from the fund, without regard to fiscal years, to the commission for public benefits associated with water storage projects that improve the operation of the state water system, are cost effective, and provide a net improvement in ecosystem and water quality conditions, in accordance with this chapter. Funds authorized for, or made available to, the commission pursuant to this chapter shall be available and expended only for the purposes provided in this chapter, and shall not be subject to appropriation or transfer by the Legislature or the Governor for any other purpose.

(c) Projects shall be selected by the commission through a competitive public process that ranks potential projects based on the expected return for public investment as measured by the magnitude of the public benefits provided, pursuant to criteria established under this chapter.

(d) Any project constructed with funds provided by this chapter shall be subject to Section 11590.

(*Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.*)

79751. Projects for which the public benefits are eligible for funding under this chapter consist of only the following:

(a) Surface storage projects identified in the CALFED Bay-Delta Program Record of Decision, dated August 28, 2000, except for projects prohibited by Chapter 1.4 (commencing with Section 5093.50) of Division 5 of the Public Resources Code.

(b) Groundwater storage projects and groundwater contamination prevention or remediation projects that provide water storage benefits.

(c) Conjunctive use and reservoir reoperation projects.

(d) Local and regional surface storage projects that improve the operation of water systems in the state and provide public benefits.

(*Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.*)

79752. A project shall not be funded pursuant to this chapter unless it provides measurable improvements to the Delta ecosystem or to the tributaries to the Delta.

(*Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.*)

79753. (a) Funds allocated pursuant to this chapter may be expended solely for the following public benefits associated with water storage projects:

(1) Ecosystem improvements, including changing the timing of water diversions, improvement in flow conditions, temperature, or other benefits that contribute to restoration of aquatic ecosystems and native fish and wildlife,

including those ecosystems and fish and wildlife in the Delta.

(2) Water quality improvements in the Delta, or in other river systems, that provide significant public trust resources, or that clean up and restore groundwater resources.

(3) Flood control benefits, including, but not limited to, increases in flood reservation space in existing reservoirs by exchange for existing or increased water storage capacity in response to the effects of changing hydrology and decreasing snow pack on California's water and flood management system.

(4) Emergency response, including, but not limited to, securing emergency water supplies and flows for dilution and salinity repulsion following a natural disaster or act of terrorism.

(5) Recreational purposes, including, but not limited to, those recreational pursuits generally associated with the outdoors.

(b) Funds shall not be expended pursuant to this chapter for the costs of environmental mitigation measures or compliance obligations except for those associated with providing the public benefits as described in this section.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79754. In consultation with the Department of Fish and Wildlife, the state board, and the Department of Water Resources, the commission shall develop and adopt, by regulation, methods for quantification and management of public benefits described in Section 79753 by December 15, 2016. The regulations shall include the priorities and relative environmental value of ecosystem benefits as provided by the Department of Fish and Wildlife and the priorities and relative environmental value of water quality benefits as provided by the state board.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79755. (a) Except as provided in subdivision (c), no funds allocated pursuant to this chapter may be allocated for a project before December 15, 2016, and until the commission approves the project based on the commission's determination that all of the following have occurred:

(1) The commission has adopted the regulations specified in Section 79754 and specifically quantified and made public the cost of the public benefits associated with the project.

(2) The project applicant has entered into a contract with each party that will derive benefits, other than public benefits, as defined in Section 79753, from the project that ensures the party will pay its share of the total costs of the project. The benefits available to a party shall be consistent with that party's share of total project costs.

(3) The project applicant has entered into a contract with each public agency identified in Section 79754 that administers the public benefits, after that agency makes a finding that the public benefits of the project for which that agency is responsible meet all the requirements of this chapter, to ensure that the public contribution of funds pursuant to this chapter achieves the public benefits identified for the project.

(4) The commission has held a public hearing for the purposes of providing an opportunity for the public to review and comment on the information required to be prepared pursuant to this subdivision.

(5) All of the following additional conditions are met:

(A) Feasibility studies have been completed.

(B) The commission has found and determined that the project is feasible, is consistent with all applicable laws and regulations, and will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta.

(C) All environmental documentation associated with the project has been completed, and all other federal, state, and local approvals, certifications, and agreements required to be completed have been obtained.

(b) The commission shall submit to the Legislature its findings for each of the criteria identified in subdivision (a) for a project funded pursuant to this chapter.

(c) Notwithstanding subdivision (a), funds may be made available under this chapter for the completion of environmental documentation and permitting of a project.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79756. (a) The public benefit cost share of a project funded pursuant to this chapter, other than a project described in subdivision (c) of Section 79751, shall not exceed 50 percent of the total costs of any project funded under this chapter.

(b) No project may be funded unless it provides ecosystem improvements as described in paragraph (1) of subdivision (a) of Section 79753 that are at least 50 percent of total public benefits of the project funded under this

chapter.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79757. (a) A project is not eligible for funding under this chapter unless, by January 1, 2022, all of the following conditions are met:

- (1) All feasibility studies are complete and draft environmental documentation is available for public review.
- (2) The commission makes a finding that the project is feasible, and will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta.
- (3) The director receives commitments for not less than 75 percent of the nonpublic benefit cost share of the project.

(b) If compliance with subdivision (a) is delayed by litigation or failure to promulgate regulations, the date in subdivision (a) shall be extended by the commission for a time period that is equal to the time period of the delay, and funding under this chapter that has been dedicated to the project shall be encumbered until the time at which the litigation is completed or the regulations have been promulgated.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79758. Surface storage projects funded pursuant to this chapter and described in subdivision (a) of Section 79751 may be made a unit of the Central Valley Project as provided in Section 11290 and may be financed, acquired, constructed, operated, and maintained pursuant to Part 3 (commencing with Section 11100) of Division 6.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79759. (a) The funds allocated for the design, acquisition, and construction of surface storage projects identified in the CALFED Bay-Delta Record of Decision, dated August 28, 2000, pursuant to this chapter may be provided for those purposes to local joint powers authorities formed by irrigation districts and other local water districts and local governments within the applicable hydrologic region to design, acquire, and construct those projects.

(b) The joint powers authorities described in subdivision (a) may include in their membership governmental partners that are not located within their respective hydrologic regions in financing the surface storage projects, including, as appropriate, cost share participation or equity participation. Notwithstanding Section 6525 of the Government Code, the joint powers agencies described in subdivision (a) shall not include in their membership any for-profit corporation or any mutual water company whose shareholders and members include a for-profit corporation or any other private entity. The department shall be an ex officio member of each joint powers authority subject to this section, but the department shall not control the governance, management, or operation of the surface water storage projects.

(c) A joint powers authority subject to this section shall own, govern, manage, and operate a surface water storage project, subject to the requirement that the ownership, governance, management, and operation of the surface water storage project shall advance the purposes set forth in this chapter.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

79760. (a) In approving the Water Quality, Supply, and Infrastructure Improvement Act of 2014, the people were informed and hereby declare that the provisions of this chapter are necessary, integral, and essential to meeting the single object or work of the Water Quality, Supply, and Infrastructure Improvement Act of 2014. As such, any amendment of the provisions of this chapter by the Legislature without voter approval would frustrate the scheme and design that induced voter approval of this act. The people therefore find and declare that any amendment of the provisions of this chapter by the Legislature shall require an affirmative vote of two-thirds of the membership in each house of the Legislature and voter approval.

(b) This section shall not govern or be used as authority for determining whether the amendment of any other provision of this act not contained in this chapter would constitute a substantial change in the scheme and design of this act requiring voter approval.

(Added by Stats. 2014, Ch. 188, Sec. 8. (AB 1471) Approved in Proposition 1 at the November 4, 2014, election.)

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
CALIFORNIA WATER COMMISSION

RESOLUTION NUMBER: 2019-02

RESOLUTION REGARDING AVAILABILITY OF ADDITIONAL FUNDS IN
THE WATER STORAGE INVESTMENT PROGRAM

WHEREAS, on November 4, 2014, California voters approved Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014 ("Proposition 1");

WHEREAS, Proposition 1 contained Chapter 8, "Statewide Water System Operational Improvement and Drought Preparedness," ("Chapter 8") which appropriates \$2.7 billion to the California Water Commission ("Commission") to invest in public benefits associated with water storage projects "that improve the operation of the state water system, are cost effective, and provide a net improvement in ecosystem and water quality conditions" (Water Code section 79750);

WHEREAS, on December 14, 2016, the Commission adopted regulations governing the quantification and management of public benefits associated with water storage projects that meet the criteria established for public investment (the Water Storage Investment Program ("WSIP"));

WHEREAS, the regulations were approved by the Office of Administrative Law on March 7, 2017, and appear in the California Code of Regulations, title 23, section 6000 *et seq.* ("regulations");

WHEREAS, the Commission, pursuant to the terms of the regulations, began the application period for funds from the WSIP on March 15, 2017;

WHEREAS, the Commission closed the application period for funds from the WSIP on August 14, 2017;

WHEREAS, the Commission, at meetings on May 3-5, 2018, determined each project's public benefit ratio;

WHEREAS, the Commission, at meetings on June 28, 2018, made the

determinations necessary pursuant to regulations section 6011(c) for eight projects that applied for funding from the WSIP;

WHEREAS, the Commission, at meetings on July 24-25, 2018, determined Maximum Conditional Eligibility Amounts for the eight projects that were eligible to receive funds from the WSIP;

WHEREAS, the Commission made Maximum Conditional Eligibility Amount determinations that total the amount of funds available in the WSIP;

WHEREAS, at its meeting on September 19, 2018, the Commission discussed how to address the potential issue of additional funding becoming available through the WSIP in the future because a project may not be able to move forward;

WHEREAS, the regulations do not address what the Commission should do if funds become available;

WHEREAS, the Commission expressed a desire to adopt a resolution with potential considerations for the disbursement of funds that may become available for future Commissions;

NOW, THEREFORE, BE IT RESOLVED that the California Water Commission hereby recommends the following preferences be considered if additional funds become available:

- Adjust the Maximum Conditional Eligibility Determination for Rank 3 projects to the Applicant Request from May 2018 (Table 1)

Table 1. Rank 3 Project Summary

Project	Score	Applicant Request (May 2018)	Commission MCED (July 2018)	Difference between MCED and Request
Sites Project	61	\$916,620,000	\$816,377,686	\$100,242,314
Kern Fan	54	\$85,700,000	\$67,537,315	\$18,122,685*
Willow Springs	53	\$123,290,000	\$95,405,999	\$27,884,001
Total				\$146,249,000
*Requested amount exceeds eligible amount. Eligible amount of \$85,660,000 used.				

- Query applicants who requested less than their Commission approved eligible amount from May 2018 to see if additional funding could be utilized and adjust those MCEs accordingly (Table 2)

Table 2. WSIP Projects Requesting Less than the Eligible Amount

Project	Rank	Commission-Approved Eligible Amount (May 2018)	Applicant Request (May 2018)	Commission MCE (July 2018)	Difference between Applicant Request and Eligible Amount
South County Ag Program	2	\$280,530,000	\$280,500,000	\$280,500,000	\$30,000
Sites Project	3	\$1,008,280,000	\$916,620,000	\$816,377,686	\$91,660,000
Total					\$91,690,000

- If, after consideration of the above, funds remain in the WSIP, consider needed changes in the regulations to perform an expedited solicitation to fund additional projects.

Signed:



Armando Quintero, Chair
California Water Commission

3/20/2019
Date

Attest:



Joseph R. Yun, Executive Officer
California Water Commission

3/20/2019
Date

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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/9/2020 6:37:52 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]
Subject: Re: NGO Outreach

Yes, I can do that. As you requested, I did reach out to Kevin this week but haven't heard back from him yet. Also Ryan asked today that we take the lead on the cooperating agency meeting meeting and provide the same type of agenda.

On Oct 9, 2020, at 6:03 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Hi Laurie – I talked with Jerry today on our approach and he was good with it. He did encourage that we focus on the matrix and resolution of the 2017 EIR/EIS comments – and then take on new issues after that.

Can you schedule a planning call with us and Kevin and Monique/Nicole? I'd like to start planning out the first meeting, working on a presentation, and then getting an invite out to a group of NGOs. We need to work through all of these logistics pretty quickly to get this meeting in October.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Monday, October 5, 2020 8:00 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: NGO Outreach

Hi Ali – we could have meetings on a range of topics, depending on questions or requests from the NGOs. I think it also depends on how far we are in the approach/analysis. Either way, I think the topical approach will allow for all groups to be invited and attend based on interest.

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Sunday, October 4, 2020 4:48 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: NGO Outreach

Thanks Laurie. I am good with this approach. Thanks for thinking through this.

Only one question / thought – why would we not have follow-on meetings on all of the topics identified in Attachment B? I could see some of the NGOs like Defenders wanting to know more information on GGS mitigation for example. Or

do we host the first meeting, suggest follow-on topics for future meetings and then let them tell us what else they would like to talk about?

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, September 30, 2020 9:59 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: NGO Outreach

Hi Ali,

I put the approach to NGO outreach in memo format to give it more context. The memo and supporting attachments have been placed on SharePoint in the confidential folder here:

https://sitesreservoirproject.sharepoint.com/:f:/r/EnvPlanning/Confidential%20%20Attorney_Client/NGO%20outreach%20approach?csf=1&web=1&e=b1QAe7

I have include a copy of the staff report from August that addressed the NGO comments for reference.

Let me know how you would like to move forward. As you will see, I think the first step is a general workshop to update all of the NGO commenters on the status of the project.

Thanks,

Laurie

Laurie Warner Herson
Principal/Owner
<[image001.png](#)>
Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 10/11/2020 6:27:15 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Luu, Henry [Henry.Luu@hdrinc.com]
Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group - Kunde Comments

Sounds good, I'm happy to present it.

Erin

Erin Heydinger, PE
Assistant Project Manager

On Oct 11, 2020, at 4:32 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

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This all sounds good to me Erin. And yes, I agree, we should ask the members who wants their water on a Table A pattern and who wants it in the transfer window. This will make a difference in the modeling. I am not sure if CH can separate this out in the model as they only have so many "buckets" for SOD members. But maybe??? We should talk with Leaf on this.

I reviewed the presentation and am good with it. I'd be happy for you to take it so the member continue to see your expanding role in the Program.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Sunday, October 11, 2020 2:26 PM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group - Kunde Comments

I suggest we have as a "next step" refining SWP interactions. Ali, I know Rob keeps mentioning that our assumptions related to Oroville operations are important for our deliveries. We could potentially ask SWP contractors how they'd like their water to be modeled – as Project water or transfer water. Ali – if you agree with this I'm thinking we should run it by Rob Leaf to see how much work it is to modify the demand patterns.

Henry, for the 1,000 cfs item in the CBD I suggest making it very clear that even in the August/September timeframe there will be opportunities for releases in the CBD, possibly even up to 1,000 cfs based on operational changes in the Drain and, if not at that level, then at a lower level.

Frankly, I'm not quite sure how to discuss whether 1,000 cfs is adequate for the Dunnigan pipeline. I see this as a discussion between Pete Rude and Rob Leaf about when the CBD is the constraint and when the pipeline is the constraint, if ever. I don't think this is something that the ops modeling team can answer – it likely needs to come from a hydraulic system model like what would normally be used in pipeline sizing. But, demand information can come from Leaf's team.

Ali – I put together a few slides in the PowerPoint. Here's an outline. I'm available tomorrow morning if you want to discuss, particularly the last item. Also I can do these slides if you'd like, or I'm happy to have you do them.

- Recent work
 - Review of knobs, running preliminary scenarios now to assess performance
- Next steps
 - Finalize operational criteria, particularly w/ DWR and Reclamation
 - Create 'sideboards' for CDFW discussions – negotiating strategy, ensure feasible project, maximize env. Benefits to received full Prop 1 funding
 - Run full modeling suite with selected diversion criteria
- Input needed
 - SWP contractors – model as Project water or transfer water? Participant-specific
 - CVP contractors – input on an agreement with Reclamation to allow for CVP carryover in Sites (note – Ryan approached me about whether we would model our participants as storing unused CVP and carry it over in Sites. I think right now CVP contractors have to use their water w/in 30 days. This would allow them to store their CVP allocation in Sites. I think our participants have thought a lot about this and I'd be interested to get some feedback from them. Maybe we bring it up tomorrow and say that we'd like to have a follow-up meeting with CVP contractors)

Link to

presentation: <https://sitesreservoirproject.sharepoint.com/:f:/r/OpsModeling/Shared%20Documents/Workgroup/2020-8%20October?csf=1&web=1&e=mABw9e>

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Luu, Henry <Henry.Luu@hdrinc.com>

Sent: Thursday, October 8, 2020 11:39 AM

To: Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>

Subject: FW: Sites October 2020 Ad Hoc Ops and Engineering Work Group - Kunde Comments

Hi Ali and Erin,

Rob Kunde would like further discussions on the items noted in his email below during the Work Group meeting this coming Monday. A summary of the CBD hydraulic model results are attached for your reference. The study noted that August/September releases into CBD at 1,000 cfs will result in significant water surface elevation change and requires additional coordination/analysis to identify specific mitigation measures (staff recommendation) but is not a fatal flaw. Item no. 3 appears to be operations related, and am hoping you can assist when it comes up. Do you think we need a coordination call to review before Monday?

Thank you,

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

From: Rob Kunde [mailto:rkunde@wrnwdsd.com]
Sent: Thursday, October 8, 2020 9:53 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>
Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group - Kunde Comments

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Henry and Mike:

Thanks for the description below. Potential concerns for further discussion:

1. The CH2M prior modeling for Sites deliveries to State Water Contractors South of the Delta assumed deliveries would be made in many months, but significantly in the July to September time frame. The comment below suggests CBD water surface elevation changes may preclude significant August and September releases.'
2. Many Sites participants may choose to make Sites deliveries as SWP Non-Project water which limits deliveries to the July to November time frame under the current federal Biological Opinion. This delivery pattern has not been modeled, but August/September release restrictions would be an issue under this delivery pattern.
3. I also request a refresher on the adequacy of the 1000 cfs release parameter to meet South of Delta participant demands.

The above needs further discussion in the Work Group including input from CH2M.

Robert J. Kunde, P.E.

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

12109 Highway 166, Bakersfield, CA 93313

cell: 661-345-3719 email: rkunde@wrnwdsd.com

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, October 6, 2020 12:46 PM
To: Michael Azevedo
Cc: Rob Kunde
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

Mike,

Item 3 – CBD Hydraulic Modeling Results: review model results

- The model indicates CBD is a viable project feature and can accommodate 1,000 cfs releases during the months of June, July, and October without major impacts to water surface elevation

- There are seasonal (timing) and operational (release) constraints – the model analyzed project releases for dry and critical years based on historical data between 2013 and 2019
- Staff recommends advancing modeling efforts by acquiring supplemental data (Balsdon Weir, Davis Weir, verification with RD108), and evaluation of release scenarios of less than 1,000 cfs
 - Release scenarios with less than 1,000 cfs may extend the timeframe that releases can occur, which can potentially increase the amount of water released from Sites Reservoir. This will provide greater operation flexibility for the Project

Item 5 – Level of Service Standards for Engineering Feasibility Analysis: review diversion and release criteria established during Value Planning vs. current feasibility analysis

- The engineering team continues to advance feasibility analysis based on diversion and release criteria identified in the April 2020 Sites Project Value Planning Alternatives Appraisal Report
 - 2,100 cfs from TC Canal to Sites Reservoir
 - 1,800 cfs from GCID Main Canal to Sites Reservoir
 - 1,000 cfs release from Sites Reservoir to CBD/Sacramento River
- Proposed improvements at the Red Bluff pumping plant will increase capacity from 2,000 cfs to 2,500 cfs, which will accommodate project diversion requirement from the TC Canal
- In discussion with GCID, improvements to GCID facilities will be required to reliably convey 1,800 cfs to Sites Reservoir. Staff recommend to proceed with analysis of GCID facilities to address reliability concerns
- Level of Service Standards for releases can be met based on results from the CBD Hydraulic Model
- Staff is requesting the Work Group to provide input and/or accept the proposed diversion and release Level of Service Standards, as noted above, for engineering feasibility analysis

Item 6 – Operations Modeling Status:

- Staff update on operations modeling status. Results are pending and will be presented at a later date.

I hope the above is sufficient, but please let me know if you would like additional clarifications.

Henry N. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Michael Azevedo [<mailto:mjazevedo@countyofcolusa.com>]
Sent: Tuesday, October 6, 2020 9:30 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Rob Kunde <rkunde@wrnwds.com>
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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Henry,

Would you please provide a synopsis of the information to be presented relative items 3,5 & 6 please?

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, October 6, 2020 7:14 AM

To: Michael Azevedo <mjazevedo@countyofcolusa.com>

Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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Thank you, sir.

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Michael Azevedo [<mailto:mjazevedo@countyofcolusa.com>]

Sent: Tuesday, October 6, 2020 7:10 AM

To: Rob Kunde <rkunde@wrmwsd.com>; Luu, Henry <Henry.Luu@hdrinc.com>

Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>

Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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I can make that work as well.

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Rob Kunde <rkunde@wrmwsd.com>

Sent: Monday, October 5, 2020 4:26 PM

To: Luu, Henry <Henry.Luu@hdrinc.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>

Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>

Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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I am available for 10/12 10:00-11:30 am

Robert J. Kunde, P.E.

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

12109 Highway 166, Bakersfield, CA 93313

cell: 661-345-3719 email: rkunde@wrmwsd.com

Draft_0004110

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Monday, October 5, 2020 4:06 PM
To: Rob Kunde; Michael Azevedo
Cc: Jerry Brown; Alicia Forsythe; Heydinger, Erin; White, Drew
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

Rob and Mike – thank you for your input. How about next Monday (10/12/2020) from 10am to 11:30am?

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Rob Kunde [<mailto:rkunde@wrnwsd.com>]
Sent: Monday, October 5, 2020 9:07 AM
To: Michael Azevedo <mjazevedo@countyofcolusa.com>; Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>
Subject: Re: Sites October 2020 Ad Hoc Ops and Engineering Work Group

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I have marked my availability below but would prefer to accommodate Mike's availability. My mornings are available after 9am through Oct 15 except for Oct 14.

Robert J. Kunde, P.E.

Retired Annuitant

Wheeler Ridge-Maricopa Water Storage District

12109 Highway 166, Bakersfield, CA 93313

cell: 661-345-3719 email: rkunde@wrnwsd.com

From: Michael Azevedo <mjazevedo@countyofcolusa.com>
Sent: Monday, October 5, 2020 6:10 AM
To: Luu, Henry; Rob Kunde
Cc: Jerry Brown; Alicia Forsythe; Heydinger, Erin; White, Drew
Subject: RE: Sites October 2020 Ad Hoc Ops and Engineering Work Group

I'm sorry Henry,

I've practically zero afternoon availability for the next three weeks. If staff would like me to participate it will need to be an AM schedule.

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Luu, Henry <Henry.Luu@hdrinc.com>

Sent: Sunday, October 4, 2020 12:30 PM

To: Rob Kunde <rkunde@wrnwdsd.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>

Cc: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; White, Drew <Drew.White@hdrinc.com>

Subject: Sites October 2020 Ad Hoc Ops and Engineering Work Group



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Hello Rob and Mike,

Staff propose to hold an Ad Hoc Operations and Engineering Work Group to review topics included in the attached draft agenda before the next Reservoir Committee meeting. Are you available for a Work Group meeting during any of the following timeframes?

- Thursday (10/8/2020) between 1pm and 5pm - Kunde NOT available
- Friday (10/9/2020) between 1pm and 5pm - Kunde available
- Monday (10/12/2020) between 2pm and 5pm - Kunde available
- Wednesday (10/14/2020) between 1pm and 5pm - Kunde available

We anticipate the meeting topics will take less than one and a half hours to cover. Can you let us know your availability?

Thank you,

Henry N. Luu, PE

D 916.679.8857 M 916.754.7566

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From: Herrin, Jeff [jeff.herrin@aecom.com]
Sent: 10/12/2020 11:23:04 AM
To: Heydinger, Erin [erin.heydinger@hdrinc.com]
CC: Spranza, John [John.Spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Prop 1 Application vs. CDFW Benefits Table
Attachments: WSIP Benefit Comparison Table_jph.docx

Flag: Follow up

Erin,

I provided some comments. We may need a follow-up call to walk through items. My major comments are:

- Some of the items in the left column are consistent with the application (but maybe they shouldn't be due to reduced benefit funding) and some of the information in the column comes from policies that were not developed until months after the application was submitted.
- There are a lot of rows with redundant information. It would be much easier to follow if we can streamline the table to eliminate the redundancy. I could try to rework this and simplify it, but didn't budget for it and would need Henry to confirm if he is comfortable that it is in our SOW.
- CDFW confuses benefits and costs. WSIP could not increase award amounts to cover contingency costs because this was NOT included in Prop 1 funding. Monetized benefits are higher in areas where conveyance is required; however, no additional cost was assigned to the State to cover O&M in the cost allocation appendix. This was not possible under WSIP.
- I think it is in the Authorities best interest to try to get Reclamation's Refuge Water Program to manage and track deliveries to the refuges to the extent possible.
- I assume the Salinity Gates CDFW is talking about need to be opened to release water from the Yolo Bypass into the Delta. If this is the case, there would be no benefit to smelt unless these gates were opened. The Authority would likely need to work an agreement with DWR and Reclamation. Note that RD108 is already working with DWR on smelt and should be able to help coordinate this.
- We made no commitment to releasing water for salmon to the Yolo Bypass and received no funding for this benefit. I don't think Sites has enough water to make a significant dent in this. The only source with sufficient water to meet the salmonid need is the Sacramento River. There is not enough water in storage to provide sufficient volume to move the needle.
- Many of the items identified are associated with impacts and will need to be addressed in the EIR and permitting process. In my mind they are independent of the WSIP contract for water supply. There may be benefit in splitting these out into a separate list.

Let me know if you want a follow-up call.

Jeff Herrin

Water Resources Planner, Water Business Unit, Sacramento, CA
D +1-916-679-2084 IPT 264-679-2084
M +1-916-432-0956
Jeff.Herrin@aecom.com

AECOM

2020 L Street
Suite 400
Sacramento, CA 95811, United States
T +1-916-414-5800
aecom.com

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From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Thursday, October 08, 2020 4:07 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: [EXTERNAL] Prop 1 Application vs. CDFW Benefits Table

Hi Jeff,

We're working on a table comparing CDFW's understanding of the Prop 1 ecosystem benefits versus what was included in our application. Would you be able to take a look at the table and provide your comments or edits sometime next week?

You should be able to access it using this link, but let me know if not:

https://sitesreservoirproject.sharepoint.com/:w:/g/envpermitting/EQOP9eGH8YVDsRvM-bd5h1MBUmmgjI4temMI4Sr_fKTp4Q?e=91C90r

John – FYI I also reviewed and added some comments in there. I uploaded the worksheets to that folder as well.

Thanks!
Erin

*Erin Heydinger, PE, PMP
Asst. Project Manager
Water/Wastewater*

HDR
2379 Gateway Oaks Dr, #200
Sacramento, CA 95833
D 916.679.8863 M 651.307.9758

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Water Storage Investment Program Benefit Comparison



Sites Reservoir Project

The following table compares the benefits identified under the Water Storage Investment Program (WSIP). In 2017, the California Water Commission (Commission) accepted the following monetized public benefits for the Sites Project:

- Ecosystem Improvement—Refuge water supply
- Ecosystem Improvement—Yolo Bypass flows
- Recreation (new recreation locations at Sites Reservoir)
- Flood Control

Total funding is \$816,377,686M:

- Approximately \$241.8M Flood Control and Recreation Benefits
- Approximately \$574.2M Ecosystem Benefits

Emergency Response and Recreation (improvements in water surface elevations at Shasta, Folsom, and Oroville/improvements in fishing) were considered by the Department of Water Resources as non-monetized benefits.

Table 1: WSIP Benefit Approach Comparison

WSIP Benefit Funded or Storage Account Assumption	Sites Application	CDFW Approach
Water Ownership/Management	<ul style="list-style-type: none"> • All Storage Partners are equal (not dependent on size of investment or source of financing) and retain an ownership of storage account within the Sites Reservoir Project that will be managed as described in the Storage Policy. 	<ul style="list-style-type: none"> • WSIP water is unique and would be of a higher priority (appropriated and delivered) than that of other Storage Partners.
	<ul style="list-style-type: none"> • Water appropriated will be placed into Sites Reservoir and then allocated into each Sites Storage Partners contractual storage space proportional to their acquired storage space amount. 	<ul style="list-style-type: none"> • WSIP water is unique and would be of a higher priority (appropriated and delivered) than that of other Storage Partners.
	<ul style="list-style-type: none"> • Each Sites Storage Partner will be responsible for the Operation and Maintenance (O&M) costs associated with the use of their storage allocation space. 	<ul style="list-style-type: none"> • O&M was factored into the Ecosystem Benefit Sheet and is thus already accounted for and funded in the \$816M.
	<ul style="list-style-type: none"> • Water is delivered to members at Funks Reservoir where the Storage Partner would take ownership and be responsible for 	<ul style="list-style-type: none"> • WSIP water would need to be delivered to the benefit location at the cost of the Authority. • The Authority would need to have all agreements and contracts in

Commented [HJ1]: I can't find a reference to the Storage Policy in the application. I don't think it had advanced to a policy at that time. There is a Beneficiary-Pays-Principle on Page 14 of the Executive Summary. Also Page 17 of the Executive Summary indicates we will provide dedicated storage for WSIP benefits.

Commented [HJ2]: Agree that this is the current concept, but it was not spelled out in the application.

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Commented [HJ4]: Benefits are independent of costs. The benefit is only the benefit to the economy. No conveyance costs were allocated to the State and there was no adjustment to the award amount to account for conveyance costs. Any such adjustment would be unauthorized under WSIP - no O&M costs are included in Prop 1 funding.

Commented [HE5]: Jeff, I believe you said the application was silent on O&M. Can you verify?

John, I think CDFW was saying that the Authority was responsible for those costs, not necessarily that they were factored into the \$816M, but I could be wrong...

Commented [HJ6]: Erin, the application included O&M costs (O&M is a cost, not a benefit); however, there was no O&M cost assigned to the State - WSIP cannot fund O&M.

Commented [HJ3]: This was not in the application. There is the beneficiary pays text on Page 14 of the Executive Summary and Page 6 of the Cost Allocation section. WSIP did not include any funding mechanism for O&M costs.

Commented [HJ7]: This was not in the application. The application showed deliveries to point-of-use. This was an application requirement.

	<p>moving the water to the desired location.</p> <ul style="list-style-type: none"> The State of California will work through the California Water Commission and the Resources Agency to manage the water held in the Sites storage allocation space obtained by the Water Commission for environmental purposes. 	<p>place to move and/or exchange the water to the point of benefit realization.</p> <ul style="list-style-type: none"> The Authority would be responsible for the carriage losses and wheeling costs to deliver the water to the point of benefit realization. WSIP water would need to be delivered to the benefit location at the cost of the Authority. The Authority would need to have all agreements and contracts in place to move and/or exchange the water to the point of benefit realization. The Authority would be responsible for the carriage losses and wheeling costs to deliver the water to the point of benefit realization. CDFW recommends discussion of ownership and management with CWC as only they can address that.
	<ul style="list-style-type: none"> Losses of water held in Sites Reservoir will be allocated to each Sites Storage Partner based proportionally on the amount of their water in storage that day Assumes a separate storage account is used to cover O&M for environmental water 	<ul style="list-style-type: none"> Unclear as to how this is addressed. Need to discuss with CDFW and CWC. Unclear as to how this is addressed. Need to discuss with CDFW and CWC.
Benefit Monitoring and Reporting	<ul style="list-style-type: none"> Would monitor the amount of water released, nutrients, and phytoplankton/zooplankton. Would rely on existing Delta smelt monitoring programs to track smelt benefits. The primary objectives and triggers would be the phytoplankton/zooplankton populations and the Delta smelt population response. Results in August through October time period should be highly reproducible. Adaptive measures would include changes in the timing of releases, the duration and magnitude of the pulse, and the magnitude of the pulse (in cfs). Monitor water released for refuges and deliveries to refuges. 	<ul style="list-style-type: none"> Need to provide monitoring metric(s) Need to track and monitor each benefit and its short- and long-term response. Each benefit should be followed through the system, from release at Sites to realization at benefit source(s).
Ecosystem Improvement—Refuge Water Supply	<p>Sites would provide a long-term average of 35 thousand acre-feet (TAF) of additional Level 4 water to the Sacramento National Wildlife Refuge Complex and an average increase in</p>	<p>Refuge Water Supply</p> <p>Overall Goal: To provide Incremental Level 4 (IL4) refuge water to CVPIA refuges or water to other State or private wildlife refuges.</p>

Commented [HJ8]: None of these costs were included in the WSIP award. They are excluded under WSIP and WSIP is silent regarding how they are to be handled. They were allocated to the Authority in the Cost Allocation section of the application; however, there was text on the need to fund O&M on page 6 of the Allocation section.

Commented [HJ9]: I disagree with the word all; however, the Authority will need agreements in place with Reclamation and the SWP to achieve the public benefits.

Commented [HJ10]: The WSIP application was based on deliveries to point of use and accounted for carriage losses.

Commented [HJ11]: This was not in the application.

Commented [HJ12]: This row is for smelt only. You will need to track deliveries to refuges. Recommend simplifying the text as indicated.

<p>Level 4 deliveries to Mendota Pool and Tulare Basin of 28 TAF and 6 TAF, respectively.</p> <p>Sites would provide a long-term average of 35 thousand acre-feet (TAF) of additional Level 4 water to the Sacramento National Wildlife Refuge Complex and an average increase in Level 4 deliveries to Mendota Pool and Tulare Basin of 28 TAF and 6 TAF, respectively.</p>	<p>The options identified below were provided by the CDFW in and October 2020 meeting with Authority staff.</p> <p>A. South-of-Delta (SOD) refuge water</p> <ul style="list-style-type: none"> • Provide long-term average and monthly range of volume of water to be provided by water year type at point of delivery (San Luis Reservoir or refuge boundary). • Agreement with Bureau of Reclamation on participation in the CVPIA Refuge Water Supply Program. • Modeling that demonstrates ability to convey water to SOD. Modeling should consider capacity in CA Aqueduct and Delta export facilities. If water is conveyed under Bureau of Reclamation's water right, priority for IL4 at CVP export facility must be considered. If San Luis Reservoir is the point of delivery, reservoir capacity to store water until it is delivered to refuges must be considered. • Agreements to exchange reservoir water for CVP or SWP contractor water in order to deliver water SOD.
<p>Same as response to "A" above.</p>	<p>B. North-of-Delta (NOD) refuge water (in addition to considerations above)</p> <ul style="list-style-type: none"> • Identify NOD refuges that need IL4 refuge water and could potentially receive refuge water directly from Sites (e.g., Delevan wildlife refuge). • Demonstrate that Sites can convey water to private and state NOD wildlife refuges, particularly those refuges on the east side of the valley, where the need for water is the greatest. • Obtain exchange and conveyance agreements with local water districts to provide water. • Obtain an exchange agreement with a SWP contractor to exchange water out of Oroville Reservoir and obtain approval from DWR for the exchange.
<p>The Yolo Bypass is the only place in the Delta estuary downstream of the</p>	<p>Yolo Bypass Pulse Flow</p>

Commented [HE13]: Not sure we want to state this specifically because we were not funded for the full benefit. Or we can put that caveat in - "If all benefits are funded, Sites would provide a long-term average."

Commented [HJ14]: Need to confirm with Rob Leaf. I believe there is more water in the north now - maybe to Sutter.

Commented [HJ15]: I think this is in your best interest. If you can get the water into the refuge program I think Reclamation can help you track deliveries - simplifies monitoring.

Ecosystem Improvement—Yolo Bypass flows	<p>Yolo Bypass has historically had the highest populations of where the Delta smelt population is increasing. The purpose of this action is to help increase desirable food sources for Delta smelt in the lower Cache Slough and lower Sacramento River areas (from WSIP Application Appendix A3).</p> <p>Yolo Bypass from Sites Reservoir of a long-term average of 40 TAF from August through October to benefit Delta smelt.</p>	<p>Overall Goal: Stimulate the growth of and/or transport phytoplankton and zooplankton from the upper Yolo Bypass region to the lower Sacramento River, to provide food to Delta Smelt.</p> <p>The options identified below were provided by the CDFW in and October 2020 meeting with Authority staff.</p>	
	<p>The Sites Reservoir Project will provide two pulses of flow of at least 400 cfs each over a 2-3 week period into the Yolo Bypass (via the Colusa basin drain past the Wallace Weir and Ridge Cut into the Tule Drain) that will flow through the Toe drain and out to the Sacramento River. Each flow pulse made into the Colusa basin Drain would total about 24 TAF over each 2-3 week period resulting in an average total flow of more than 40 TAF per year (from WSIP Application Appendix A3).</p> <p>The flow pulses would be adaptively managed but are currently thought to occur in late summer and early fall perhaps in August and September. The water deliveries would not have to occur every year but in most years would be desirable (from WSIP Application Appendix A3).</p>	<p>A. Direct delivery of water from Sites Reservoir to the Yolo Bypass via Sites' Dunnigan pipeline into the Colusa Basin Drain.</p> <ul style="list-style-type: none"> • Provide long-term average and monthly (July through September) range of volume of water to be delivered by water year type. • Obtain agreements to utilize conveyance facilities needed to move water through the Colusa Basin Drain and Yolo Bypass, during the late summer-fall period. • Modeling that demonstrates volume of water to be conveyed through the Colusa Basin Drain and Yolo Bypass, during July – September, and considers capacity of conveyance facilities during those months. • Evaluation of potential negative impacts from the pulsed water, including but not limited to increased straying of salmonids, reduced water quality, and temperature impacts. • Demonstrate ability to provide net ecosystem benefit, considering mitigation and avoidance requirements for all impacts. 	<p>Commented [HJ16]: Is this still true? I thought the latest survey did not find any. Also, they are not in the Bypass. They are immediately downstream of the Bypass.</p> <p>Commented [HJ17]: ICF should work on this text to make sure it is consistent with recent findings.</p> <p>Commented [HE18]: Same comment as above. Not fully funded, so only need benefits equating to \$816M less early funding, recreation, and flood control. Same comment on providing quantities for the remainder of the document.</p>
	<p>Same as response to "A" above.</p> <p>Deliveries to Yolo Bypass from Sites Reservoir of a long-term average of 40 TAF from August through October to benefit Delta smelt.</p>	<p>B. Delivery of water to the Sacramento River via exchanges (in addition to considerations above).</p> <ul style="list-style-type: none"> • Demonstrate ability to obtain exchange agreements and deliver water through the Sacramento River and through the Yolo Bypass. • Assess and demonstrate the ability to move water into and through the Yolo Bypass. This includes any necessary agreements and considerations of pump capacity and priority of use. 	<p>Commented [HJ19]: Consistent with the application, but do you want to commit to this before updating the economics and looking at modeling results?</p>

		<ul style="list-style-type: none"> Modeling that demonstrates volume and timing of water conveyed through the Yolo Bypass. Assess potential impacts to redd dewatering in the Sacramento River.
Ecosystem Improvement—Yolo Bypass flows	The Yolo Bypass is the only place in the Delta estuary where the Delta smelt population is increasing. The purpose of this action is to help increase desirable food sources for Delta smelt in the lower Cache Slough and lower Sacramento River areas (from WSIP Application Appendix A3). Yolo Bypass from Sites Reservoir of a long-term average of 40 TAF from August through October to benefit Delta smelt.	<p>Delta Smelt Habitat Improvements Goal: Suisun Marsh Salinity Control Gate (SMSCG) operations for Delta Smelt habitat improvement in critically dry years.</p> <p>The options identified below were provided by the CDFW in and October 2020 meeting with Authority staff.</p>
	The Sites Reservoir Project will provide two pulses of flow of at least 400 cfs each over a 2-3 week period into the Yolo Bypass (via the Colusa basin drain past the Wallace Weir and Ridge Cut into the Tule Drain) that will flow through the Toe drain and out to the Sacramento River. Each flow pulse made into the Colusa basin Drain would total about 24 TAF over each 2-3 week period resulting in an average total flow of more than 40 TAF per year (from WSIP Application Appendix A3). The flow pulses would be adaptively managed but are currently thought to occur in late summer and early fall perhaps in August and September. The water deliveries would not have to occur every year but in most years would be desirable (from WSIP Application Appendix A3)	<p>A. Delivery of water using Sites facilities through Dunnigan pipeline to the Colusa Basin Drain and then out to the Sacramento River.</p> <ul style="list-style-type: none"> Provide long-term average and monthly (June through October) range of volume of water to be provided in critically dry years. Modeling that demonstrates the number of days that the salinity control gates can be operated based on the water to be provided. Obtain agreements with Bureau of Reclamation and DWR to operate the SMSCG in critically dry years to provide an ecosystem benefit above existing regulatory requirements. Assess potential negative impacts from the delivery of water from the Colusa Basin Drain, including but not limited to reduced water quality and temperature impacts to the Sacramento River. Demonstrate ability to provide net ecosystem benefit, considering mitigation and avoidance requirements for all impacts.
	Same as response to "A" above. Deliveries to Yolo Bypass from Sites Reservoir of a long-term average of 40 TAF from August through October to benefit Delta smelt.	<p>B. Delivery of water to the Sacramento River via exchanges (in addition to considerations above).</p> <ul style="list-style-type: none"> Obtain agreements to exchange water in order to provide the ecosystem benefit. Assess potential impacts to redd dewatering in the Sacramento River.

Commented [HJ20]: There is a lot of redundancy in this table. It is very confusing.

Commented [HJ21]: I'm assuming this is the gate at the southern end of the toe drain. If it is, I believe the Authority should try to obtain agreements as indicated.

Ecosystem Improvement—Yolo Bypass flows	<p>The Yolo Bypass is the only place in the Delta estuary where the Delta smelt population is increasing. The purpose of this action is to help increase desirable food sources for Delta smelt in the lower Cache Slough and lower Sacramento River areas (from WSIP Application Appendix A3).</p> <p>Yolo Bypass from Sites Reservoir of a long-term average of 40 TAF from August through October to benefit Delta smelt.</p>	<p>Yolo Bypass Floodplain Inundation Goal: Provide water in the spring to the lower Yolo Bypass, following floodplain inundation from a natural storm event, to extend the period of floodplain inundation, and provide rearing habitat for juvenile salmonids.</p> <p>The options identified below were provided by the CDFW in and October 2020 meeting with Authority staff.</p>
	<p>The Sites Reservoir Project will provide two pulses of flow of at least 400 cfs each over a 2-3 week period into the Yolo Bypass (via the Colusa basin drain past the Wallace Weir and Ridge Cut into the Tule Drain) that will flow through the Toe drain and out to the Sacramento River. Each flow pulse made into the Colusa basin Drain would total about 24 TAF over each 2-3 week period resulting in an average total flow of more than 40 TAF per year (from WSIP Application Appendix A3).</p> <p>The flow pulses would be adaptively managed but are currently thought to occur in late summer and early fall perhaps in August and September. The water deliveries would not have to occur every year but in most years would be desirable (from WSIP Application Appendix A3)</p>	<p>A. Direct delivery of water from Sites Reservoir to the Yolo Bypass via Sites' pipeline into the Colusa Basin Drain.</p> <ul style="list-style-type: none"> • Provide long-term average and monthly range of volume of water to be delivered by water year type. • Modeling that demonstrates volume of water to be conveyed through the Colusa Basin Drain and Yolo Bypass, during the spring, and considers potential conveyance limitations and conflict with agricultural drainage in the Yolo Bypass. • Assess the length of time that floodplain inundation can be increased. • Assess potential negative impacts from the extended floodplain inundation, including but not limited to increased straying of salmonids, reduced water quality, and temperature impacts. • Demonstrate ability to provide net ecosystem benefit, considering mitigation and avoidance requirements for all impacts.
	<p>Same as response to "A" above.</p> <p>Deliveries to Yolo Bypass from Sites Reservoir of a long-term average of 40 TAF from August through October to benefit Delta smelt.</p>	<p>B. Delivery of water to the Sacramento River via exchanges (in addition to considerations above).</p> <ul style="list-style-type: none"> • Obtain agreements to exchange water in order to provide the ecosystem benefit. • Assess and demonstrate the ability to move water into and through the Yolo Bypass. This includes any necessary agreements and considerations of pump capacity and priority of use. • Modeling that demonstrates volume and timing of water conveyed through the Yolo Bypass.

Commented [HJ22]: Is this really true? Redundant with information provided above.

Commented [HJ23]: This benefit was not proposed or funded by WSIP. There was no benefit for salmonids in the Yolo Bypass. Benefits were restricted to smelt.

		<ul style="list-style-type: none"> Assess potential impacts to redd de-watering in the Sacramento River.
Recreation:	Recreation benefits were valued using visitation estimates for the new recreational areas planned for the Sites Project. Annual visitation was estimated using a facilities-based approach that accounts for Sites planned facilities, carrying capacity, the regional population of potential users, surface acreage of the reservoir and fluctuations in storage throughout the year, as well as the amenities and visitation levels of substitute reservoirs in the region (Table A3-16 in WSIP Application)	No discussions as of yet.
Flood Control	Development of the Sites project would reduce the magnitude of flood events in the area along Funks Creek and Stone Corral Creek, specifically for the Town of Maxwell's residential, commercial and public structures and contents. In addition, the project would reduce flood damages to adjacent agricultural lands and flood-related closures to Interstate 5 (I-5) and Highway 20 (Hwy 20).	No discussions as of yet.

Commented [HE24]: Not sure we need to include this and flood control in this document since (I don't think) we will be discussing this with CDFW. Or, could write in the right-hand column that these items will be negotiated with DWR.

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/12/2020 11:58:29 AM
To: Kearns, Zachary@Wildlife [Zachary.Kearns@Wildlife.ca.gov]; Wilson, Billie@Wildlife [Billie.Wilson@wildlife.ca.gov]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]
Subject: Discuss 5937 for Funks and Stone Corral Creeks.
Attachments: 08_CDFW_DEIR_Comments_011218.pdf

Good Morning,

As the Sites design team continue to advance their work products, I would like to get together and discuss the Department's 2017 EIR comment regarding compliance with 5937 of the Fish and Game Code, review some research the ICF team has put together on the creeks and develop an approach to address the concerns raised in the comment. Please use the link below to provide your availability for a meeting to discuss this.

<https://doodle.com/poll/6t6it2n7e2tawpw6>

CDFW Comment: During operation of the Project, the DEIR/DEIS states that releases from Sites and Golden Gate dams would maintain flows of up to 10 cfs from October through May in Stone Corral and Funks creeks, respectively. The DEIR/DEIS anticipates these flows would be maintained close to natural levels, and therefore, the operational impacts to fish and aquatic habitats and fish passage in Funks and Stone Corral creeks below Sites and Golden Gate dams would be less than significant. This contradicts statements made in the DEIR/DEIS Chapter 6 section 6.2.6.1 and 6.2.6.2 that peak winter flows of approximately 2,000 cfs are common in Funks Creek and Stone Corral Creek may provide flows ranging from 600 to 2,000 cfs in December through April during wet water years. Therefore, maintaining flows of up to 10 cfs from October through May will not sufficiently mimic the variability of the hydrograph for Stone Corral and Funks creeks and will not provide the same amount of aquatic habitat or adequate protection for fish passage. In addition, these creeks are impacted by water diversions within their watersheds and the habitat being described as ephemeral may be due to anthropogenic degradation where natural flows would be more perennial in nature. To the extent the Project could exacerbate already degraded conditions in those creeks, the DEIR/DEIS should consider the potential impact to the hydrological regime of these streams. In order to maintain fish in good condition as required by Fish and Game Code section 5937, base flows outside of the "October through May" period below reservoirs may need to have a perennial regime to support fisheries downstream

Thanks.

John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
hdrinc.com/follow-us

From: Rob Thomson
To: [Oliver, Mark/RDD](#); [Black, Lyna/RDD](#)
Cc: [Anne Hoagland](#)
Subject: FW: Sites Project Letter [EXTERNAL]
Date: Friday, January 12, 2018 1:22:53 PM
Attachments: [image001.jpg](#)
[image002.png](#)
[Sites Project Letter.pdf](#)

Comments

From: Cashdollar, Shaundra@Wildlife [mailto:Shaundra.Cashdollar@wildlife.ca.gov]
Sent: Friday, January 12, 2018 1:06 PM
To: Rob Thomson <rthomson@sitesproject.org>; Jim Watson <jwatson@sitesproject.org>; Sites Project <info@sitesproject.org>
Cc: Drongesen, Jeff@Wildlife <Jeff.Drongesen@wildlife.ca.gov>; Nguyen, Jennifer@Wildlife <Jennifer.Nguyen@wildlife.ca.gov>; Dibble, Chad@Wildlife <Chad.Dibble@wildlife.ca.gov>; Kelley, Garry@Wildlife <Garry.Kelley@wildlife.ca.gov>; Roberts, Jason@Wildlife <Jason.Roberts@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Little, Shannon@Wildlife <Shannon.Little@wildlife.ca.gov>; Stoner, Kyle@Wildlife <Kyle.Stoner@wildlife.ca.gov>
Subject: Sites Project Letter

All,
Please open the above attachment to view the subject mentioned letter.
Sincerely,

Shaundra Cashdollar
Department of Fish and Wildlife
North Central Region/Region 2
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
(916) 358-2930
Shaundra.Cashdollar@Wildlife.ca.gov

Every Californian should conserve water. Find out how at:

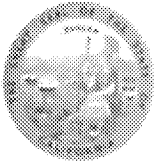


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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670-4599
916-358-2900
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



January 12, 2018

Rob Thomson
Sites Project Authority
P.O. Box 517
Maxwell, CA 95955

Subject: SITES PROJECT
DRAFT JOINT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL
IMPACT STATEMENT (DRAFT EIR/EIS) SCH# 2001112009

Dear Mr. Thomson:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Availability of a Draft EIR/EIS (DEIR/DEIS) from The Sites Project Authority (Authority) for the Sites Project (Project) pursuant the California Environmental Quality Act (CEQA) statute and guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project for which CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code. The Department appreciates that with most large projects there may be a continuing effort to analyze impacts and revise the various project alternatives. The Department remains available for coordination for those purposes.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Fish & G. Code, § 1802.) Similarly, for purposes of CEQA, CDFW is charged to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required. CDFW also administers the Native Plant Protection Act, Natural Community Conservation Planning Act, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.

PROJECT DESCRIPTION SUMMARY

The proposed Project facilities would primarily be located in Glenn and Colusa counties, approximately 10 miles west of the town of Maxwell. The Project would include a new off stream surface storage reservoir (Sites Reservoir) with two main dams, up to nine saddle dams, and up to five recreation areas. The Sites Reservoir would be filled through the diversion of Sacramento River flows via two existing diversions/canals (all alternatives) and a proposed new inlet diversion/outlet structure and pipeline (majority of alternatives). The proposed pipeline would allow for Sacramento River diversions for most alternatives, and discharge of water under all alternatives. Water conveyance between the reservoir and the canals and pipeline would be facilitated by two new regulating reservoirs. Pumping/ electrical generating facilities would also be included as part of most alternatives. A new overhead power line would connect the pumping/generating plants and their associated electrical switchyards to an existing overhead power line in the Project area. New roads and a bridge across the proposed Sites Reservoir would be constructed to provide access to the proposed Project facilities and over the proposed reservoir, and some existing roads would be relocated or improved. The Project would require modifications to one of the existing canals and pumping plants.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the Authority, as lead agency, in adequately identifying and, where appropriate, mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

In general, CDFW has identified several areas where additional, clarified, or modified analysis is necessary to allow for a complete analysis and disclosure of the potential impacts of the Project, and where the DEIR/DEIS requires improved, enforceable mitigation measures. The document's disclosure and analysis of impacts to aquatic species is of particular concern to the Department, including an insufficient analysis of the impacts of increased diversions that would occur during Chinook salmon (*Oncorhynchus tshawytscha*) migration periods, smelt analyses that do not appear to reflect proposed Project operations and potential reductions in Delta outflow, and a lack of analysis of potential entrainment and impingement of green sturgeon (*Acipenser medirostris*) and white sturgeon (*Acipenser transmontanus*) at Project intake facilities. CDFW also has concerns about the Project's potential impacts to floodplain habitat downstream of individual diversion facilities and downstream in the Delta. CDFW does not consider proposed bypass flows identified in the DEIR/DEIS to sufficiently minimize or offset these impacts.

Project Description

The project description within an EIR must supply sufficient detail to allow for the evaluation and review of the potential environmental impacts and must address the "whole of the action" with potential to result in direct physical changes to the environment or reasonably foreseeable indirect physical changes in the environment. (CEQA Guidelines, §§ 15124 & 15378.) The following comments highlight areas where further detail is necessary to allow for such evaluation.

The proposed inlet/outlet structure for Sites Reservoir would consist of a low-level inlet/outlet structure for emergency drawdown releases, a multi-level inlet/outlet structure tower, two fixed wheel gates to isolate the tunnel, a tower access bridge, and various valves and operators to regulate flows into and out of the reservoir. The DEIR/DEIS assumes that the reservoir outlet structures would allow withdrawal of water from the reservoir over a range of depths to manage release temperatures to match Sacramento River temperatures to the extent possible. However, more information is necessary regarding how the proposed Project operations will impact reservoir water surface elevations and volumetric estimates of cold water pool storage. Without this information, it is not possible to understand how those storage levels interact with the water release locations of the proposed outlet structure tower. CDFW also recommends the inclusion of data that summarize how much water can be released at each port and/or level along the structure tower. Collectively, this information is vital to understanding how or if reservoir release temperatures could be managed to match Sacramento River water temperatures and if the proposed outlet structure is appropriately designed to accomplish this task. To inform the analysis of impacts to aquatic biological resources, the Project Description should include a thorough qualitative discussion of when and from what sources the Project generally acquires (diverts) water throughout the year. This should include a discussion of Sacramento River diversions, capture of flows in the Funks and Stone Corral watersheds, and agricultural return flows otherwise flowing to the Colusa Basin drain.

Hydropower Generation and Transmission

The DEIR/DEIS lists "flexible hydropower generation to support the integration of renewable energy sources" as a secondary objective for the Project and includes hydropower generation in three of the five alternatives for the Project. Specifically, Alternatives A, B, and C all include new hydropower facilities with related overhead power line facilities. Alternative D *could* include new hydropower facilities with related overhead power line facilities; however, these facilities may not be included in the final implementation of Alternative D. Alternative C₁ is identical to Alternative C with respect to facilities and operational assumptions, but assumes no hydropower generation or delayed construction of hydropower facilities to account for potential future power market conditions and anticipated permitting processes. CDFW believes it is reasonably likely that the Authority would install hydropower facilities with related overhead power lines at the Project. As the appropriate State fish and wildlife agency for resource consultation and Federal Power Act Section 10(j) (16 U.S.C. section 803 (j)) purposes, CDFW strongly recommends the DEIR/DEIS describe the potential hydropower facilities in detail to ensure adequate analysis of the impacts of the Projects related to hydropower generation and associated facilities. Additionally, if the Authority intends to pursue hydropower facilities,

CDFW recommends the Authority initiate the process to obtain an original license from the Federal Energy Regulatory Commission (FERC) to construct, operate, and maintain a hydroelectric project.

Chapter 3 of the DEIR/DEIS describes the Sites Pumping/Generating Plant that would pump water from the proposed Holthouse Reservoir into the proposed Sites Reservoir and generate electricity during the release of water from Sites Reservoir to Holthouse Reservoir. CDFW is concerned about the potential entrainment of reservoir fish between the two reservoirs during the pumping and release of water. Although the proposed pumps are “fish-friendly” Francis turbines, these pumps do not guarantee survival of all fish that travel through the pumps. Additionally, fish that do survive the turbines may become injured, disoriented, or stressed when they emerge from the turbines and exhibit irregular behavior and be more susceptible to predation or further injury. Chapter 12 of the DEIR/DEIS states that an impact analysis for reservoir fisheries was not completed since no reservoir fishery exists under the Existing Conditions/No Project/No Action Condition. However, the Project proposes to develop and fill the reservoir and develop recreational fishing opportunities, and its diversions from the Sacramento River may result in fish being located in the reservoir. Operation of pumps for hydropower is a part of Project operations and thus the environmental document for the Project must disclose and analyze impacts from those activities. CDFW recommends the Authority include an impact analysis of pump operations in relation to potential entrainment of reservoir fish and consider screening as a mitigation measure to avoid the entrainment and transfer of fish between the two reservoirs during hydropower generation.

Existing Conditions and Project Alternatives

The environmental setting – a description of the physical environmental conditions existing in the vicinity of the Project at the time the notice of preparation is published – will normally constitute the baseline by which a lead agency considers the significance of an environmental impact. (CEQA Guidelines, § 15125, subd. (a).) The existing conditions baseline is the norm from which a deviation should be justified, and caselaw recognizes that complicated modeling introduces inherent uncertainty and makes an analysis less accessible to decision makers and the public. (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal. 4th 439, 454-456.) CDFW recognizes that a lead agency must decide how to most realistically measure existing conditions. However, a hypothetical “maximum permitted operational levels” baseline may be misleading as a basis for comparison, where it is not a realistic assumption. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010), 48 Cal. 4th 310, 322.)

CDFW is concerned that the analytical approach in the DEIR/DEIS, which relies heavily on 2030 projected conditions, does not present the most realistic measurement of existing conditions and could have misleading or confusing results. The same baseline is not used across all models and analyses, which compounds the potential problems.

The DEIR/DEIS assumes Existing Conditions and the No Project/No Action Alternatives to be the same and, refers to them collectively as the “Existing Conditions/No Project/No Action Condition” throughout the document and does not distinguish between them for the

impact analyses. Consequently, the impact analyses compare all Project alternatives to projected future water demands through 2030. These projections also assume Central Valley Project (CVP) and State Water Project (SWP) contractors would use their total contract amounts and that senior water rights users would fully use their water rights – an assumption that does not reflect current conditions.

CDFW is concerned that an environmental baseline that relies on future water demands may obscure the severity of the Project's water operations impacts when compared to actual existing conditions. In addition, the DEIR/DEIS discloses that the CALSIM II, Delta Simulation Model (DSM2), and American River diversion assumptions vary between the Existing Conditions Assumption and the No Action Alternative Assumption. These shifting assumptions prevent a comprehensive and stable understanding of potential Project impacts. CDFW recommends that the DEIR/DEIS provide separate and independent impact analyses of the Existing Conditions and the No Project/No Action Alternatives, and that the Existing Conditions should constitute existing water rights and contract amounts along with existing hydrologic conditions at the time of the release of the Notice of Preparation (NOP) in March 2017. For example, the Project's environmental baseline is more clearly defined in the 2009 National Marine Fisheries Service *Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and the State Water Project*.

As a means of reducing significant environmental impacts of a project, CEQA requires that an EIR must contain feasible mitigation measures as well as feasible project alternatives that could avoid or substantially lessen the project's significant environmental effects. (Pub. Res. Code, § 21002, 21100(b)(4).) As described by the CEQA Guidelines, an EIR must describe "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (Cal.Code Regs., tit. 14, § 15126.6(a).)

The DEIR/DEIS includes Project features and alternatives that maximize the Project's objectives; however, the DEIR/DEIS does not include potentially feasible alternatives that would avoid or substantially lessen the Project's significant environmental impacts. CDFW continues to recommend that the DEIR/DEIS should include a more robust range of operational alternatives, as discussed in its comments to the NOP, provided on March 21, 2017. Of the five alternatives in the DEIR/DEIS, many of them are similar with respect to water operations (e.g. diversions, bypass criteria, deliveries are the same across alternatives.) CDFW recommends that alternatives should be split into two or more alternatives that encompass the entire range of possible water operations scenarios, including an alternative that minimizes operational impacts through more restrictive bypass flows and diversion criteria.

In addition, to the extent there are distinctions among the five alternatives, the document uses a comparative approach that makes it difficult for the reader to understand in absolute terms the impacts of the Project. For example, the document frequently discusses the similarities between Alternatives C₁ and C, and Alternatives C and D, and often considers them to be the same for the impact analyses. CDFW recommends that a complete assessment of the Project's potential impacts be provided to better understand

the ability of Project alternatives to avoid or substantially lessen the Project's potential significant environmental impacts.

Impacts Analysis

Surface Water Resources

The DEIR/DEIS characterizes Project impacts to surface water resources broadly as increased, reduced, or similar when compared to the Existing Conditions/No Project/No Action Condition in Chapter 6. The Project proposes modifications to CVP/SWP operations throughout the Sacramento River watershed and Sacramento-San Joaquin Delta. Generalizations in the analyses make it difficult to understand how the Project will impact surface water resource management, such as cold water storage and the quantities of water that may be released out of reservoir outlets, and the consequent impacts to biological resources. The generalities result because water quantities and Project-generated changes are not disclosed for Existing Conditions, the Action Alternatives and the No Project/No Action Condition for any of the reservoirs, tributaries, or the Delta in the secondary or extended study areas. (See DEIR/DEIS, section 6.3.3.2.) These values are summarized only for CVP and SWP deliveries, Sites Reservoir storage, and inflows at the Delevan pipeline. (See DEIR/DEIS, sections 6.3.3.1 and 6.3.3.3). To enable meaningful review of the Project's impacts to reservoir and tributary management, CDFW recommends that the DEIR/DEIS disclose and analyze water quantity values and the corresponding Project-generated changes for all reservoirs and tributaries in the primary, secondary, and extended study areas under the Existing Conditions, all Action Alternatives, and the No Project/No Action Condition in Chapter 6. CDFW recommends a reporting structure similar to that of Table 6-8, with a caveat that the Existing Conditions and the No Project/No Action Condition should be separated and analyzed independently, as suggested previously. These data summaries will allow the reader to compare Project impacts to surface water resources between the Existing Conditions, all Action Alternatives, and the No Project/No Action Condition.

The DEIR/DEIS surface water resources analysis shows potentially significant impacts to aquatic biological resources because of flow reductions when fish species are present. Specifically, in Dry and Critical water years, flows in the Sacramento River would decrease as a result of the Project in Alternatives A, B, C, and D as compared to the Existing Conditions/No Project/No Action Condition. These decreases would occur: (1) from March through June and in October downstream of Keswick Reservoir; (2) from February through June downstream of the Tehama-Colusa Canal Authority (TCCA) Intake near Red Bluff; (3) from February through April (and March through May in other water years) downstream of Glenn-Colusa Irrigation District (GCID) Main Canal Intake near Hamilton City; and (4) from January through March downstream of Delevan Pipeline Intake/Discharge Facilities. Flows during the springtime (March – May) are critical for juvenile salmonid emigration in the Sacramento River, and especially so in dry and critical years when flows are already low. Decreased flows during this time period as proposed in the Project alternatives will lead to decreased juvenile salmonid survival. In addition, the Project proposes that in all water year types, reservoir releases would generally increase flows in July (and in some reaches June through November) when fish species of concern are least likely to be utilizing that habitat and flows are opposite of the natural hydrology. CDFW recommends

evaluation and analysis of an alternative under which operations provide for flows to increase in the Sacramento River in the winter and spring when juvenile salmonids are present.

The DEIR/DEIS states that modeling for the Project's alternatives restricted diversions to limit impacts on out-migrating juvenile fish as a "surrogate" for likely permit conditions. The DEIR/DEIS identifies this diversion limitation as Mitigation Measure Fish 1f in Chapter 12. However, the DEIR/DEIS never evaluates the Project's potential impacts, in comparison to the DEIR/DEIS significance thresholds, without this mitigation measure in place. Further, as discussed in more detail below, CDFW does not consider the short-term and limited pulse flow protections to adequately reduce impacts to migrating juvenile fish.

Surface Water Quality

Similar to surface water resources, it is difficult to understand how the Project will impact surface water quality because the values and corresponding Project-related changes are rarely reported under the Action Alternatives, the Existing Conditions, and the No Project/No Action Condition for reservoirs, tributaries, or the Delta in the primary, secondary and extended study areas in Chapter 7. CDFW recommends that the DEIR/DEIS disclose and analyze water quality values and the corresponding Project-generated changes for all reservoirs and tributaries in the primary, secondary, and extended study areas under the Existing Conditions, the Action Alternatives, and the No Project/No Action Condition in Chapter 7. The reporting structure for each constituent should include a summary by location, water year, and month for the Existing Conditions and corresponding changes to the No Project/No Action Condition and all Action Alternatives.

Water quality analyses depend on models that rely on CALSIM II, for which the output is on a monthly time step. However, daily and weekly changes to water quality can often have lethal or sub lethal effects on aquatic resources, which a monthly time step cannot capture. For full disclosure and analysis of potentially significant impacts, CDFW recommends that the analyses include a daily time series analysis.

Model limitations may also obscure the severity of the Project's temperature impacts to the Sacramento River. The Sites Reservoir discharge temperature model assumes Sites Reservoir is a vertically segmented reservoir with respect to temperature and derives Sites Reservoir inflow temperatures from three intakes; the TCCA Intake, the GCID Intake, and the Delevan Pipeline Intake. The model excludes potential changes in water temperatures within the Delevan Pipeline between Sites Reservoir and the Sacramento river because the DEIR/DEIS assumes significant warming will not occur within the buried Delevan Pipeline. The model also fails to take agricultural runoff into consideration, which may increase the solar radiation potential of the discharged water (Turek 1990). This has the potential to impact water quality in the reservoir and the associated discharge into the Sacramento River (i.e. increased turbidity and water temperatures).

Because of the considerable distance from the intakes to Sites Reservoir, CDFW recommends that the model incorporates water residence times and seasonal ambient warming from the intakes to Sites Reservoir to calculate the Sites Reservoir inflow

temperatures. CDFW also recommends water temperatures between the Sites Reservoir outlet and the Sacramento river be included in the model and that the model account for possible thermal effects from power generation at three facilities, pump-back operations, and varying residence times within the Holthouse Reservoir Complex, the Terminal Regulating Reservoir, and over the 13.5 mile pipeline. The refined model should be used for an impact analysis that evaluates all Action Alternatives, not just Alternatives C and D, regardless of their perceived similarities or differences.

The underlying assumption that the Sites Reservoir will become stratified because of warming within the upper layer of the reservoir in the summer months, similar to other large reservoirs in the California Central Valley, warrants additional analysis. Most large reservoirs in the Central Valley receive runoff from snowpack, which is largely absent in the Funks and Stone Corral watersheds. In addition, the proposed Sites Reservoir will be located in a shallow canyon, which will create a wide reservoir with a large surface area making it more vulnerable to mixing from high winds. CDFW recommends further analysis on the stratification potential for Sites Reservoir. Seasonal temperature profiles from nearby reservoirs that lack significant snowpack may be useful for this analysis. In addition, the analysis should consider the effects of highly regulated pumping-generating plants on the development of a thermocline, as discussed under the Project Description subheading, above.

Aquatic Biological Resources

Flow

CDFW considers bypass flow and other fish protection criteria identified in the Project alternatives to be insufficient to reduce potentially significant impacts to less-than-significant levels. At the diversions from the Sacramento river, the DEIR/DEIS proposes bypass flow criteria of 3,250 cfs (Red Bluff), 4,000 cfs (Hamilton City), and 5,000 cfs (Wilkins Slough). Population trends of native anadromous and pelagic fish are steadily declining under existing regulatory conditions and the additional extraction of water at the proposed bypass flow rates would exacerbate the problem. Reduced flow affects habitat use, as indicated by salmon models used in the DEIR/DEIS, but the timing and quantity of flow also influences migration events, predator evasion, and ultimately survival (del Rosario et al. 2013; Michel et al. 2013; Perry et al. 2015; Perry et al. 2016; Johnson et al. 2017). When velocities along migratory corridors are reduced, juvenile outmigration takes longer and smolts face increased predation risk (Anderson et al. 2005; Muthukumarana et al. 2008; Cavallo et al. 2013). The effects of flow on survival from travel time and predation risk are not incorporated into the salmon models used for the DEIR/DEIS and the DEIR/DEIS analysis should disclose and address these effects.

Based on a preliminary review of existing juvenile Chinook survival studies, the correlation between increased juvenile survival and flows at Bend Bridge begins to decline at around 13,000 cfs (Michel et al. 2015, Michel 2016). As a mitigation measure for the Project's potentially significant impacts to fish migration, the DEIR/DEIS identifies short-duration pulse flow protections, limited to only one per month regardless of natural conditions. In light of the best available science regarding juvenile survival and flows, the proposed bypass flows for a short duration pulse flow, representing the sole mitigation measure for

this significant impact, is not adequate to mitigate for the substantial loss of emigrating fish during non-pulse flow periods.² CDFW recommends the Project proponents revise the bypass flow requirement to maintain at least 13,000 cfs past all diversion facilities prior to the diversion of water to reduce impacts on out-migrating juvenile salmonids.

Furthermore, the Project does not include any protective bypass flow rates for Delta outflow, but as discussed in additional comments below, the Project is likely to affect Delta outflow significantly, with resulting impacts to aquatic biological resources. The DEIR/DEIS should propose Delta outflow requirements, in addition to bypass flow requirements, to adequately minimize the Project's impacts to downstream fisheries prior to diverting water from the Sacramento river.

The DEIR/DEIS identifies the elimination of fish passage at the Sites Reservoir dams as a less than significant impact because the extent to which fish species may move through this area is unknown and movement of these species is not considered an essential behavioral component of their life cycles. Yet, endemic species often reproduce in habitat dissimilar to rearing habitat (e.g. Sacramento splittail (*Pogonichthys macrolepidotus*)) and demonstrate the ability to move throughout an aquatic environment to access a variety of habitats. CDFW recommends a thorough review of existing scientific literature and studies related to the presence and life-history characteristics of endemic species in streams that would be blocked by the Sites Reservoir dams and/or nearby streams having similar attributes. Aquatic biological studies may also need to be performed to better understand which species are present and possibly impacted by the Project.

During operation of the Project, the DEIR/DEIS states that releases from Sites and Golden Gate dams would maintain flows of up to 10 cfs from October through May in Stone Corral and Funks creeks, respectively. The DEIR/DEIS anticipates these flows would be maintained close to natural levels, and therefore, the operational impacts to fish and aquatic habitats and fish passage in Funks and Stone Corral creeks below Sites and Golden Gate dams would be less than significant. This contradicts statements made in the DEIR/DEIS Chapter 6 section 6.2.6.1 and 6.2.6.2 that peak winter flows of approximately 2,000 cfs are common in Funks Creek and Stone Corral Creek may provide flows ranging from 600 to 2,000 cfs in December through April during wet water years. Therefore, maintaining flows of up to 10 cfs from October through May will not sufficiently mimic the variability of the hydrograph for Stone Corral and Funks creeks and will not provide the same amount of aquatic habitat or adequate protection for fish passage. In addition, these creeks are impacted by water diversions within their watersheds and the habitat being described as ephemeral may be due to anthropogenic degradation where natural flows would be more perennial in nature. To the extent the Project could exacerbate already degraded conditions in those creeks, the DEIR/DEIS should consider the potential impact to the hydrological regime of these streams. In order to maintain fish in good condition as

² Juvenile monitoring data suggests that increases in emigration towards the Delta occur at every pulse in river flow, even where the 3-day average flows are less than 15,000 cfs, and regardless if a pulse has previously occurred in the calendar month. These lower peak flow events typically occur in the October and November months when winter-run are present in the system and identified at current rotary screw trap monitoring locations. Additionally, during pulse events with 3-day average flows near 25,000 cfs, any further flow increases produced by storm events have also resulted in increased rotary screw trap catch, contradicting the DEIR/EIS's claim of decreased migration rates at flows above 25,000 cfs.

required by Fish and Game Code section 5937, base flows outside of the “October through May” period below reservoirs may need to have a perennial regime to support fisheries downstream.

Through its coordination with CVP facilities, the DEIR/DEIS identifies potential impacts of the Project to Central Valley steelhead (*Oncorhynchus mykiss irideus*) in the American river, but the impacts are generalized as less than significant under all of the Action Alternatives. However, lower flows and higher probabilities of temperature exceedances would occur in the summer months under all of the Action Alternatives. Water temperature is a major stressor to juvenile steelhead over the summer months in the American river. The 2009 National Marine Fisheries Service *Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and the State Water Project* identifies flow and temperature criteria applicable to the U.S. Bureau of Reclamation's operations of Folsom Dam. CDFW recommends the Project's proposed operations avoid lower flows and higher probabilities of temperature exceedances in the American river, particularly over the summer, or that the DEIR/EIS identifies this impact as significant and subsequently identifies mitigation measures.

Delta Outflow

The DEIR/DEIS analysis of winter-spring outflow effects on longfin smelt (*Spirinchus thaleichthys*) does not reflect the basic construct of Project operations. The Project description states that diversions are proposed to occur at any time in the year, so long as bypass flows at upstream diversion locations are met. Additionally, Chapter 3.3.1.3 and page 10 of the Executive Summary identify the Projects ability to capture up to 1.8 Million Acre Feet (MAF) of the identified 3 MAF of water produced by unregulated Sacramento River tributaries (i.e. unregulated surface flow during the December – June time period). This capture of flows, in the higher-flow winter and spring months, would significantly reduce Delta outflow. Longfin smelt abundance correlates to Delta outflows in January through June. Yet, the DEIR/DEIS modeled proportional changes to longfin smelt populations of less than 0.1% between all alternatives and all water year types. This implies the Project would have virtually no effect on winter-spring outflow across all water year types, a conclusion that is not consistent with the proposed operations and assumed diversions. CDFW recommends the DEIR/DEIS be revised to contain a more thorough analysis of the proposed outflow impacts to longfin smelt.

The fall abiotic habitat analysis for Delta smelt demonstrates additional inconsistencies between operational assumptions and abilities and the resulting analysis. The DEIR/DEIS concludes it would provide average improvements to X2 through the fall for all water year types. The implication is that Project operations are improving fall conditions enough to change the average position of X2 by half a kilometer or more for the entire September – December period. A change in fall habitat of this magnitude would require a considerable amount of water, likely more than could be released through Project facilities. The ability of the Project to acquire such a large quantity of water for the benefit of fall abiotic habitat is inconsistent with the conclusion that there would be virtually no change to winter-spring outflows based on the aforementioned longfin smelt analysis.

CDFW recommends the DEIR/DEIS explicitly analyze the direct relationship between Project diversions and Delta outflow. This analysis should be accompanied by a qualitative discussion identifying when water would generally be acquired (diverted) throughout the year.

Floodplain habitat

By diverting flows from the Sacramento River, the Project has the potential to reduce spill events at the Tisdale and Fremont Weirs, and consequent flooding of the Sutter and Yolo Bypasses. Reductions in spills could prevent fish from accessing high quality habitat, reduce the amount of time fish have access to the habitat, or reduce the extent of habitat. Therefore, a meaningful and thorough analysis of this potential impact is crucial. However, there are several limitations in the current analysis that prevented meaningful review.

The DEIR/EIS includes Yolo Bypass flow and Sutter Weir spill analyses that are based on the number of years where there is at least one spill event over the weirs into the bypasses of varying amounts (0, 2,000, 4,000, 6,000, 8,000, and 10,000 cfs) with a duration of 0-10 days, 11-20 days, 21-30 days, 31-45 days, and greater than 45 days. These analyses are limited to the months of October through April, when juvenile salmonids and spawning splittail are anticipated to be present in the bypasses. However, Chinook salmon, Sacramento splittail, and other native fish species have been observed using the bypasses during the months of May and June. It is important to note that a reduction in high flow events may delay the timing of fish entering and exiting the bypasses. Therefore, the analysis should include the months of May and June. In addition, by focusing on only whether a given year includes a spill or not, the analysis identically treats a year with one spill event versus ten. By not analyzing the total number of spill events, the analysis does not consider migration behavior of fish entering and exiting the bypasses, and the full suite of months which native fish may utilize these critical habitats. CDFW recommends the analyses be based on the total number of spill events, instead of the number of years with one event or more. Finally, the analysis should include additional inundation amounts of 20,000 and 30,000 cfs to account for the migration timing and behavior of fish entering and exiting the bypasses due to a rapid increase in the inundated area in the Yolo Bypass when flows increase up to 40,000 cfs. Evaluation of the Project's potential to reduce these high spill events would provide essential context to the analysis, given the high benefits to habitat and species from these events.

Entrainment, fish screens, and pre-screen losses

The effects of the proposed Project operations on entrainment and impingement of juvenile fish species at the Delevan Pipeline Intake/Discharge Facilities are identified as potentially significant (Impact Fish-1e). However, the DEIR/DEIS does not identify the specific species impacted. CDFW recommends providing further clarity as to which fish species and life stages are impacted so appropriate avoidance or mitigation measures can be developed. Specifically, the current proposed fish screen design criteria may not provide adequate protection for larval or juvenile fish less than 30-mm in length. For example, a study at Red Bluff Diversion Dam (Borthwick and Corwin 2001) concluded actual fish mortality due to the screens is probably less than 5%. The study did not report larval fish (<30mm) due to the mesh size of the nets used. However, larval fish were frequently

observed during the study, particularly during the spring months. This indicates that the study's conclusions on screen efficacy did not consider larval fish, despite their being present in the area. Furthermore, sturgeon spawning is expected to take place on the Sacramento River during times when water diversions at all three intakes will be increased and Sacramento River flows will be reduced from Red Bluff to Delevan Pipeline under all Action Alternatives. Newly hatched green and white sturgeon larvae are subject to impingement on screened diversions, if the diversions are located near areas where adults are spawning.

The DEIR/DEIS identified effects of Project operations on entrainment and impingement at the TCCA Intake and the GCID Intake as potentially significant for Chinook salmon and steelhead but provided no evaluation of this impact for green sturgeon, white sturgeon, hardhead (*Mylopharodon conocephalus*), river lamprey (*Lampetra ayresii*), Pacific lamprey (*Lampetra tridentata*), and Sacramento splittail, all of which may be present in the vicinity of the diversions. In addition, the DEIR/DEIS identified no mitigation for the potentially significant impact to Chinook salmon and steelhead or other species at these facilities. CDFW recommends that the DEIR/DEIS disclose effects of green sturgeon, white sturgeon, hardhead, river lamprey, and Pacific lamprey entrainment and impingement at the TCCA and GCID intakes. CDFW also recommends appropriate avoidance and/or mitigation measures be proposed for each of the species impacted.

During dry and critical water years, the DEIR/DEIS shows that the Project operations would enable increased CVP/SWP exports from south Delta pumping plants and consequently increase Old and Middle River (OMR) reverse flows during the months of August, September, November, and January under all Action Alternatives. Although the DEIR/DEIS estimated increased entrainment losses for Delta smelt, the document does not address prescreen losses. For Delta smelt, prescreen losses that occur in waterways leading to the diversion facilities appear to be where most mortality occurs (Castillo et al. 2012). The impact analysis used for longfin smelt only relies on the winter-spring outflow model (Kimmerer et al. 2008) and does not analyze effects on entrainment and pre-screen loss relative to CVP/SWP exports for all longfin smelt life stages. Potential prescreen losses for Delta smelt and longfin smelt are reasonably foreseeable indirect impacts of the Project and should be included in the smelt impact analyses. Longfin smelt analysis should address entrainment losses and include variables such as OMR reverse flows and CVP/SWP exports. CDFW also recommends using the DSM2's Particle Tracking Model (DSM2-PTM) to analyze CVP/SWP entrainment effects on larval Delta and longfin smelt, using similar assumptions described in the Effects Analysis: State Water Project Effects on Longfin Smelt, prepared by CDFW in February 2009.

Mitigation

The DEIR/DEIS identifies potentially significant stranding, impingement, and entrainment impacts at the Delevan Facilities (Impact Fish-1e) broadly for juvenile fish species of management concern, and proposes mitigation measures Fish-1f (Sites Project Diversion Restrictions) and Fish-1e (Fish Salvage and Rescue Plan) to reduce the impacts to less than significant. However, mitigation measure Fish-1f appears to have been developed to minimize impacts on Chinook salmon and steelhead and does not address green sturgeon, white sturgeon, hardhead, river lamprey, and Pacific lamprey, all of which are

fish species of management concern. In addition, many of the details of mitigation measures Fish-1f and Fish-1e are deferred to the future, without adequate performance criteria to ensure impacts are minimized. Lastly, as discussed previously in terms of habitat impacts, the pulse flow protection events that were simulated for the impact analyses are far too limited to mitigate the Project impacts on stranding, impingement and entrainment to less than significant levels.

Juvenile outmigration monitoring data on the Sacramento River shows increased movement of juvenile salmon not only during a pulse flow event, but frequently on the leeward side of the hydrograph as well. Based on the criteria used for "qualified" events, the Project would not impose the proposed restrictions during many dry water years when juvenile and larval fish are vulnerable. The DEIR/DEIS analysis shows that based on the past seven years of flow data at Bend Bridge this restriction would apply to less than 2% of all days during that time period. CDFW recommends the DEIR/DEIS include improved mitigation measures that address all of the juvenile fish species impacted and describe how the mitigation will avoid or reduce impacts to less than significant. If it is not possible to include details of the mitigation measures, the mitigation measures should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, describe under what circumstances the measure will be implemented, and explain why the measure is feasible.

Additionally, Impact Fish-1f (Modification of Pulse Flows and Entrainment during Diversions at the Delevan Facilities) was never identified or analyzed in Chapter 12, but is listed as a significant impact in Table 12-8, despite being partially discussed in Chapter 6 in relation to a modeling assumption and Mitigation Measure Fish 1-f. Thus, there is no analysis in the DEIR/DEIS to support the less-than-significant statement in Table 12-8. CDFW recommends a review and/or modification of Chapter 12 to ensure the DEIR/DEIS thoroughly and accurately discloses, analyzes, and identifies feasible mitigation measures for all potential impacts of the Project.

Fluvial Geomorphology

The analysis to support the conclusion that there are no potentially significant impacts to fluvial geomorphology appears to be incomplete. A number of key areas were summarily eliminated from analysis without sufficient justification. Detected impacts in other areas appeared to be designated as less-than-significant without discussion, justification, or data.

CDFW recommends the DEIR/DEIS analyze the potential impacts to fluvial geomorphology and riparian habitat within the primary study area related to Funks and Stone Corral creeks as well as unnamed streams and associated riparian habitat impacted by the Project.

Section 8.1 states that "Impacts along the Feather, and American rivers were also evaluated and discussed qualitatively because the numerical model used for the Sacramento River did not address these rivers." Changes in operations of Shasta Lake, Trinity Lake, Lake Oroville, and Folsom Lake proposed by the Project could change stream flow in the rivers downstream of these reservoirs. This would include both the American and the Feather rivers. CDFW recommends impacts to both the Feather and American

rivers be included in the numeric model and the DEIR/DEIS analyzes potential impacts. At a minimum, the reduced flows will have impacts related to changes in geomorphology at the confluence with each of these rivers.

The DEIR/DEIS identifies on pages 8-10 to 8-11 that “[a] grade control structure (with riprap on both banks) to decrease bank erosion susceptibility was created during construction of the new GCID Main Canal Intake, and suspended sediment deposits in the GCID canal Facilities and bedload deposits in the meander loop are removed periodically.” Additional and exacerbated erosion and sedimentation issues at these locations are a potential consequence of the Project, and CDFW recommends the DEIR/DEIS discuss the cause of the deposition, the frequency of dredging, and the impacts of dredging. The DEIR/DEIS should also include a discussion of the potential impacts of proposed increased withdrawals from the Sacramento River on the carrying capacity of the river. Increased surface water intake could reduce the rivers carrying capacity and therefore increase deposition at each location where surface water intake is increased.

The DEIR/DEIS used a calibrated SRH-Meander model that relied on the Upper Sacramento River Daily Operations Model (USRDOM) daily flows from 1980 to 2010 to predict channel meandering from 2010 to 2030. (DEIR/DEIS, section 8.3.2.2.) Thus, the model was calculated using flows from 1980 – 2010. The severity of the 2012-2017 drought indicates it is likely that we will experience periods of more extreme drought followed by periods of extreme flood events. The DEIR/DEIS does not include any discussion of how the Project will function under those conditions and how impacts may change. In addition, the CALSIM II includes data only through 2003, omitting 15 years of operations that are highly relevant to understanding the potential impacts of the Project. CDFW recommends the DEIR/DEIS include a discussion of how 15 years of omitted data may have affected the modeled results as well as how the Project will function under extreme drought and flood conditions.

The DEIR/DEIS assumes that because water and sediment are both already being diverted at the Delevan Pipeline, the concentration of the sediment in the river would remain unchanged, and therefore, concludes the Project, under each alternative, will have a less than significance impact on sediment concentration. This assumes there is a one to one relationship that holds true regardless of the reduced flow. The CDFW recommends the DEIR/DEIS include the additional scientific data necessary to support this assumption.

Lake and Streambed Alteration

The DEIR/DEIS refers to a regulatory definition of a stream in California Code of Regulations, title 14, section 1.72. CDFW does not rely on this definition of stream for purposes of Fish and Game Code section 1602, and as a matter of law, section 1.72 does not define “stream” for the purpose of Fish and Game Code section 1602. In addition, the applicability of section 1602 of Fish and Game Code to altered or artificial waterways is not solely based on the value of those waterways to fish and wildlife resources but also natural history of such waterways, the hydrologic conditions, the resources they support, and other similar values.

California Endangered Species Act

Section 4.2.5 summarizes the process for obtaining a consistency determination under Fish and Game Code section 2080.1, but it does not include discussion of take authorization under section 2081, subdivision (b) of the Fish and Game Code. CDFW recommends that the DEIR/DEIS include discussion of the incidental take permit process in addition to the consistency determination process.

Section 4.4.2 identifies "consultation" with CDFW regarding California Endangered Species Act as an anticipated State permit or authorization. "Consultation" applies to federal Endangered Species Act. CDFW recommends revising the DEIR/DEIS to identify that the Project will acquire appropriate take authorization under Fish and Game Code sections 2080.1 and 2081, subdivision (b).

Similarly, Table 4-1 lists Section 2081 Management Agreement as a type of permit or approval for take of State-listed species. Please clarify the intended method for obtaining incidental take authorization for State-listed endangered, threatened, and candidate species or rare plants pursuant to current State law.

The DEIR/DEIS identifies various CESA-protected species with the potential to occur within the Project site and may be affected by the Project. Take of species that are listed as endangered or threatened under CESA, or designated as candidates for such listing, is prohibited without appropriate authorization. (Fish & G. Code § 2080, 2085.) Take is defined as "hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill." (Fish & G. Code § 86.) CESA take authorization, should be obtained if the proposed Project has the potential to result in take of a State-listed threatened, endangered, or candidate species, or rare plants.

Issuance of a CESA permit by CDFW is subject to CEQA; therefore the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the proposed Project would impact CESA listed species, CDFW encourages the Authority to engage in early consultation, because significant modification to the proposed Project and mitigation measures may be required in order to obtain a CESA permit. A CESA permit may only be obtained if the impacts of the authorized take of the species are minimized and fully mitigated and adequate funding has been ensured to implement the mitigation measures. In addition, CDFW may only issue a CESA permit if the CDFW determines that issuance of the permit does not jeopardize the continued existence of the species. CDFW will make this determination based on the best scientific information available, and include consideration of the species' capability to survive and reproduce, including the species known population trends and known threats to the species.

Terrestrial Biological Resources

Deferred Mitigation

CEQA Guidelines section 15126.4, subdivision (a)(1)(B) states that formulation of mitigation measures should not be deferred until some future time. The DEIR/DEIS lists a number of mitigation measures for biological resources that rely on future approvals or agreements as a means of bringing identified significant environmental effects to below a

level of significance. For example, Mitigation Measures Wild-1a and 1b states that appropriately timed surveys shall be conducted for species as necessary in coordination with United States Fish and Wildlife Service (USFWS) and CDFW, and acreages of habitat loss shall be determined and compensated for in consultation with USFWS, CDFW, and the United States Army Corps of Engineers (USACE). As stated above because there is no guarantee these approvals or cooperation with all of the involved entities will ultimately occur or what measures they would contain, they should not be considered sufficient measures to reduce impacts to less than significant. The DEIR/DEIS must identify enforceable measures that will reduce the impacts to biological resources to a less-than-significant level.

CEQA requires that any activity resulting in loss of habitat, decreased reproductive success, or other negative effects on population levels of special-status species should be addressed in the DEIR/DEIS. There should be a clear impact assessment that outlines the temporary and permanent effects of the Project on all biological resources within and surrounding the Project site. If it is not possible to avoid impacts to special-status species, the DEIR/DEIS must identify feasible mitigation that reduces project impacts to a less-than-significant level.

Where it is infeasible to define mitigation measures with specificity, the DEIR/DEIS should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, and commit the lead agency to successful completion of the mitigation. Mitigation measures should describe when the mitigation measure will be implemented, and explain why the measure is feasible. As discussed above, Mitigation Measures Wild-1a and 1b, and others, do not meet these requirements. Therefore, CDFW recommends the DEIR/DEIS include measures that are enforceable and do not defer the details of the mitigation to the future.

Fully Protected Species

The DEIR/DIES identifies multiple State fully protected species that have the potential to occur within the Project area. Take of fully protected species is unlawful and subject to enforcement under the Fish and Game Code. The only way for a project to obtain incidental take authorization for any fully protected species is through the development of a Natural Community Conservation Plan (NCCP) (Fish and G. Code, § 2800 et seq.). CDFW recommends the DEIR/DEIS include a discussion of potential for take of fully protected species, and identify measures to completely avoid take of these species.

Nesting Birds

All measures to protect nesting birds should be performance-based, meaning that they will be implemented in a way to ensure they reduce impacts and avoid take under potentially changing circumstances and depending on the individual species present. While some birds may tolerate disturbance within 250 feet of construction activities, other birds may have a different disturbance threshold and “take” could occur if the temporary disturbance buffers are not designed to reduce stress to an individual pair. CDFW recommends including performance-based protection measures for avoiding all nests protected under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, and 3513. A 250-

foot exclusion buffer may be sufficient; however, a buffer may need to be increased based on the birds' tolerance level to the disturbance. Below is an example of a performance-based protection measure:

Should construction activities cause the nesting bird or raptor to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the exclusionary buffer will be increased such that activities are far enough from the nest to stop the agitated behavior. The exclusionary buffer should remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Giant Garter Snake

The DEIR/DEIS states that the giant garter snake (*Thamnophos gigas*) has potential to occur within the Project site and may be affected by the Project. Giant garter snake is listed as a threatened species under CESA and as such it is afforded full protection under the Act.

The Project would have a substantial adverse effect on giant garter snake because the construction of the Project would require direct alteration of known giant garter snake habitat specifically during the construction of the Delevan Pipeline. The giant garter snake is a highly aquatic, wetland obligate species endemic to California. Historic habitat was largely in tule marshes in the Central Valley, ranging from Kern County to Butte County (Hansen and Brode 1980). Giant garter snakes typically occur in slow-moving, warm aquatic environments like marshes, sloughs, and ponds. They have adapted to using irrigation canals and rice fields as natural wetlands have been reduced in the Central Valley (Halstead et al. 2010). Small mammal burrows in upland habitat are generally used for cover and retreat during the active season and for refuge from flood waters during the dormant season (Halstead et al. 2015).

Causes of decline are largely related to habitat loss and fragmentation of wetland habitat. Up to 98 percent of historic giant garter snake habitat in the Central Valley has been lost to development, including agricultural lands (Ellis 1987). Mechanical vegetation management along canal banks such as disking, mowing, and dredging of canals can result in direct mortalities and destruction of basking vegetation and burrows used for refugia. Rodent control along canal or levee banks including burrow grouting can also contribute to loss of habitat and direct mortality.

Based on the foregoing, CDFW considers that Project impacts on giant garter snake would be significant. Due to the likely significant adverse effects to giant garter snake, the Department recommends obtaining take coverage through an incidental take permit which will likely include habitat replacement at a CDFW approved mitigation bank with available giant garter snake credits, or through land acquisition in fee or with a conservation easement to protect managed marsh habitat.

Transmission Line Risks

The Project has the potential to impact birds by increasing their exposure to electrical transmission lines and mortality from electrocution or striking the lines. This is of concern given the Project's location in relation to key resident and migratory bird habitat. The Project is located fewer than five miles from the Sacramento National Wildlife Refuge Complex (SNWR Complex), which is comprised of five National Wildlife Refuges (NWR; Sacramento, Delevan, Colusa, Sutter, and Sacramento river), located between Interstate 5 and Highway 99 in Tehama, Glenn, Butte, Colusa, and Sutter Counties. The proposed transmission line alignment runs approximately one mile south of the Sacramento NWR, along the northern edge of Delevan NWR, and fewer than five miles south of the Sacramento river NWR. The SNWR Complex provides nearly 70,000 acres of wetland, grassland, and riparian habitats for a wide variety of resident and migratory birds, including waterfowl, shorebirds, raptors, waterbirds, and songbirds. The SNWR Complex supports nearly 300 species of birds, many of which are State and/or federally protected, including, but not limited to: bald eagle (*Haliaeetus leucocephalus*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), greater sandhill crane (*Grus canadensis tabida*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), willow flycatcher (*Empidonax traillii*), and bank swallow (*Riparia riparia*). The SNWR Complex is located within the Pacific Flyway and provides wintering habitat and breeding grounds for thousands of waterfowl. Additionally, the SNWR complex provides recreational opportunities including bird and wildlife watching, auto tours, hiking, hunting, photography, biking, geocaching, fishing, and environmental education.

Utility structures such as transmission lines pose electrocution and collision risks to raptors and other birds (APLIC and USFWS 2005). Powerlines may kill hundreds of thousands of birds annually due to electrocution (Manville 2005). Electrocution has been documented as the cause of death of many raptor species in the United States, with eagles and hawks (of the Genus *Buteo*) typically at greatest risk (APLIC and USFWS 2005). Raptors such as golden eagles (*Aquila chrysaetos*), red-tailed hawks (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), and great-horned owls (*Bubo virginianus*) are especially at risk for electrocution due to their large wingspans (APLIC and USFWS 2005). Eagles are the most commonly reported electrocuted birds, with golden eagles reported by Harness (1997) 2.3 times more frequently than bald eagles (*Haliaeetus leucocephalus*) in the western United States (Manville 2005). Red-tailed hawks and great-horned owls are the most commonly reported electrocuted hawk and owl species as reported by Harness (1997) and Harness and Wilson (2001) (Manville 2005). Additionally, birds other than raptors, such as corvids, small flocking birds, and wading birds, can also be electrocuted (APLIC and USFWS 2005). As many as 175 million birds may be killed annually due to collisions with powerlines (Manville 2005). Some studies have shown that waterbirds (e.g., waterfowl, gulls, shorebirds, etc.) are most susceptible to collisions near wetlands and raptors and passerines are most susceptible to collisions in upland habitats away from wetlands (Erickson, Johnson, and Young 2005).

CDFW is concerned the Project transmission line would pose an electrocution and collision risk to resident and migratory birds, including State and federally protected species, within the Project area. To reduce the risk of Project-induced electrocution and collision to birds, CDFW recommends the Project design and construct all transmission lines and associated

facilities in accordance with the current Avian Power Line Interaction Committee (APLIC) guidelines: *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* and revise the DEIR/DEIS as appropriate.

Botanical Resources

Throughout the Botanical Resources chapter of the DEIR/DIES the current California Rare Plant Ranks are referred to by "California Native Plant Society (CNPS) Rare Plant" lists, which is no longer the standard terminology. Additionally, some of these rankings are either incorrect, out of date, or missing threat ranks. CDFW recommends a review and/or modifications of this section to use current California Rare Plant Ranks terminology and correct rankings.

Page 13-15 of the Botanical Resources chapter indicates that land was not surveyed on properties for which authorized access was not obtained, private residences and yards, cemeteries, agricultural fields, and some bedrock stream channels and vertical slopes. This comprises a potentially large area within the Project area that may be impacted by Project activities, and may contain populations of rare plants. CDFW recommends completing an encompassing survey of all lands that could be impacted by the Project.

Botanical surveys were conducted in 1998 and 1999 within the reservoir footprint, and in 2000 through 2003 for potential conveyance routes, recreation areas, and road relocations. These surveys are out of date. CDFW recommends resurveying all areas associated within the Project area that would be impacted. Botanical surveys should be conducted over multiple years and multiple seasons/year to accurately document the species composition of a site. Some plants do not emerge every year, and it would be easy to miss these plants if only one survey is conducted. CDFW's recommends conducting surveys consistent with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009).

The mitigation measure Bot-1a for "Impact Bot-1" states that compensatory mitigation measures for vegetation community impacts will be implemented in coordination with USFWS, CDFW, CNPS, and USACE. As stated above, this measure provides no certainty these approvals or cooperation with all of the involved entities will ultimately occur or what measures would be undertaken. Coordination should not be considered a sufficient measure to reduce impacts to less than significant. The DEIR/DEIS must identify enforceable measures that will reduce the impacts to biological resources to a less-than-significant level. Where it is infeasible to define mitigation measures with specificity, the DEIR/DEIS should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, and commit the lead agency to successful completion of the mitigation. Mitigation measures should also describe when the mitigation measure will be implemented and explain why the measure is feasible. Therefore, the CDFW recommends the DEIR/DEIS include measures that are enforceable and do not defer the details of the mitigation to the future.

Recreation

Section 21.1 states "Recreation is one of several benefits typically provided by public and private water supply projects." "Popular recreation activities in California fall into two categories: (1) water-dependent activities, such as boating, waterskiing, swimming, and fishing; and (2) water-enhanced activities, such as wildlife viewing, camping, hiking, and hunting." However, the analysis in the DEIR/DEIS focuses solely on boat ramp accessibility, without analyzing potential impacts to these other recreational resources. CDFW recommends that the DEIR/DEIS discuss potential impacts to these water-enhanced activities in addition to the operations-related recreational activities that were evaluated.

Section 21.3.2.2 states the analysis only evaluated the operational portion of recreation-day value, meaning that the analysis did not consider the development of a recreational fishery, or a plan to create a sustainable fishery for recreation. The section states the guidelines used are intended to express the net benefit of a reservoir to a recreationist in terms of two equally weighted factors: (1) variety and quality of recreation, and (2) aesthetic qualities of the site. CDFW recommends providing an explanation as to why only some components of recreational activities were evaluated.

As cited in DEIR/DEIS, Table 12-5, several gamefish have been documented in the creeks within the inundation area including largemouth bass (*Micropterus salmoides*), redear sunfish (*Lepomis microlophus*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), Chinook salmon and Sacramento pikeminnow (*Ptychocheilus grandis*). The DEIR/DEIS also states that there are several stock ponds that likely hold gamefish and children have been observed fishing in the area. There is very little data on what recreational value the existing fisheries provide. The inundation area has the potential to provide quality recreational fisheries with the appropriate foresight. CDFW recommends a fisheries development plan outlining target species composition for Sites Reservoir including stocking strategy, habitat enhancement measures, and monitoring efforts to be included.

The DEIR/DEIS states that five recreation areas are possible but only three will be constructed. CDFW recommends including a detailed discussion of the methods to be used to prioritize the potential recreation areas to be constructed. CDFW recommends that any potential recreation areas within drawdown areas be prioritized for wildlife oriented recreation. In addition, CDFW recommends the DEIR/DEIS include a discussion of all recreational uses that will be provided by Sites Reservoir. Within this discussion, the document should include hunting as a compatible use in the recreation areas and lands surrounding the proposed reservoir.

Cumulative Impacts

The DEIR/DEIS concludes that, across all impact areas, there will be no cumulative impacts resulting from the Project. Based on population trends of native anadromous and pelagic fish that are steadily declining under existing regulatory conditions, CDFW considers that the additional extraction of water at the proposed bypass flow rates would exacerbate concerns and generate cumulatively considerable impacts. Table 35-1

provides a summary of present and foreseeable actions included in the cumulative impact analysis, but it appears to exclude a number of significant activities affecting fish and wildlife resources in the Project area. CDFW recommends that a list of relevant cumulative projects be provided with each resource section and the lead agency review for completeness.

Some of the programs, plans, and policies missing include: the lower American River Modified Flow Management Standard, the State Water Project Contract Extension, the Agricultural Drainage Selenium Management Program, the West Sacramento Levee Improvements Program, the Central Valley Flood Protection Plan, FloodSAFE California, the Lower Yolo Restoration Project, the Contra Costa Water District Intake and Pump Station (Alternative Intake Project), 2009 National Marine Fisheries Service Biological Opinion and Conference Opinion for the Coordinated Long-Term Operation of the CVP/SWP, the 2008 United States Fish and Wildlife Service Biological Opinion for Delta smelt for the Coordinated Long-Term Operation of the CVP/SWP, the Central Valley Flood Management Program, the San Joaquin River Restoration Program, the Recovery Plan for Sacramento-San Joaquin Delta Native Fishes, the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Implementation Plan, the Delta Plan, the California Water Action Plan, California EcoRestore, and the Davis-Woodland Water Supply Project.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link:

http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDDB at the following email address: CNDDDB@wildlife.ca.gov. The types of information reported to CNDDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

Pursuant to Public Resources Code §21092 and §21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the proposed Project. Written notifications should be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670.

CDFW appreciates the opportunity to comment on the DEIR/DEIS to assist in identifying and mitigating Project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Questions regarding this letter or further coordination should be directed to Jeff Drongesen, Environmental Program Manager at (916) 207-2823 or Jeff.Drongesen@wildlife.ca.gov.

Sincerely,



Kevin Thomas
Acting Regional Manager

ec: Jeff Drongesen, Environmental Program Manager
Chad Dibble, Environmental Program Manager
Garry Kelley, Environmental Program Manager
Jason Roberts, Acting Environmental Program Manager
Jennifer Nguyen, Senior Environmental Scientist (Supervisor)
Colin Purdy, Senior Environmental Scientist (Supervisor)
Shannon Little, Attorney III
Kyle Stoner, Senior Environmental Scientist (Specialist)
Department of Fish and Wildlife

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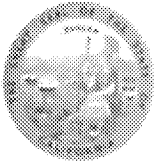
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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670-4599
916-358-2900
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



January 12, 2018

Rob Thomson
Sites Project Authority
P.O. Box 517
Maxwell, CA 95955

Subject: SITES PROJECT
DRAFT JOINT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL
IMPACT STATEMENT (DRAFT EIR/EIS) SCH# 2001112009

Dear Mr. Thomson:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Availability of a Draft EIR/EIS (DEIR/DEIS) from The Sites Project Authority (Authority) for the Sites Project (Project) pursuant the California Environmental Quality Act (CEQA) statute and guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project for which CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code. The Department appreciates that with most large projects there may be a continuing effort to analyze impacts and revise the various project alternatives. The Department remains available for coordination for those purposes.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Fish & G. Code, § 1802.) Similarly, for purposes of CEQA, CDFW is charged to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required. CDFW also administers the Native Plant Protection Act, Natural Community Conservation Planning Act, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.

PROJECT DESCRIPTION SUMMARY

The proposed Project facilities would primarily be located in Glenn and Colusa counties, approximately 10 miles west of the town of Maxwell. The Project would include a new off stream surface storage reservoir (Sites Reservoir) with two main dams, up to nine saddle dams, and up to five recreation areas. The Sites Reservoir would be filled through the diversion of Sacramento River flows via two existing diversions/canals (all alternatives) and a proposed new inlet diversion/outlet structure and pipeline (majority of alternatives). The proposed pipeline would allow for Sacramento River diversions for most alternatives, and discharge of water under all alternatives. Water conveyance between the reservoir and the canals and pipeline would be facilitated by two new regulating reservoirs. Pumping/ electrical generating facilities would also be included as part of most alternatives. A new overhead power line would connect the pumping/generating plants and their associated electrical switchyards to an existing overhead power line in the Project area. New roads and a bridge across the proposed Sites Reservoir would be constructed to provide access to the proposed Project facilities and over the proposed reservoir, and some existing roads would be relocated or improved. The Project would require modifications to one of the existing canals and pumping plants.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the Authority, as lead agency, in adequately identifying and, where appropriate, mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

In general, CDFW has identified several areas where additional, clarified, or modified analysis is necessary to allow for a complete analysis and disclosure of the potential impacts of the Project, and where the DEIR/DEIS requires improved, enforceable mitigation measures. The document's disclosure and analysis of impacts to aquatic species is of particular concern to the Department, including an insufficient analysis of the impacts of increased diversions that would occur during Chinook salmon (*Oncorhynchus tshawytscha*) migration periods, smelt analyses that do not appear to reflect proposed Project operations and potential reductions in Delta outflow, and a lack of analysis of potential entrainment and impingement of green sturgeon (*Acipenser medirostris*) and white sturgeon (*Acipenser transmontanus*) at Project intake facilities. CDFW also has concerns about the Project's potential impacts to floodplain habitat downstream of individual diversion facilities and downstream in the Delta. CDFW does not consider proposed bypass flows identified in the DEIR/DEIS to sufficiently minimize or offset these impacts.

Project Description

The project description within an EIR must supply sufficient detail to allow for the evaluation and review of the potential environmental impacts and must address the "whole of the action" with potential to result in direct physical changes to the environment or reasonably foreseeable indirect physical changes in the environment. (CEQA Guidelines, §§ 15124 & 15378.) The following comments highlight areas where further detail is necessary to allow for such evaluation.

The proposed inlet/outlet structure for Sites Reservoir would consist of a low-level inlet/outlet structure for emergency drawdown releases, a multi-level inlet/outlet structure tower, two fixed wheel gates to isolate the tunnel, a tower access bridge, and various valves and operators to regulate flows into and out of the reservoir. The DEIR/DEIS assumes that the reservoir outlet structures would allow withdrawal of water from the reservoir over a range of depths to manage release temperatures to match Sacramento River temperatures to the extent possible. However, more information is necessary regarding how the proposed Project operations will impact reservoir water surface elevations and volumetric estimates of cold water pool storage. Without this information, it is not possible to understand how those storage levels interact with the water release locations of the proposed outlet structure tower. CDFW also recommends the inclusion of data that summarize how much water can be released at each port and/or level along the structure tower. Collectively, this information is vital to understanding how or if reservoir release temperatures could be managed to match Sacramento River water temperatures and if the proposed outlet structure is appropriately designed to accomplish this task. To inform the analysis of impacts to aquatic biological resources, the Project Description should include a thorough qualitative discussion of when and from what sources the Project generally acquires (diverts) water throughout the year. This should include a discussion of Sacramento River diversions, capture of flows in the Funks and Stone Corral watersheds, and agricultural return flows otherwise flowing to the Colusa Basin drain.

Hydropower Generation and Transmission

The DEIR/DEIS lists "flexible hydropower generation to support the integration of renewable energy sources" as a secondary objective for the Project and includes hydropower generation in three of the five alternatives for the Project. Specifically, Alternatives A, B, and C all include new hydropower facilities with related overhead power line facilities. Alternative D *could* include new hydropower facilities with related overhead power line facilities; however, these facilities may not be included in the final implementation of Alternative D. Alternative C₁ is identical to Alternative C with respect to facilities and operational assumptions, but assumes no hydropower generation or delayed construction of hydropower facilities to account for potential future power market conditions and anticipated permitting processes. CDFW believes it is reasonably likely that the Authority would install hydropower facilities with related overhead power lines at the Project. As the appropriate State fish and wildlife agency for resource consultation and Federal Power Act Section 10(j) (16 U.S.C. section 803 (j)) purposes, CDFW strongly recommends the DEIR/DEIS describe the potential hydropower facilities in detail to ensure adequate analysis of the impacts of the Projects related to hydropower generation and associated facilities. Additionally, if the Authority intends to pursue hydropower facilities,

CDFW recommends the Authority initiate the process to obtain an original license from the Federal Energy Regulatory Commission (FERC) to construct, operate, and maintain a hydroelectric project.

Chapter 3 of the DEIR/DEIS describes the Sites Pumping/Generating Plant that would pump water from the proposed Holthouse Reservoir into the proposed Sites Reservoir and generate electricity during the release of water from Sites Reservoir to Holthouse Reservoir. CDFW is concerned about the potential entrainment of reservoir fish between the two reservoirs during the pumping and release of water. Although the proposed pumps are “fish-friendly” Francis turbines, these pumps do not guarantee survival of all fish that travel through the pumps. Additionally, fish that do survive the turbines may become injured, disoriented, or stressed when they emerge from the turbines and exhibit irregular behavior and be more susceptible to predation or further injury. Chapter 12 of the DEIR/DEIS states that an impact analysis for reservoir fisheries was not completed since no reservoir fishery exists under the Existing Conditions/No Project/No Action Condition. However, the Project proposes to develop and fill the reservoir and develop recreational fishing opportunities, and its diversions from the Sacramento River may result in fish being located in the reservoir. Operation of pumps for hydropower is a part of Project operations and thus the environmental document for the Project must disclose and analyze impacts from those activities. CDFW recommends the Authority include an impact analysis of pump operations in relation to potential entrainment of reservoir fish and consider screening as a mitigation measure to avoid the entrainment and transfer of fish between the two reservoirs during hydropower generation.

Existing Conditions and Project Alternatives

The environmental setting – a description of the physical environmental conditions existing in the vicinity of the Project at the time the notice of preparation is published – will normally constitute the baseline by which a lead agency considers the significance of an environmental impact. (CEQA Guidelines, § 15125, subd. (a).) The existing conditions baseline is the norm from which a deviation should be justified, and caselaw recognizes that complicated modeling introduces inherent uncertainty and makes an analysis less accessible to decision makers and the public. (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal. 4th 439, 454-456.) CDFW recognizes that a lead agency must decide how to most realistically measure existing conditions. However, a hypothetical “maximum permitted operational levels” baseline may be misleading as a basis for comparison, where it is not a realistic assumption. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010), 48 Cal. 4th 310, 322.)

CDFW is concerned that the analytical approach in the DEIR/DEIS, which relies heavily on 2030 projected conditions, does not present the most realistic measurement of existing conditions and could have misleading or confusing results. The same baseline is not used across all models and analyses, which compounds the potential problems.

The DEIR/DEIS assumes Existing Conditions and the No Project/No Action Alternatives to be the same and, refers to them collectively as the “Existing Conditions/No Project/No Action Condition” throughout the document and does not distinguish between them for the

impact analyses. Consequently, the impact analyses compare all Project alternatives to projected future water demands through 2030. These projections also assume Central Valley Project (CVP) and State Water Project (SWP) contractors would use their total contract amounts and that senior water rights users would fully use their water rights – an assumption that does not reflect current conditions.

CDFW is concerned that an environmental baseline that relies on future water demands may obscure the severity of the Project's water operations impacts when compared to actual existing conditions. In addition, the DEIR/DEIS discloses that the CALSIM II, Delta Simulation Model (DSM2), and American River diversion assumptions vary between the Existing Conditions Assumption and the No Action Alternative Assumption. These shifting assumptions prevent a comprehensive and stable understanding of potential Project impacts. CDFW recommends that the DEIR/DEIS provide separate and independent impact analyses of the Existing Conditions and the No Project/No Action Alternatives, and that the Existing Conditions should constitute existing water rights and contract amounts along with existing hydrologic conditions at the time of the release of the Notice of Preparation (NOP) in March 2017. For example, the Project's environmental baseline is more clearly defined in the 2009 National Marine Fisheries Service *Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and the State Water Project*.

As a means of reducing significant environmental impacts of a project, CEQA requires that an EIR must contain feasible mitigation measures as well as feasible project alternatives that could avoid or substantially lessen the project's significant environmental effects. (Pub. Res. Code, § 21002, 21100(b)(4).) As described by the CEQA Guidelines, an EIR must describe "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (Cal.Code Regs., tit. 14, § 15126.6(a).)

The DEIR/DEIS includes Project features and alternatives that maximize the Project's objectives; however, the DEIR/DEIS does not include potentially feasible alternatives that would avoid or substantially lessen the Project's significant environmental impacts. CDFW continues to recommend that the DEIR/DEIS should include a more robust range of operational alternatives, as discussed in its comments to the NOP, provided on March 21, 2017. Of the five alternatives in the DEIR/DEIS, many of them are similar with respect to water operations (e.g. diversions, bypass criteria, deliveries are the same across alternatives.) CDFW recommends that alternatives should be split into two or more alternatives that encompass the entire range of possible water operations scenarios, including an alternative that minimizes operational impacts through more restrictive bypass flows and diversion criteria.

In addition, to the extent there are distinctions among the five alternatives, the document uses a comparative approach that makes it difficult for the reader to understand in absolute terms the impacts of the Project. For example, the document frequently discusses the similarities between Alternatives C₁ and C, and Alternatives C and D, and often considers them to be the same for the impact analyses. CDFW recommends that a complete assessment of the Project's potential impacts be provided to better understand

the ability of Project alternatives to avoid or substantially lessen the Project's potential significant environmental impacts.

Impacts Analysis

Surface Water Resources

The DEIR/DEIS characterizes Project impacts to surface water resources broadly as increased, reduced, or similar when compared to the Existing Conditions/No Project/No Action Condition in Chapter 6. The Project proposes modifications to CVP/SWP operations throughout the Sacramento River watershed and Sacramento-San Joaquin Delta. Generalizations in the analyses make it difficult to understand how the Project will impact surface water resource management, such as cold water storage and the quantities of water that may be released out of reservoir outlets, and the consequent impacts to biological resources. The generalities result because water quantities and Project-generated changes are not disclosed for Existing Conditions, the Action Alternatives and the No Project/No Action Condition for any of the reservoirs, tributaries, or the Delta in the secondary or extended study areas. (See DEIR/DEIS, section 6.3.3.2.) These values are summarized only for CVP and SWP deliveries, Sites Reservoir storage, and inflows at the Delevan pipeline. (See DEIR/DEIS, sections 6.3.3.1 and 6.3.3.3). To enable meaningful review of the Project's impacts to reservoir and tributary management, CDFW recommends that the DEIR/DEIS disclose and analyze water quantity values and the corresponding Project-generated changes for all reservoirs and tributaries in the primary, secondary, and extended study areas under the Existing Conditions, all Action Alternatives, and the No Project/No Action Condition in Chapter 6. CDFW recommends a reporting structure similar to that of Table 6-8, with a caveat that the Existing Conditions and the No Project/No Action Condition should be separated and analyzed independently, as suggested previously. These data summaries will allow the reader to compare Project impacts to surface water resources between the Existing Conditions, all Action Alternatives, and the No Project/No Action Condition.

The DEIR/DEIS surface water resources analysis shows potentially significant impacts to aquatic biological resources because of flow reductions when fish species are present. Specifically, in Dry and Critical water years, flows in the Sacramento River would decrease as a result of the Project in Alternatives A, B, C, and D as compared to the Existing Conditions/No Project/No Action Condition. These decreases would occur: (1) from March through June and in October downstream of Keswick Reservoir; (2) from February through June downstream of the Tehama-Colusa Canal Authority (TCCA) Intake near Red Bluff; (3) from February through April (and March through May in other water years) downstream of Glenn-Colusa Irrigation District (GCID) Main Canal Intake near Hamilton City; and (4) from January through March downstream of Delevan Pipeline Intake/Discharge Facilities. Flows during the springtime (March – May) are critical for juvenile salmonid emigration in the Sacramento River, and especially so in dry and critical years when flows are already low. Decreased flows during this time period as proposed in the Project alternatives will lead to decreased juvenile salmonid survival. In addition, the Project proposes that in all water year types, reservoir releases would generally increase flows in July (and in some reaches June through November) when fish species of concern are least likely to be utilizing that habitat and flows are opposite of the natural hydrology. CDFW recommends

evaluation and analysis of an alternative under which operations provide for flows to increase in the Sacramento River in the winter and spring when juvenile salmonids are present.

The DEIR/DEIS states that modeling for the Project's alternatives restricted diversions to limit impacts on out-migrating juvenile fish as a "surrogate" for likely permit conditions. The DEIR/DEIS identifies this diversion limitation as Mitigation Measure Fish 1f in Chapter 12. However, the DEIR/DEIS never evaluates the Project's potential impacts, in comparison to the DEIR/DEIS significance thresholds, without this mitigation measure in place. Further, as discussed in more detail below, CDFW does not consider the short-term and limited pulse flow protections to adequately reduce impacts to migrating juvenile fish.

Surface Water Quality

Similar to surface water resources, it is difficult to understand how the Project will impact surface water quality because the values and corresponding Project-related changes are rarely reported under the Action Alternatives, the Existing Conditions, and the No Project/No Action Condition for reservoirs, tributaries, or the Delta in the primary, secondary and extended study areas in Chapter 7. CDFW recommends that the DEIR/DEIS disclose and analyze water quality values and the corresponding Project-generated changes for all reservoirs and tributaries in the primary, secondary, and extended study areas under the Existing Conditions, the Action Alternatives, and the No Project/No Action Condition in Chapter 7. The reporting structure for each constituent should include a summary by location, water year, and month for the Existing Conditions and corresponding changes to the No Project/No Action Condition and all Action Alternatives.

Water quality analyses depend on models that rely on CALSIM II, for which the output is on a monthly time step. However, daily and weekly changes to water quality can often have lethal or sub lethal effects on aquatic resources, which a monthly time step cannot capture. For full disclosure and analysis of potentially significant impacts, CDFW recommends that the analyses include a daily time series analysis.

Model limitations may also obscure the severity of the Project's temperature impacts to the Sacramento River. The Sites Reservoir discharge temperature model assumes Sites Reservoir is a vertically segmented reservoir with respect to temperature and derives Sites Reservoir inflow temperatures from three intakes; the TCCA Intake, the GCID Intake, and the Delevan Pipeline Intake. The model excludes potential changes in water temperatures within the Delevan Pipeline between Sites Reservoir and the Sacramento river because the DEIR/DEIS assumes significant warming will not occur within the buried Delevan Pipeline. The model also fails to take agricultural runoff into consideration, which may increase the solar radiation potential of the discharged water (Turek 1990). This has the potential to impact water quality in the reservoir and the associated discharge into the Sacramento River (i.e. increased turbidity and water temperatures).

Because of the considerable distance from the intakes to Sites Reservoir, CDFW recommends that the model incorporates water residence times and seasonal ambient warming from the intakes to Sites Reservoir to calculate the Sites Reservoir inflow

temperatures. CDFW also recommends water temperatures between the Sites Reservoir outlet and the Sacramento river be included in the model and that the model account for possible thermal effects from power generation at three facilities, pump-back operations, and varying residence times within the Holthouse Reservoir Complex, the Terminal Regulating Reservoir, and over the 13.5 mile pipeline. The refined model should be used for an impact analysis that evaluates all Action Alternatives, not just Alternatives C and D, regardless of their perceived similarities or differences.

The underlying assumption that the Sites Reservoir will become stratified because of warming within the upper layer of the reservoir in the summer months, similar to other large reservoirs in the California Central Valley, warrants additional analysis. Most large reservoirs in the Central Valley receive runoff from snowpack, which is largely absent in the Funks and Stone Corral watersheds. In addition, the proposed Sites Reservoir will be located in a shallow canyon, which will create a wide reservoir with a large surface area making it more vulnerable to mixing from high winds. CDFW recommends further analysis on the stratification potential for Sites Reservoir. Seasonal temperature profiles from nearby reservoirs that lack significant snowpack may be useful for this analysis. In addition, the analysis should consider the effects of highly regulated pumping-generating plants on the development of a thermocline, as discussed under the Project Description subheading, above.

Aquatic Biological Resources

Flow

CDFW considers bypass flow and other fish protection criteria identified in the Project alternatives to be insufficient to reduce potentially significant impacts to less-than-significant levels. At the diversions from the Sacramento river, the DEIR/DEIS proposes bypass flow criteria of 3,250 cfs (Red Bluff), 4,000 cfs (Hamilton City), and 5,000 cfs (Wilkins Slough). Population trends of native anadromous and pelagic fish are steadily declining under existing regulatory conditions and the additional extraction of water at the proposed bypass flow rates would exacerbate the problem. Reduced flow affects habitat use, as indicated by salmon models used in the DEIR/DEIS, but the timing and quantity of flow also influences migration events, predator evasion, and ultimately survival (del Rosario et al. 2013; Michel et al. 2013; Perry et al. 2015; Perry et al. 2016; Johnson et al. 2017). When velocities along migratory corridors are reduced, juvenile outmigration takes longer and smolts face increased predation risk (Anderson et al. 2005; Muthukumarana et al. 2008; Cavallo et al. 2013). The effects of flow on survival from travel time and predation risk are not incorporated into the salmon models used for the DEIR/DEIS and the DEIR/DEIS analysis should disclose and address these effects.

Based on a preliminary review of existing juvenile Chinook survival studies, the correlation between increased juvenile survival and flows at Bend Bridge begins to decline at around 13,000 cfs (Michel et al. 2015, Michel 2016). As a mitigation measure for the Project's potentially significant impacts to fish migration, the DEIR/DEIS identifies short-duration pulse flow protections, limited to only one per month regardless of natural conditions. In light of the best available science regarding juvenile survival and flows, the proposed bypass flows for a short duration pulse flow, representing the sole mitigation measure for

this significant impact, is not adequate to mitigate for the substantial loss of emigrating fish during non-pulse flow periods.² CDFW recommends the Project proponents revise the bypass flow requirement to maintain at least 13,000 cfs past all diversion facilities prior to the diversion of water to reduce impacts on out-migrating juvenile salmonids.

Furthermore, the Project does not include any protective bypass flow rates for Delta outflow, but as discussed in additional comments below, the Project is likely to affect Delta outflow significantly, with resulting impacts to aquatic biological resources. The DEIR/DEIS should propose Delta outflow requirements, in addition to bypass flow requirements, to adequately minimize the Project's impacts to downstream fisheries prior to diverting water from the Sacramento river.

The DEIR/DEIS identifies the elimination of fish passage at the Sites Reservoir dams as a less than significant impact because the extent to which fish species may move through this area is unknown and movement of these species is not considered an essential behavioral component of their life cycles. Yet, endemic species often reproduce in habitat dissimilar to rearing habitat (e.g. Sacramento splittail (*Pogonichthys macrolepidotus*)) and demonstrate the ability to move throughout an aquatic environment to access a variety of habitats. CDFW recommends a thorough review of existing scientific literature and studies related to the presence and life-history characteristics of endemic species in streams that would be blocked by the Sites Reservoir dams and/or nearby streams having similar attributes. Aquatic biological studies may also need to be performed to better understand which species are present and possibly impacted by the Project.

During operation of the Project, the DEIR/DEIS states that releases from Sites and Golden Gate dams would maintain flows of up to 10 cfs from October through May in Stone Corral and Funks creeks, respectively. The DEIR/DEIS anticipates these flows would be maintained close to natural levels, and therefore, the operational impacts to fish and aquatic habitats and fish passage in Funks and Stone Corral creeks below Sites and Golden Gate dams would be less than significant. This contradicts statements made in the DEIR/DEIS Chapter 6 section 6.2.6.1 and 6.2.6.2 that peak winter flows of approximately 2,000 cfs are common in Funks Creek and Stone Corral Creek may provide flows ranging from 600 to 2,000 cfs in December through April during wet water years. Therefore, maintaining flows of up to 10 cfs from October through May will not sufficiently mimic the variability of the hydrograph for Stone Corral and Funks creeks and will not provide the same amount of aquatic habitat or adequate protection for fish passage. In addition, these creeks are impacted by water diversions within their watersheds and the habitat being described as ephemeral may be due to anthropogenic degradation where natural flows would be more perennial in nature. To the extent the Project could exacerbate already degraded conditions in those creeks, the DEIR/DEIS should consider the potential impact to the hydrological regime of these streams. In order to maintain fish in good condition as

² Juvenile monitoring data suggests that increases in emigration towards the Delta occur at every pulse in river flow, even where the 3-day average flows are less than 15,000 cfs, and regardless if a pulse has previously occurred in the calendar month. These lower peak flow events typically occur in the October and November months when winter-run are present in the system and identified at current rotary screw trap monitoring locations. Additionally, during pulse events with 3-day average flows near 25,000 cfs, any further flow increases produced by storm events have also resulted in increased rotary screw trap catch, contradicting the DEIR/EIS's claim of decreased migration rates at flows above 25,000 cfs.

required by Fish and Game Code section 5937, base flows outside of the “October through May” period below reservoirs may need to have a perennial regime to support fisheries downstream.

Through its coordination with CVP facilities, the DEIR/DEIS identifies potential impacts of the Project to Central Valley steelhead (*Oncorhynchus mykiss irideus*) in the American river, but the impacts are generalized as less than significant under all of the Action Alternatives. However, lower flows and higher probabilities of temperature exceedances would occur in the summer months under all of the Action Alternatives. Water temperature is a major stressor to juvenile steelhead over the summer months in the American river. The 2009 National Marine Fisheries Service *Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and the State Water Project* identifies flow and temperature criteria applicable to the U.S. Bureau of Reclamation's operations of Folsom Dam. CDFW recommends the Project's proposed operations avoid lower flows and higher probabilities of temperature exceedances in the American river, particularly over the summer, or that the DEIR/EIS identifies this impact as significant and subsequently identifies mitigation measures.

Delta Outflow

The DEIR/DEIS analysis of winter-spring outflow effects on longfin smelt (*Spirinchus thaleichthys*) does not reflect the basic construct of Project operations. The Project description states that diversions are proposed to occur at any time in the year, so long as bypass flows at upstream diversion locations are met. Additionally, Chapter 3.3.1.3 and page 10 of the Executive Summary identify the Projects ability to capture up to 1.8 Million Acre Feet (MAF) of the identified 3 MAF of water produced by unregulated Sacramento River tributaries (i.e. unregulated surface flow during the December – June time period). This capture of flows, in the higher-flow winter and spring months, would significantly reduce Delta outflow. Longfin smelt abundance correlates to Delta outflows in January through June. Yet, the DEIR/DEIS modeled proportional changes to longfin smelt populations of less than 0.1% between all alternatives and all water year types. This implies the Project would have virtually no effect on winter-spring outflow across all water year types, a conclusion that is not consistent with the proposed operations and assumed diversions. CDFW recommends the DEIR/DEIS be revised to contain a more thorough analysis of the proposed outflow impacts to longfin smelt.

The fall abiotic habitat analysis for Delta smelt demonstrates additional inconsistencies between operational assumptions and abilities and the resulting analysis. The DEIR/DEIS concludes it would provide average improvements to X2 through the fall for all water year types. The implication is that Project operations are improving fall conditions enough to change the average position of X2 by half a kilometer or more for the entire September – December period. A change in fall habitat of this magnitude would require a considerable amount of water, likely more than could be released through Project facilities. The ability of the Project to acquire such a large quantity of water for the benefit of fall abiotic habitat is inconsistent with the conclusion that there would be virtually no change to winter-spring outflows based on the aforementioned longfin smelt analysis.

CDFW recommends the DEIR/DEIS explicitly analyze the direct relationship between Project diversions and Delta outflow. This analysis should be accompanied by a qualitative discussion identifying when water would generally be acquired (diverted) throughout the year.

Floodplain habitat

By diverting flows from the Sacramento River, the Project has the potential to reduce spill events at the Tisdale and Fremont Weirs, and consequent flooding of the Sutter and Yolo Bypasses. Reductions in spills could prevent fish from accessing high quality habitat, reduce the amount of time fish have access to the habitat, or reduce the extent of habitat. Therefore, a meaningful and thorough analysis of this potential impact is crucial. However, there are several limitations in the current analysis that prevented meaningful review.

The DEIR/EIS includes Yolo Bypass flow and Sutter Weir spill analyses that are based on the number of years where there is at least one spill event over the weirs into the bypasses of varying amounts (0, 2,000, 4,000, 6,000, 8,000, and 10,000 cfs) with a duration of 0-10 days, 11-20 days, 21-30 days, 31-45 days, and greater than 45 days. These analyses are limited to the months of October through April, when juvenile salmonids and spawning splittail are anticipated to be present in the bypasses. However, Chinook salmon, Sacramento splittail, and other native fish species have been observed using the bypasses during the months of May and June. It is important to note that a reduction in high flow events may delay the timing of fish entering and exiting the bypasses. Therefore, the analysis should include the months of May and June. In addition, by focusing on only whether a given year includes a spill or not, the analysis identically treats a year with one spill event versus ten. By not analyzing the total number of spill events, the analysis does not consider migration behavior of fish entering and exiting the bypasses, and the full suite of months which native fish may utilize these critical habitats. CDFW recommends the analyses be based on the total number of spill events, instead of the number of years with one event or more. Finally, the analysis should include additional inundation amounts of 20,000 and 30,000 cfs to account for the migration timing and behavior of fish entering and exiting the bypasses due to a rapid increase in the inundated area in the Yolo Bypass when flows increase up to 40,000 cfs. Evaluation of the Project's potential to reduce these high spill events would provide essential context to the analysis, given the high benefits to habitat and species from these events.

Entrainment, fish screens, and pre-screen losses

The effects of the proposed Project operations on entrainment and impingement of juvenile fish species at the Delevan Pipeline Intake/Discharge Facilities are identified as potentially significant (Impact Fish-1e). However, the DEIR/DEIS does not identify the specific species impacted. CDFW recommends providing further clarity as to which fish species and life stages are impacted so appropriate avoidance or mitigation measures can be developed. Specifically, the current proposed fish screen design criteria may not provide adequate protection for larval or juvenile fish less than 30-mm in length. For example, a study at Red Bluff Diversion Dam (Borthwick and Corwin 2001) concluded actual fish mortality due to the screens is probably less than 5%. The study did not report larval fish (<30mm) due to the mesh size of the nets used. However, larval fish were frequently

observed during the study, particularly during the spring months. This indicates that the study's conclusions on screen efficacy did not consider larval fish, despite their being present in the area. Furthermore, sturgeon spawning is expected to take place on the Sacramento River during times when water diversions at all three intakes will be increased and Sacramento River flows will be reduced from Red Bluff to Delevan Pipeline under all Action Alternatives. Newly hatched green and white sturgeon larvae are subject to impingement on screened diversions, if the diversions are located near areas where adults are spawning.

The DEIR/DEIS identified effects of Project operations on entrainment and impingement at the TCCA Intake and the GCID Intake as potentially significant for Chinook salmon and steelhead but provided no evaluation of this impact for green sturgeon, white sturgeon, hardhead (*Mylopharodon conocephalus*), river lamprey (*Lampetra ayresii*), Pacific lamprey (*Lampetra tridentata*), and Sacramento splittail, all of which may be present in the vicinity of the diversions. In addition, the DEIR/DEIS identified no mitigation for the potentially significant impact to Chinook salmon and steelhead or other species at these facilities. CDFW recommends that the DEIR/DEIS disclose effects of green sturgeon, white sturgeon, hardhead, river lamprey, and Pacific lamprey entrainment and impingement at the TCCA and GCID intakes. CDFW also recommends appropriate avoidance and/or mitigation measures be proposed for each of the species impacted.

During dry and critical water years, the DEIR/DEIS shows that the Project operations would enable increased CVP/SWP exports from south Delta pumping plants and consequently increase Old and Middle River (OMR) reverse flows during the months of August, September, November, and January under all Action Alternatives. Although the DEIR/DEIS estimated increased entrainment losses for Delta smelt, the document does not address prescreen losses. For Delta smelt, prescreen losses that occur in waterways leading to the diversion facilities appear to be where most mortality occurs (Castillo et al. 2012). The impact analysis used for longfin smelt only relies on the winter-spring outflow model (Kimmerer et al. 2008) and does not analyze effects on entrainment and pre-screen loss relative to CVP/SWP exports for all longfin smelt life stages. Potential prescreen losses for Delta smelt and longfin smelt are reasonably foreseeable indirect impacts of the Project and should be included in the smelt impact analyses. Longfin smelt analysis should address entrainment losses and include variables such as OMR reverse flows and CVP/SWP exports. CDFW also recommends using the DSM2's Particle Tracking Model (DSM2-PTM) to analyze CVP/SWP entrainment effects on larval Delta and longfin smelt, using similar assumptions described in the Effects Analysis: State Water Project Effects on Longfin Smelt, prepared by CDFW in February 2009.

Mitigation

The DEIR/DEIS identifies potentially significant stranding, impingement, and entrainment impacts at the Delevan Facilities (Impact Fish-1e) broadly for juvenile fish species of management concern, and proposes mitigation measures Fish-1f (Sites Project Diversion Restrictions) and Fish-1e (Fish Salvage and Rescue Plan) to reduce the impacts to less than significant. However, mitigation measure Fish-1f appears to have been developed to minimize impacts on Chinook salmon and steelhead and does not address green sturgeon, white sturgeon, hardhead, river lamprey, and Pacific lamprey, all of which are

fish species of management concern. In addition, many of the details of mitigation measures Fish-1f and Fish-1e are deferred to the future, without adequate performance criteria to ensure impacts are minimized. Lastly, as discussed previously in terms of habitat impacts, the pulse flow protection events that were simulated for the impact analyses are far too limited to mitigate the Project impacts on stranding, impingement and entrainment to less than significant levels.

Juvenile outmigration monitoring data on the Sacramento River shows increased movement of juvenile salmon not only during a pulse flow event, but frequently on the leeward side of the hydrograph as well. Based on the criteria used for "qualified" events, the Project would not impose the proposed restrictions during many dry water years when juvenile and larval fish are vulnerable. The DEIR/DEIS analysis shows that based on the past seven years of flow data at Bend Bridge this restriction would apply to less than 2% of all days during that time period. CDFW recommends the DEIR/DEIS include improved mitigation measures that address all of the juvenile fish species impacted and describe how the mitigation will avoid or reduce impacts to less than significant. If it is not possible to include details of the mitigation measures, the mitigation measures should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, describe under what circumstances the measure will be implemented, and explain why the measure is feasible.

Additionally, Impact Fish-1f (Modification of Pulse Flows and Entrainment during Diversions at the Delevan Facilities) was never identified or analyzed in Chapter 12, but is listed as a significant impact in Table 12-8, despite being partially discussed in Chapter 6 in relation to a modeling assumption and Mitigation Measure Fish 1-f. Thus, there is no analysis in the DEIR/DEIS to support the less-than-significant statement in Table 12-8. CDFW recommends a review and/or modification of Chapter 12 to ensure the DEIR/DEIS thoroughly and accurately discloses, analyzes, and identifies feasible mitigation measures for all potential impacts of the Project.

Fluvial Geomorphology

The analysis to support the conclusion that there are no potentially significant impacts to fluvial geomorphology appears to be incomplete. A number of key areas were summarily eliminated from analysis without sufficient justification. Detected impacts in other areas appeared to be designated as less-than-significant without discussion, justification, or data.

CDFW recommends the DEIR/DEIS analyze the potential impacts to fluvial geomorphology and riparian habitat within the primary study area related to Funks and Stone Corral creeks as well as unnamed streams and associated riparian habitat impacted by the Project.

Section 8.1 states that "Impacts along the Feather, and American rivers were also evaluated and discussed qualitatively because the numerical model used for the Sacramento River did not address these rivers." Changes in operations of Shasta Lake, Trinity Lake, Lake Oroville, and Folsom Lake proposed by the Project could change stream flow in the rivers downstream of these reservoirs. This would include both the American and the Feather rivers. CDFW recommends impacts to both the Feather and American

rivers be included in the numeric model and the DEIR/DEIS analyzes potential impacts. At a minimum, the reduced flows will have impacts related to changes in geomorphology at the confluence with each of these rivers.

The DEIR/DEIS identifies on pages 8-10 to 8-11 that “[a] grade control structure (with riprap on both banks) to decrease bank erosion susceptibility was created during construction of the new GCID Main Canal Intake, and suspended sediment deposits in the GCID canal Facilities and bedload deposits in the meander loop are removed periodically.” Additional and exacerbated erosion and sedimentation issues at these locations are a potential consequence of the Project, and CDFW recommends the DEIR/DEIS discuss the cause of the deposition, the frequency of dredging, and the impacts of dredging. The DEIR/DEIS should also include a discussion of the potential impacts of proposed increased withdrawals from the Sacramento River on the carrying capacity of the river. Increased surface water intake could reduce the rivers carrying capacity and therefore increase deposition at each location where surface water intake is increased.

The DEIR/DEIS used a calibrated SRH-Meander model that relied on the Upper Sacramento River Daily Operations Model (USRDOM) daily flows from 1980 to 2010 to predict channel meandering from 2010 to 2030. (DEIR/DEIS, section 8.3.2.2.) Thus, the model was calculated using flows from 1980 – 2010. The severity of the 2012-2017 drought indicates it is likely that we will experience periods of more extreme drought followed by periods of extreme flood events. The DEIR/DEIS does not include any discussion of how the Project will function under those conditions and how impacts may change. In addition, the CALSIM II includes data only through 2003, omitting 15 years of operations that are highly relevant to understanding the potential impacts of the Project. CDFW recommends the DEIR/DEIS include a discussion of how 15 years of omitted data may have affected the modeled results as well as how the Project will function under extreme drought and flood conditions.

The DEIR/DEIS assumes that because water and sediment are both already being diverted at the Delevan Pipeline, the concentration of the sediment in the river would remain unchanged, and therefore, concludes the Project, under each alternative, will have a less than significance impact on sediment concentration. This assumes there is a one to one relationship that holds true regardless of the reduced flow. The CDFW recommends the DEIR/DEIS include the additional scientific data necessary to support this assumption.

Lake and Streambed Alteration

The DEIR/DEIS refers to a regulatory definition of a stream in California Code of Regulations, title 14, section 1.72. CDFW does not rely on this definition of stream for purposes of Fish and Game Code section 1602, and as a matter of law, section 1.72 does not define “stream” for the purpose of Fish and Game Code section 1602. In addition, the applicability of section 1602 of Fish and Game Code to altered or artificial waterways is not solely based on the value of those waterways to fish and wildlife resources but also natural history of such waterways, the hydrologic conditions, the resources they support, and other similar values.

California Endangered Species Act

Section 4.2.5 summarizes the process for obtaining a consistency determination under Fish and Game Code section 2080.1, but it does not include discussion of take authorization under section 2081, subdivision (b) of the Fish and Game Code. CDFW recommends that the DEIR/DEIS include discussion of the incidental take permit process in addition to the consistency determination process.

Section 4.4.2 identifies "consultation" with CDFW regarding California Endangered Species Act as an anticipated State permit or authorization. "Consultation" applies to federal Endangered Species Act. CDFW recommends revising the DEIR/DEIS to identify that the Project will acquire appropriate take authorization under Fish and Game Code sections 2080.1 and 2081, subdivision (b).

Similarly, Table 4-1 lists Section 2081 Management Agreement as a type of permit or approval for take of State-listed species. Please clarify the intended method for obtaining incidental take authorization for State-listed endangered, threatened, and candidate species or rare plants pursuant to current State law.

The DEIR/DEIS identifies various CESA-protected species with the potential to occur within the Project site and may be affected by the Project. Take of species that are listed as endangered or threatened under CESA, or designated as candidates for such listing, is prohibited without appropriate authorization. (Fish & G. Code § 2080, 2085.) Take is defined as "hunt, pursue, catch, capture or kill or attempt to hunt, pursue, catch, capture or kill." (Fish & G. Code § 86.) CESA take authorization, should be obtained if the proposed Project has the potential to result in take of a State-listed threatened, endangered, or candidate species, or rare plants.

Issuance of a CESA permit by CDFW is subject to CEQA; therefore the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the proposed Project would impact CESA listed species, CDFW encourages the Authority to engage in early consultation, because significant modification to the proposed Project and mitigation measures may be required in order to obtain a CESA permit. A CESA permit may only be obtained if the impacts of the authorized take of the species are minimized and fully mitigated and adequate funding has been ensured to implement the mitigation measures. In addition, CDFW may only issue a CESA permit if the CDFW determines that issuance of the permit does not jeopardize the continued existence of the species. CDFW will make this determination based on the best scientific information available, and include consideration of the species' capability to survive and reproduce, including the species known population trends and known threats to the species.

Terrestrial Biological Resources

Deferred Mitigation

CEQA Guidelines section 15126.4, subdivision (a)(1)(B) states that formulation of mitigation measures should not be deferred until some future time. The DEIR/DEIS lists a number of mitigation measures for biological resources that rely on future approvals or agreements as a means of bringing identified significant environmental effects to below a

level of significance. For example, Mitigation Measures Wild-1a and 1b states that appropriately timed surveys shall be conducted for species as necessary in coordination with United States Fish and Wildlife Service (USFWS) and CDFW, and acreages of habitat loss shall be determined and compensated for in consultation with USFWS, CDFW, and the United States Army Corps of Engineers (USACE). As stated above because there is no guarantee these approvals or cooperation with all of the involved entities will ultimately occur or what measures they would contain, they should not be considered sufficient measures to reduce impacts to less than significant. The DEIR/DEIS must identify enforceable measures that will reduce the impacts to biological resources to a less-than-significant level.

CEQA requires that any activity resulting in loss of habitat, decreased reproductive success, or other negative effects on population levels of special-status species should be addressed in the DEIR/DEIS. There should be a clear impact assessment that outlines the temporary and permanent effects of the Project on all biological resources within and surrounding the Project site. If it is not possible to avoid impacts to special-status species, the DEIR/DEIS must identify feasible mitigation that reduces project impacts to a less-than-significant level.

Where it is infeasible to define mitigation measures with specificity, the DEIR/DEIS should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, and commit the lead agency to successful completion of the mitigation. Mitigation measures should describe when the mitigation measure will be implemented, and explain why the measure is feasible. As discussed above, Mitigation Measures Wild-1a and 1b, and others, do not meet these requirements. Therefore, CDFW recommends the DEIR/DEIS include measures that are enforceable and do not defer the details of the mitigation to the future.

Fully Protected Species

The DEIR/DIES identifies multiple State fully protected species that have the potential to occur within the Project area. Take of fully protected species is unlawful and subject to enforcement under the Fish and Game Code. The only way for a project to obtain incidental take authorization for any fully protected species is through the development of a Natural Community Conservation Plan (NCCP) (Fish and G. Code, § 2800 et seq.). CDFW recommends the DEIR/DEIS include a discussion of potential for take of fully protected species, and identify measures to completely avoid take of these species.

Nesting Birds

All measures to protect nesting birds should be performance-based, meaning that they will be implemented in a way to ensure they reduce impacts and avoid take under potentially changing circumstances and depending on the individual species present. While some birds may tolerate disturbance within 250 feet of construction activities, other birds may have a different disturbance threshold and “take” could occur if the temporary disturbance buffers are not designed to reduce stress to an individual pair. CDFW recommends including performance-based protection measures for avoiding all nests protected under the Migratory Bird Treaty Act and Fish and Game Code sections 3503, and 3513. A 250-

foot exclusion buffer may be sufficient; however, a buffer may need to be increased based on the birds' tolerance level to the disturbance. Below is an example of a performance-based protection measure:

Should construction activities cause the nesting bird or raptor to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the exclusionary buffer will be increased such that activities are far enough from the nest to stop the agitated behavior. The exclusionary buffer should remain in place until the chicks have fledged or as otherwise determined by a qualified biologist.

Giant Garter Snake

The DEIR/DEIS states that the giant garter snake (*Thamnophos gigas*) has potential to occur within the Project site and may be affected by the Project. Giant garter snake is listed as a threatened species under CESA and as such it is afforded full protection under the Act.

The Project would have a substantial adverse effect on giant garter snake because the construction of the Project would require direct alteration of known giant garter snake habitat specifically during the construction of the Delevan Pipeline. The giant garter snake is a highly aquatic, wetland obligate species endemic to California. Historic habitat was largely in tule marshes in the Central Valley, ranging from Kern County to Butte County (Hansen and Brode 1980). Giant garter snakes typically occur in slow-moving, warm aquatic environments like marshes, sloughs, and ponds. They have adapted to using irrigation canals and rice fields as natural wetlands have been reduced in the Central Valley (Halstead et al. 2010). Small mammal burrows in upland habitat are generally used for cover and retreat during the active season and for refuge from flood waters during the dormant season (Halstead et al. 2015).

Causes of decline are largely related to habitat loss and fragmentation of wetland habitat. Up to 98 percent of historic giant garter snake habitat in the Central Valley has been lost to development, including agricultural lands (Ellis 1987). Mechanical vegetation management along canal banks such as disking, mowing, and dredging of canals can result in direct mortalities and destruction of basking vegetation and burrows used for refugia. Rodent control along canal or levee banks including burrow grouting can also contribute to loss of habitat and direct mortality.

Based on the foregoing, CDFW considers that Project impacts on giant garter snake would be significant. Due to the likely significant adverse effects to giant garter snake, the Department recommends obtaining take coverage through an incidental take permit which will likely include habitat replacement at a CDFW approved mitigation bank with available giant garter snake credits, or through land acquisition in fee or with a conservation easement to protect managed marsh habitat.

Transmission Line Risks

The Project has the potential to impact birds by increasing their exposure to electrical transmission lines and mortality from electrocution or striking the lines. This is of concern given the Project's location in relation to key resident and migratory bird habitat. The Project is located fewer than five miles from the Sacramento National Wildlife Refuge Complex (SNWR Complex), which is comprised of five National Wildlife Refuges (NWR; Sacramento, Delevan, Colusa, Sutter, and Sacramento river), located between Interstate 5 and Highway 99 in Tehama, Glenn, Butte, Colusa, and Sutter Counties. The proposed transmission line alignment runs approximately one mile south of the Sacramento NWR, along the northern edge of Delevan NWR, and fewer than five miles south of the Sacramento river NWR. The SNWR Complex provides nearly 70,000 acres of wetland, grassland, and riparian habitats for a wide variety of resident and migratory birds, including waterfowl, shorebirds, raptors, waterbirds, and songbirds. The SNWR Complex supports nearly 300 species of birds, many of which are State and/or federally protected, including, but not limited to: bald eagle (*Haliaeetus leucocephalus*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), greater sandhill crane (*Grus canadensis tabida*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), willow flycatcher (*Empidonax traillii*), and bank swallow (*Riparia riparia*). The SNWR Complex is located within the Pacific Flyway and provides wintering habitat and breeding grounds for thousands of waterfowl. Additionally, the SNWR complex provides recreational opportunities including bird and wildlife watching, auto tours, hiking, hunting, photography, biking, geocaching, fishing, and environmental education.

Utility structures such as transmission lines pose electrocution and collision risks to raptors and other birds (APLIC and USFWS 2005). Powerlines may kill hundreds of thousands of birds annually due to electrocution (Manville 2005). Electrocution has been documented as the cause of death of many raptor species in the United States, with eagles and hawks (of the Genus *Buteo*) typically at greatest risk (APLIC and USFWS 2005). Raptors such as golden eagles (*Aquila chrysaetos*), red-tailed hawks (*Buteo jamaicensis*), osprey (*Pandion haliaetus*), and great-horned owls (*Bubo virginianus*) are especially at risk for electrocution due to their large wingspans (APLIC and USFWS 2005). Eagles are the most commonly reported electrocuted birds, with golden eagles reported by Harness (1997) 2.3 times more frequently than bald eagles (*Haliaeetus leucocephalus*) in the western United States (Manville 2005). Red-tailed hawks and great-horned owls are the most commonly reported electrocuted hawk and owl species as reported by Harness (1997) and Harness and Wilson (2001) (Manville 2005). Additionally, birds other than raptors, such as corvids, small flocking birds, and wading birds, can also be electrocuted (APLIC and USFWS 2005). As many as 175 million birds may be killed annually due to collisions with powerlines (Manville 2005). Some studies have shown that waterbirds (e.g., waterfowl, gulls, shorebirds, etc.) are most susceptible to collisions near wetlands and raptors and passerines are most susceptible to collisions in upland habitats away from wetlands (Erickson, Johnson, and Young 2005).

CDFW is concerned the Project transmission line would pose an electrocution and collision risk to resident and migratory birds, including State and federally protected species, within the Project area. To reduce the risk of Project-induced electrocution and collision to birds, CDFW recommends the Project design and construct all transmission lines and associated

facilities in accordance with the current Avian Power Line Interaction Committee (APLIC) guidelines: *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* and revise the DEIR/DEIS as appropriate.

Botanical Resources

Throughout the Botanical Resources chapter of the DEIR/DIES the current California Rare Plant Ranks are referred to by "California Native Plant Society (CNPS) Rare Plant" lists, which is no longer the standard terminology. Additionally, some of these rankings are either incorrect, out of date, or missing threat ranks. CDFW recommends a review and/or modifications of this section to use current California Rare Plant Ranks terminology and correct rankings.

Page 13-15 of the Botanical Resources chapter indicates that land was not surveyed on properties for which authorized access was not obtained, private residences and yards, cemeteries, agricultural fields, and some bedrock stream channels and vertical slopes. This comprises a potentially large area within the Project area that may be impacted by Project activities, and may contain populations of rare plants. CDFW recommends completing an encompassing survey of all lands that could be impacted by the Project.

Botanical surveys were conducted in 1998 and 1999 within the reservoir footprint, and in 2000 through 2003 for potential conveyance routes, recreation areas, and road relocations. These surveys are out of date. CDFW recommends resurveying all areas associated within the Project area that would be impacted. Botanical surveys should be conducted over multiple years and multiple seasons/year to accurately document the species composition of a site. Some plants do not emerge every year, and it would be easy to miss these plants if only one survey is conducted. CDFW's recommends conducting surveys consistent with *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009).

The mitigation measure Bot-1a for "Impact Bot-1" states that compensatory mitigation measures for vegetation community impacts will be implemented in coordination with USFWS, CDFW, CNPS, and USACE. As stated above, this measure provides no certainty these approvals or cooperation with all of the involved entities will ultimately occur or what measures would be undertaken. Coordination should not be considered a sufficient measure to reduce impacts to less than significant. The DEIR/DEIS must identify enforceable measures that will reduce the impacts to biological resources to a less-than-significant level. Where it is infeasible to define mitigation measures with specificity, the DEIR/DEIS should establish performance standards to evaluate the success of the proposed mitigation, provide a range of options to achieve the performance standards, and commit the lead agency to successful completion of the mitigation. Mitigation measures should also describe when the mitigation measure will be implemented and explain why the measure is feasible. Therefore, the CDFW recommends the DEIR/DEIS include measures that are enforceable and do not defer the details of the mitigation to the future.

Recreation

Section 21.1 states "Recreation is one of several benefits typically provided by public and private water supply projects." "Popular recreation activities in California fall into two categories: (1) water-dependent activities, such as boating, waterskiing, swimming, and fishing; and (2) water-enhanced activities, such as wildlife viewing, camping, hiking, and hunting." However, the analysis in the DEIR/DEIS focuses solely on boat ramp accessibility, without analyzing potential impacts to these other recreational resources. CDFW recommends that the DEIR/DEIS discuss potential impacts to these water-enhanced activities in addition to the operations-related recreational activities that were evaluated.

Section 21.3.2.2 states the analysis only evaluated the operational portion of recreation-day value, meaning that the analysis did not consider the development of a recreational fishery, or a plan to create a sustainable fishery for recreation. The section states the guidelines used are intended to express the net benefit of a reservoir to a recreationist in terms of two equally weighted factors: (1) variety and quality of recreation, and (2) aesthetic qualities of the site. CDFW recommends providing an explanation as to why only some components of recreational activities were evaluated.

As cited in DEIR/DEIS, Table 12-5, several gamefish have been documented in the creeks within the inundation area including largemouth bass (*Micropterus salmoides*), redear sunfish (*Lepomis microlophus*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), Chinook salmon and Sacramento pikeminnow (*Ptychocheilus grandis*). The DEIR/DEIS also states that there are several stock ponds that likely hold gamefish and children have been observed fishing in the area. There is very little data on what recreational value the existing fisheries provide. The inundation area has the potential to provide quality recreational fisheries with the appropriate foresight. CDFW recommends a fisheries development plan outlining target species composition for Sites Reservoir including stocking strategy, habitat enhancement measures, and monitoring efforts to be included.

The DEIR/DEIS states that five recreation areas are possible but only three will be constructed. CDFW recommends including a detailed discussion of the methods to be used to prioritize the potential recreation areas to be constructed. CDFW recommends that any potential recreation areas within drawdown areas be prioritized for wildlife oriented recreation. In addition, CDFW recommends the DEIR/DEIS include a discussion of all recreational uses that will be provided by Sites Reservoir. Within this discussion, the document should include hunting as a compatible use in the recreation areas and lands surrounding the proposed reservoir.

Cumulative Impacts

The DEIR/DEIS concludes that, across all impact areas, there will be no cumulative impacts resulting from the Project. Based on population trends of native anadromous and pelagic fish that are steadily declining under existing regulatory conditions, CDFW considers that the additional extraction of water at the proposed bypass flow rates would exacerbate concerns and generate cumulatively considerable impacts. Table 35-1

provides a summary of present and foreseeable actions included in the cumulative impact analysis, but it appears to exclude a number of significant activities affecting fish and wildlife resources in the Project area. CDFW recommends that a list of relevant cumulative projects be provided with each resource section and the lead agency review for completeness.

Some of the programs, plans, and policies missing include: the lower American River Modified Flow Management Standard, the State Water Project Contract Extension, the Agricultural Drainage Selenium Management Program, the West Sacramento Levee Improvements Program, the Central Valley Flood Protection Plan, FloodSAFE California, the Lower Yolo Restoration Project, the Contra Costa Water District Intake and Pump Station (Alternative Intake Project), 2009 National Marine Fisheries Service Biological Opinion and Conference Opinion for the Coordinated Long-Term Operation of the CVP/SWP, the 2008 United States Fish and Wildlife Service Biological Opinion for Delta smelt for the Coordinated Long-Term Operation of the CVP/SWP, the Central Valley Flood Management Program, the San Joaquin River Restoration Program, the Recovery Plan for Sacramento-San Joaquin Delta Native Fishes, the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Implementation Plan, the Delta Plan, the California Water Action Plan, California EcoRestore, and the Davis-Woodland Water Supply Project.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link:

http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDDB at the following email address: CNDDDB@wildlife.ca.gov. The types of information reported to CNDDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

Pursuant to Public Resources Code §21092 and §21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the proposed Project. Written notifications should be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670.

CDFW appreciates the opportunity to comment on the DEIR/DEIS to assist in identifying and mitigating Project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Questions regarding this letter or further coordination should be directed to Jeff Drongesen, Environmental Program Manager at (916) 207-2823 or Jeff.Drongesen@wildlife.ca.gov.

Sincerely,



Kevin Thomas
Acting Regional Manager

ec: Jeff Drongesen, Environmental Program Manager
Chad Dibble, Environmental Program Manager
Garry Kelley, Environmental Program Manager
Jason Roberts, Acting Environmental Program Manager
Jennifer Nguyen, Senior Environmental Scientist (Supervisor)
Colin Purdy, Senior Environmental Scientist (Supervisor)
Shannon Little, Attorney III
Kyle Stoner, Senior Environmental Scientist (Specialist)
Department of Fish and Wildlife

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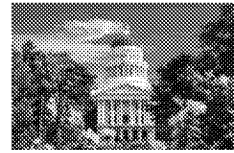
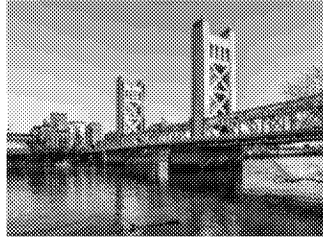
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Sites Reservoir



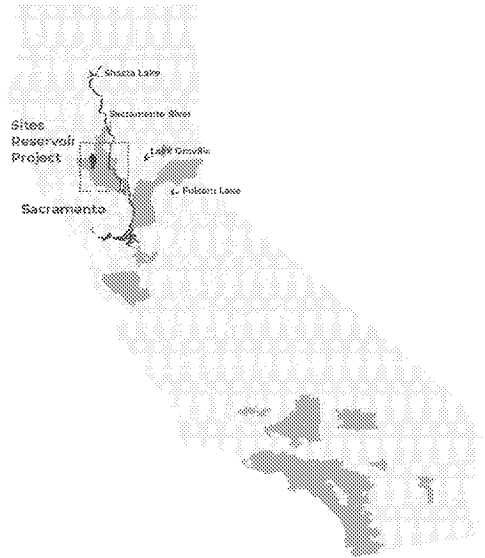
21st Century Solution to California's Water Reliability Challenges

Sites Reservoir is a generational opportunity to construct a multi-benefit water storage project that helps restore flexibility, reliability, and resiliency to our statewide water supply



Our Strength is in Our Broad Statewide Participation

Diverse statewide representation of public agencies advancing Sites Reservoir



Participants include
counties, cities, water
and irrigation districts

Urban and Rural

Sacramento Valley

San Joaquin Valley

Bay Area

Southern California



Our Strength is in Our Broad Statewide Participation

Sacramento Valley

Carter Mutual Water Company
City of American Canyon
Colusa County
Colusa County Water Agency
Cortina Water District
Davis Water District
Dunnigan Water District
Glenn County
Glenn-Colusa Irrigation District
LaGrande Water District
Placer County Water Agency
Reclamation District 108
City of Roseville
Sacramento County Water Agency
City of Sacramento
Tehama-Colusa Canal Authority
Westside Water District
Western Canal Water District

Bay Area

Santa Clara Valley Water District
Zone 7 Water Agency

San Joaquin Valley

Wheeler Ridge-Maricopa Water Storage
District

Southern California

Antelope Valley - East Kern Water Agency
Coachella Valley Water District
Desert Water Agency
Metropolitan Water District
San Bernardino Valley Municipal Water District
San Geronio Pass Water Agency
Santa Clarita Valley Water Agency



Rightsized to Meet Our Current and Future Water Supply Needs

Sites Reservoir has been designed and optimized to meet our water supply needs for today and in the future

The Sites Project Authority conducted a rigorous Value Planning effort to review the project's proposed operations and facilities to develop a project that is "right sized" for our investors and participants while still providing water supply reliability and enhancing the environment

Rightsizing the reservoir was responsive to input from state and federal agencies, NGOs, elected officials, landowners and local communities

The feedback we received through a robust outreach effort was critical to developing a reservoir that is the right size for both people and the environment

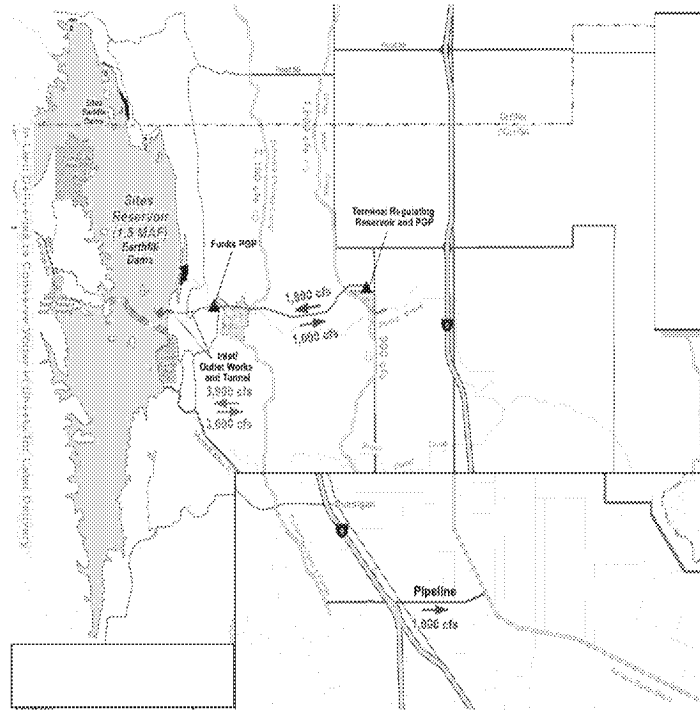


Rightsized to Meet Our Current and Future Water Supply Needs

1.5 million acre-feet

Utilizes the existing Glenn-Colusa Irrigation District and Tehama-Colusa Canal Authority canals to convey water to Sites Reservoir from the Sacramento River

Delivers water back to the Sacramento River through the Tehama-Colusa Canal and through the Colusa Basin Drain for participant deliveries and for the environment



Rightsized to Meet Our Current and Future Water Supply Needs

Member	Reservoir Participation (AFY)
Public Water Agencies	
North of Delta	52,142
South of Delta	140,750
Subtotal Public Water Agencies	192,892
State of CA	~ 40,000
Total Requirement	~230,000

Participant Demand

Participant water subscriptions allocated in the current participation agreement

Allocation of State of California water subscription is based on the Proposition 1 water investment

- Water for Delta Smelt
- Water for Refuges

Release Capacity from Sites

The "rightsized" project can deliver water to meet the demands of our participants and California's investment of water for the environment

Long term average ~240,000 AFY

Year Type	1,000 cfs Release Capacity (AFY) to the Colusa Basin Drain
Wet	90 - 120
Above Normal	260 - 290
Below Normal	245 - 275
Dry	355 - 385
Critically Dry	210 - 240



Assumed Diversion and Operations Criteria

Location	Criteria
Wilkins Slough Bypass Flow	8,000 cfs April/May 5,000 cfs all other times
Fremont Weir Notch	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 5%
Flows into the Sutter Bypass System	No restriction due to flow over Moulton, Colusa, and Tisdale Weirs
Freeport Bypass Flow	Modeled WaterFix Criteria (applied on a daily basis) Post-Pulse Protection (applied on a moving 7-day average) Post-Pulse (3 levels) = January–March Level 2 starts January 1 Level 1 is initiated by the pulse trigger
Net Delta Outflow Index (NDOI) Prior to Project Diversions	44,500 cfs between March 1 and May 31



Assumed Release Criteria

Most releases occur in dry years for water supply and environmental benefits

Priority of releases assume the following:

- Provide water to project participants north and south of the delta
- Provide water to Cache Slough area via Yolo bypass
- Provide water for incremental Level 4 refuge deliveries
- Support Reclamation goals through exchanges

Deliveries to SWP contractors supplement Table A (start @ 85% allocation and more aggressive releases starting @ 65%)



Rightsized to Meet Our Current and Future Water Supply Needs

The Value Planning process has resulted in a project that has a **smaller footprint and operated in a different manner** than originally designed

Due to these changes the Authority will revise and recirculate its Draft EIR

Work with landowners, tribes, stakeholders, NGOs, and local communities to develop a collaborative environmental review process

It is essential that we build a project now that makes sense for all our participants – local, state, and federal



Rightsized to Meet Our Current and Future Water Supply Needs

Reservoir Size (MAF)	1.5
Project Cost (2019\$, billions)	\$2.4 - \$2.7
Contingency Cost (2019\$, billions)	\$0.6
Total Project Cost (2019\$, billions)	\$3.0 - \$3.3
Annualized AFY release	240,000
Range of Annual Costs During Repayment Without WIFIA Loans (2020\$, \$/AF)	\$650 - \$710
Range of Annual Costs During Repayment With WIFIA Loans (2020\$, \$/AF)	\$600 - \$660

The rightsized project is roughly **\$2 Billion less** than the 2017 preferred alternative

Cost savings primarily from the removal of the Delevan Diversion facility on the Sacramento River and the Delevan Pipeline

Lowered the Annual Cost during repayment (\$/AF)

Significant savings to participants with finance through a WIFIA government backed loan



Provides Statewide Benefits for Generations to Come

Sites Reservoir provides many multi-layered benefits



Off-stream Storage

Does not create a barrier to native fish migration



Federal and State Agencies Manage Environmental Water

Adaptable to current and future conditions and priorities



Local Leadership and Cooperation

Aligns with Sacramento Valley's values and fosters regional and statewide collaboration



Cooperative Operation

Increases effectiveness and efficiency of existing water storage infrastructure



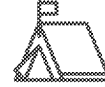
Adaptable to Climate Change

Contributes to system reliability and performance with climate change



Dry Year Water Supply

Reliable dry year water supply for California communities, farms and businesses



Recreational Opportunities

Provides northern Sacramento Valley with additional opportunities for recreation



Environmental Support

Provides environmental water in drier periods for native fish, and habitat for native species and birds



Provides Statewide Benefits for Generations to Come

Sites Reservoir provides water dedicated to environmental use

A significant portion of the Sites Reservoir Project's annual water supplies will be dedicated to environment uses:

Preserve cold-water pool in Lake Shasta later into the summer months to support salmon development, spawning and rearing

Provide a reliable supply of refuge water to improve Pacific Flyway habitat for migratory birds and other native species

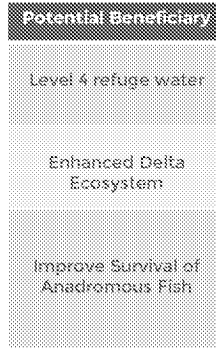
Provide water dedicated to help improve conditions for the Delta Smelt

Water dedicated for the environment provided by Sites Reservoir will be managed by state resources agency managers who will decide how, and when, this water would be used - creating a water asset for the state that does not currently exist



Possibilities of Environmental Water Uses

Member	Reservoir Participation (AFY)
Public Water Agencies	
North of Delta	52,142
South of Delta	140,750
Subtotal Public Water Agencies	192,892
State of CA	~ 40,000
Total Requirement	~230,000



Sites creates a resource that can be managed for the benefit of the species.

Water for the environment is managed by state resource agencies.

There is flexibility to manage these benefits each year.

The range of possibilities will be covered in the recirculated Draft EIR.



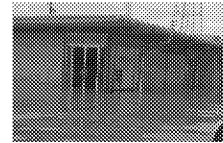
Provides Statewide Benefits for Generations to Come

Sites Reservoir provides regional flood protection benefits

Provides significant regional flood protection benefits for the Sacramento Valley

Will capture and store flood flows that would normally impact the community of Maxwell - protecting homes, business and farms

Will help to limit "down stream" flooding issues by capturing storm flows that sometimes overwhelm the regions flood control facilities



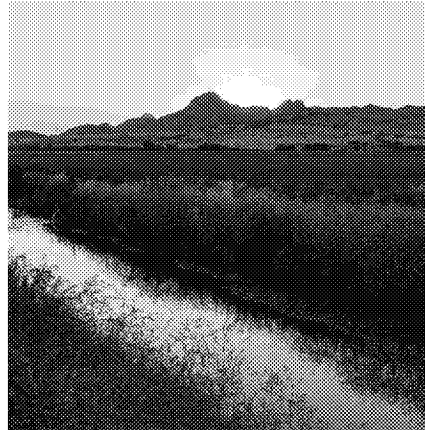
Provides Statewide Benefits for Generations to Come

Sites Reservoir will benefit the local and regional economy

Create hundreds of construction-related jobs during each year of the construction period, and long-term jobs related to operations

Creates new recreation opportunities in the Sacramento Valley which adds to the region's economy

Adding resiliency to the water supply will strengthen the statewide economy and business that rely on a reliable source of water for their operations – particularly agriculture



We are On-Track to Deliver This Vital Project for the People of California

Key Milestones Through 2021

Meet eligibility requirements under Prop 1 (WSIP) in order to access the remainder of the \$816 Million in funding

Recirculate Draft EIR for public comment, proactively engage stakeholders, develop responses to comments to support environmental feasibility determination

Complete Feasibility Report

Secure environmental permit certainty and draft permit applications

Update and refine cost estimate and affordability analysis

Develop Plan of Finance

Improve definition of SWP/CVP exchange, including Operations Plan

Enhance landowner, stakeholder & NGO engagement

Develop Operating Agreement Term Sheets with: DWR, USBR, TCCA, CCID, CBD Authority



Questions

 **Sites**

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 10/14/2020 7:52:26 AM
To: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Spranza, John [John.Spranza@hdrinc.com]
Subject: RE: Reclamation Alternative

Good points, thanks Laurie. Yes, I should have made it clear we did cover a lot of other topics including our interest in moving forward with a joint document and the process we would need to go through to add an alternative. The table is one piece I was supposed to follow up on.

I think a casual, high-level mention that we continue to work with Reclamation on a project that could work for both parties would be fine. I didn't promise Ryan anything with respect to the RC/AC meetings, so no mention could work too.

Looking forward to chatting more about this today.

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 14, 2020 6:16 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>
Subject: RE: Reclamation Alternative

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Good morning,

I just want to weigh in a bit before your meeting with Jerry this morning. I think Erin and I were very clear with Ryan that the discussion yesterday was a staff level discussion - that management would need to take any options of 'new' alternatives to the Authority for approval. Ryan was pushing to get something on the Board's agenda next week and we explained to him that it was not possible to take something to the Board without first going through Work Group and Reservoir Committee and that Authority staff would need to provide a recommendation, which will take time.

I also was very clear with him that the Authority prefers to move forward with the joint EIR/EIS and that we had spent several months working on the approach and getting confirmation from Stacey and Richard that we would be able to pursue a page waiver; that we were already working on chapters based on this approach. We touched on the separate document concept but only to get an idea of how they expected to move forward, if needed. Melissa confirmed it would be similar to the approach we had discussed if we can't get the page waivers – incorporation by reference of the EIR and use of the same appendices.

We also discussed the cooperating agency coordination and MOUs. Following your email guidance (thank you again for that) I told Ryan that the Authority, as the CEQA lead agency, would need to continue to have direct communication with cooperating agencies. Ryan said he did not think that would be an issue.

We agreed to have another meeting next week. I'll work with Ryan and Erin to schedule that meeting after Richard's USBR coordination call on Tuesday.

Erin – thank you for your participation and leadership in the meeting yesterday.

Laurie

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Tuesday, October 13, 2020 8:13 PM
To: Heydinger, Erin <erin.heydinger@hdrinc.com>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: RE: Reclamation Alternative

Thanks Erin. I am good with you getting this to Reclamation. And yes, caveat it a lot – including some caveats in the table so if they lift the table from your email, the caveats follow with the table.

I will talk with Jerry about the mention at the RC/AB meetings. It is too late to take action. My inclination is no to even a detailed mention as this will catch our members completely off guard and we have no idea how they will react. Adding a new alternative is something we need to lay some groundwork for behind the scenes with members – and thru the work group. And frankly, Jerry and Richard need to agree that this will satisfy the need before we even go there. Were not going to this trouble unless this puts their concerns behind us and we have continued support for a joint document. So I will mention it to Jerry, but frankly, I doubt we will do this as it is way too risky and completely goes around our process and we have no confirmation from Reclamation that this will satisfy the concern. I am comfortable with you outlining these concerns with Ryan to give him a heads up that this is highly unlikely. However, Jerry may mention that we continue to work with Reclamation on their concerns they expressed last month on the alternatives in his monthly report and then we can set this up for next month's RC and AB meetings.

Press Ryan on getting to an answer if this will satisfy the concern and if they remain committed to a joint EIR/EIS. And then suggest he elevating this internally to Richard so that its discussed at the next Authority / Reclamation meeting. We need agreement from Richard and Jerry that this is the road we want to go down before we make this big of a change.

Thanks for the teams work on this! I feel like we are starting to bridge this gap with Reclamation. Still work to do, but I think we're on the right path.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Tuesday, October 13, 2020 4:10 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Laurie Warner Herson (laurie.warner.herson@phenixenv.com) <laurie.warner.herson@phenixenv.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: Reclamation Alternative

Hi Ali,

After our discussion with Reclamation, I think they are open to pursuing the 25% cost-share alternative, but they haven't quite dropped the evaluation of a larger reservoir. I did a back-of-envelope calculation that I'd like to send over to them that shows pursuit of 25% of a 1.5 MAF reservoir would actually provide them more water than a 1.7 MAF reservoir with our existing assumptions (nearly full participation) and Reclamation getting the extra 200 TAF. You can see this easily by seeing 25% of 1.5 MAF = 375 TAF which is greater than the additional 200 TAF they would get with the larger reservoir.

Anyway, are you okay with me sending this table over to them? I will caveat it with it being extremely back-of-envelope with no modeling to support it.

	Existing Assumption	Increase Reclamation to 25%	Increase Reservoir Size to 1.7 MAF, Reclamation gets incremental increase in storage ¹
Reservoir Size	1.5	1.5	1.7
Federal Cost (\$M)	\$200	\$750	Unknown. Up to \$1.8B based on federal feasibility.
Approximate Storage Amount (AF) ²	91,000	345,000	303,000
Approximate Deliveries (LTA, TAFY) ³	15,000	60,000	52,000 ⁴

1. Reclamation participation under 1.5 MAF alternative assumes other participants will reduce to accommodate. Increase to 1.7 MAF assumes no reduction in existing participation, but that all unallocated storage be assigned to Reclamation.

2. Assumes dead pool of 120,000 AF

3. Assumes LTA deliveries of 240 TAF, consistent with the Value Planning Report

4. Interpolated based on reservoir size. No modeling has been performed on this alternative.

Also – Ryan wanted us to add to the RC/AB meeting for this month that we would evaluate this. Laurie and I told him we can't take action this month, but that you or Jerry could potentially mention in your update that Reclamation has asked about this and we are talking to them about what alternative with more federal participation using existing facilities might look like. We can talk about that tomorrow, but I wanted to put it on your radar.

Erin

Erin Heydinger, PE, PMP
Asst. Project Manager
Water/Wastewater

HDR
2379 Gateway Oaks Dr, #200
Sacramento, CA 95833
D 916.679.8863 M 651.307.9758

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From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 10/14/2020 8:36:28 AM
To: Herrin, Jeff [jeff.herrin@aecom.com]
CC: Spranza, John [John.Spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Prop 1 Application vs. CDFW Benefits Table

Thanks, Jeff. Do you have time to meet briefly to discuss this tomorrow afternoon?

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Monday, October 12, 2020 11:23 AM
To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Prop 1 Application vs. CDFW Benefits Table

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Erin,

I provided some comments. We may need a follow-up call to walk through items. My major comments are:

- Some of the items in the left column are consistent with the application (but maybe they shouldn't be due to reduced benefit funding) and some of the information in the column comes from policies that were not developed until months after the application was submitted.
- There are a lot of rows with redundant information. It would be much easier to follow if we can streamline the table to eliminate the redundancy. I could try to rework this and simplify it, but didn't budget for it and would need Henry to confirm if he is comfortable that it is in our SOW.
- CDFW confuses benefits and costs. WSIP could not increase award amounts to cover contingency costs because this was NOT included in Prop 1 funding. Monetized benefits are higher in areas where conveyance is required; however, no additional cost was assigned to the State to cover O&M in the cost allocation appendix. This was not possible under WSIP.
- I think it is in the Authorities best interest to try to get Reclamation's Refuge Water Program to manage and track deliveries to the refuges to the extent possible.
- I assume the Salinity Gates CDFW is talking about need to be opened to release water from the Yolo Bypass into the Delta. If this is the case, there would be no benefit to smelt unless these gates were opened. The Authority would likely need to work an agreement with DWR and Reclamation. Note that RD108 is already working with DWR on smelt and should be able to help coordinate this.
- We made no commitment to releasing water for salmon to the Yolo Bypass and received no funding for this benefit. I don't think Sites has enough water to make a significant dent in this. The only source with sufficient water to meet the salmonid need is the Sacramento River. There is not enough water in storage to provide sufficient volume to move the needle.
- Many of the items identified are associated with impacts and will need to be addressed in the EIR and permitting process. In my mind they are independent of the WSIP contract for water supply. There may be benefit in splitting these out into a separate list.

Let me know if you want a follow-up call.

Jeff Herrin

Water Resources Planner, Water Business Unit, Sacramento, CA
D +1-916-679-2084 IPT 264-679-2084
M +1-916-432-0956
Jeff.Herrin@aecom.com

AECOM

2020 L Street
Suite 400
Sacramento, CA 95811, United States
T +1-916-414-5800
aecom.com

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From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Thursday, October 08, 2020 4:07 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: [EXTERNAL] Prop 1 Application vs. CDFW Benefits Table

Hi Jeff,

We're working on a table comparing CDFW's understanding of the Prop 1 ecosystem benefits versus what was included in our application. Would you be able to take a look at the table and provide your comments or edits sometime next week?

You should be able to access it using this link, but let me know if not:

https://sitesreservoirproject.sharepoint.com/:w:/g/envpermitting/EQOP9eGH8YVDsRvM-bd5h1MBUmmgjl4temMl4Sr_fKtp4Q?e=91C90r

John – FYI I also reviewed and added some comments in there. I uploaded the worksheets to that folder as well.

Thanks!
Erin

Erin Heydinger, PE, PMP
Asst. Project Manager
Water/Wastewater

HDR

2379 Gateway Oaks Dr, #200
Sacramento, CA 95833
D 916.679.8863 M 651.307.9758

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/14/2020 9:16:05 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Luu, Henry [Henry.Luu@hdrinc.com]
Subject: RE: FERC Licensing Requirements

Ali,
I will check with Jacob's group as well, they are the ones who have been working through this.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Wednesday, October 14, 2020 8:46 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: FW: FERC Licensing Requirements

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Henry and John –

On our call with NRDC last week, Ron Stork with Friends of the River asked about our FERC license. I explained that we were going to keep our facilities below that which would require a FERC license. He mentioned two things:

1. Can we confirm the size of our facilities and that we would qualify for an exemption? Henry, can you let me know where we are in discussions with FERC as I know this is an active question out there?
2. We have to get approval for an exemption / like there is some application and granting of an exemption – it's not just automatic. John, can you check into this with your FERC team. This was news to me, but I confess that I know very little about the FERC process. Is there approval for an exemption? If so, what does this process look like? And if so, we should add this into our schedule so we keep it on our radar screen.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Jerry Brown <jbrown@sitesproject.org>
Sent: Wednesday, October 14, 2020 8:21 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: FERC Licensing Requirements

Do you think we should send this note to Ron Stork as a follow-up to his question last week?

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Monday, June 1, 2020 12:02 PM

To: Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Williams, Nicole <Nicole.Williams@icf.com>

Subject: RE: Sites - Project Description Team - Revised PMP and Updated Schedule

After discussions with HDR's FERC practice regulatory staff there is a general consensus that the project would not need a FERC license for the reservoir as it does not propose to generate power. With respect to the conduit hydro-electric facility, we also believe that the project would likely be a, "Qualifying Conduit Hydropower Facility" under the Hydropower Regulatory Efficiency Act of 2013, as amended by America's Water Infrastructure Act of 2018. A project that is deemed a Qualifying Conduit Hydropower Facility is not required to be licensed or exempted by FERC provided it meets the following conditions:

1. The conduit is any tunnel, canal, pipeline, aqueduct, flume, ditch, or similar manmade water conveyance that is operated for the distribution of water for agricultural, municipal, or industrial consumption, and is not primarily for the generation of electricity.
2. The facility generates electric power using only the hydroelectric potential of a non-federally owned conduit (the US does not hold fee title).
3. The facility has an installed capacity that does not exceed 40 megawatts (MW).
4. The facility was not licensed or exempted from the licensing requirements of Part I of the FPA on or before August 9, 2013

This process is extremely streamlined and is a 45 day review and processing of the NOI by FERC staff. More information is at the link below.

<https://www.ferc.gov/industries/hydropower/indus-act/efficiency-act/gua-conduit.asp>

John Spranza

D 916.679.8858 M 818.640.2487

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/14/2020 3:12:18 PM
To: Kearns, Zachary@Wildlife [Zachary.Kearns@Wildlife.ca.gov]; Wilson, Billie@Wildlife [Billie.Wilson@wildlife.ca.gov]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Alicia Forsythe [aforsythe@sitesproject.org]; Boyd, Ian@Wildlife [Ian.Boyd@Wildlife.ca.gov]; Torres, Juan@Wildlife [Juan.Torres@wildlife.ca.gov]
CC: Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]
Subject: RE: Discuss 5937 for Funks and Stone Corral Creeks.

Just a reminder to take the poll. Thanks.

John Spranza

D 916.679.8858 M 818.640.2487

From: Spranza, John
Sent: Monday, October 12, 2020 11:58 AM
To: Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Wilson, Billie@Wildlife <Billie.Wilson@wildlife.ca.gov>; 'Jim Lecky (jim.Lecky@icf.com)' <jim.Lecky@icf.com>; Hassrick, Jason (Jason.Hassrick@icf.com) <Jason.Hassrick@icf.com>; Hendrick, Mike (Mike.Hendrick@icf.com) <Mike.Hendrick@icf.com>; Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Cc: Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>
Subject: Discuss 5937 for Funks and Stone Corral Creeks.

Good Morning,

As the Sites design team continue to advance their work products, I would like to get together and discuss the Department's 2017 EIR comment regarding compliance with 5937 of the Fish and Game Code, review some research the ICF team has put together on the creeks and develop an approach to address the concerns raised in the comment. Please use the link below to provide your availability for a meeting to discuss this.

<https://doodle.com/poll/6t6it2n7e2tawpw6>

CDFW Comment: During operation of the Project, the DEIR/DEIS states that releases from Sites and Golden Gate dams would maintain flows of up to 10 cfs from October through May in Stone Corral and Funks creeks, respectively. The DEIR/DEIS anticipates these flows would be maintained close to natural levels, and therefore, the operational impacts to fish and aquatic habitats and fish passage in Funks and Stone Corral creeks below Sites and Golden Gate dams would be less than significant. This contradicts statements made in the DEIR/DEIS Chapter 6 section 6.2.6.1 and 6.2.6.2 that peak winter flows of approximately 2,000 cfs are common in Funks Creek and Stone Corral Creek may provide flows ranging from 600 to 2,000 cfs in December through April during wet water years. Therefore, maintaining flows of up to 10 cfs from October through May will not sufficiently mimic the variability of the hydrograph for Stone Corral and Funks creeks and will not provide the same amount of aquatic habitat or adequate protection for fish passage. In addition, these creeks are impacted by water diversions within their watersheds and the habitat being described as ephemeral may be due to anthropogenic degradation where natural flows would be more perennial in nature. To the extent the Project could exacerbate already degraded conditions in those creeks, the DEIR/DEIS should consider the potential impact to the hydrological regime of these streams. In order to maintain fish in good condition as required by Fish and Game Code section 5937, base flows outside of the "October through May" period below reservoirs may need to have a perennial regime to support fisheries downstream

Thanks.

John

John Spranza, MS, CCN

Senior Ecologist / Regulatory Specialist

HDR

2379 Gateway Oaks Drive, Suite 200

Sacramento, CA 95833

D 916.679.8858 M 818.640.2487

john.spranza@hdrinc.com

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hdrinc.com/follow-us

Sent: 10/15/2020 9:37:41 AM
To: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; John Spranza (john.spranza@hdrinc.com) [john.spranza@hdrinc.com]
CC: Sara M. Katz [SKatz@KatzandAssociates.com]
Subject: RE: Draft Enviro Blog for Consideration
Attachments: Draft Enviro Blog 8.25.2020smk_ali_lwh_Ali.docx

Thanks Laurie.

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 14, 2020 4:02 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; John Spranza (john.spranza@hdrinc.com) <john.spranza@hdrinc.com>
Cc: Sara M. Katz <SKatz@KatzandAssociates.com>
Subject: RE: Draft Enviro Blog for Consideration

Hi Ali,

Please see that attached version for some minor edits and comments. Thanks for the opportunity to review.

Laurie

From: Alicia Forsythe [<mailto:aforsythe@sitesproject.org>]
Sent: Wednesday, October 14, 2020 3:29 PM
To: John Spranza (john.spranza@hdrinc.com) <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Sara M. Katz <SKatz@KatzandAssociates.com>
Subject: FW: Draft Enviro Blog for Consideration

John and Laurie – the Authority is issuing a series of blogs to get more of our message out. Attached is one that Sara drafted for me on environmental benefits. I've made a few minor changes to it. Can you take a look and let me know if you have any changes?

Sara – Once we are done, we should also run by Jerry as he also has a good sense of the NGO community. I suspect he will appreciate seeing this before its published.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Sara M. Katz <SKatz@KatzandAssociates.com>
Sent: Tuesday, September 29, 2020 11:57 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Sarah Rossetto <srossetto@KatzandAssociates.com>
Subject: FW: Draft Enviro Blog for Consideration

Hi Ali – as promised, here is our first cut at a blog for your consideration that focuses on the Environmental Benefits that Sites offers. Kevin gave me permission to pass along to you now with the understanding we still need your contributions of any extra details that are more “in the weeds details” – which is where the environmental activists and regulators have an interest. Hoping this is 80 - 85% of the way there, and you can work your magic with the additional 15 – 20%. We can also add some minor graphics or even icons etc. if that helps tell the story more effectively.

Did you see the final version of the Value Planning blog that was sent last week, authored by Jerry. You will see how his photo is included, along with a nice background photo of the Sites Valley area.

Would you like to set a time for a call later this week to discuss? We are targeting the week of October 12th for distribution. Best regards. Sara



Sara M. Katz
Founder/CEO
o: [858.452.0031](tel:858.452.0031) · d: [619.813.9551](tel:619.813.9551)
[San Diego](#) · [Los Angeles](#) · [San Francisco](#)

From: Sara M. Katz
Sent: Wednesday, August 26, 2020 3:11 PM
To: Kevin Spesert <kspesert@sitesproject.org>
Subject: Draft Enviro Blog for Consideration

Kevin – trying to strike a balance with drilling down on the key environmental benefits while still not getting too far into the weeds AND also ensuring we make mention of a couple of our other “key” Sites messages. The one area I really welcome your close review is the last paragraph – wondering if we can be seen as “advocates” if this is signed by Ali?

Again, we also want to be thinking about the formatting. Are there ways to include graphics, lists, select formatting, etc. that helps ensure these blogs are also “attractive” to read since given the on-line formats, the “look” becomes very important too.

Finally, I am working on the assumption based on our previous conversations that these blogs will go out sequentially, about one a month/plus or minus. Unless you see it differently, we are staying with the order we previously discussed with the Value Planning blog first, and the Sites/Environment blog prepared as the second one.

Thanks Kevin.



Sara M. Katz
Founder/CEO
o: [858.452.0031](tel:858.452.0031) · d: [619.813.9551](tel:619.813.9551)
[San Diego](#) · [Los Angeles](#) · [San Francisco](#)

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 10/15/2020 10:29:07 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [John.Spranza@hdrinc.com]
Subject: RE: Modeling Meeting with Jerry

Yes, I agree. I had this on my mind and had a chance to meet with Jeff Campbell and the scheduling team this morning after incorporating our updated modeling schedule into the master schedule. While that schedule needs some refining, it is currently showing that we will still be able to meet our July release date for the EIR and get the CWC Feasibility done late summer. Jerry mentioned to me he does not want to submit the full CWC Feasibility until September to avoid a lot of re-work based on comments from the Commission. His preference is to coordinate with them throughout. This strategy helps our schedule too.

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

hdrinc.com/follow-us

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, October 15, 2020 10:21 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: Modeling Meeting with Jerry

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Just realized that I completely forgot to coordinate on this. I see this as a really informal discussion. Thinking we move thru at least the following:

Status of Model Changes and Initial Results - Erin
Approach for Diversion Criteria Development – John
Any follow up on schedule that wasn't discussed previously – Team

Anything else we should talk about? Maybe DWR/Reclamation coordination on modeling?

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/15/2020 4:36:09 PM
To: Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: EIR/EIS Chapter 2 -Best Management Practices
Attachments: Table PD2-25, Best Management Practices and Environmental Commitments.pdf; Ch2_AltsDescription_BMPs.docx

Hi Kevin and Ali -

When we met on October 1st to address outstanding information items and direction needed from the Authority on the EIR/EIS project description, we discussed needing your review of Table PD2-25 (see attached). This is the list of BMPs and environmental commitments that are included as part of the project description and therefore would be considered commitments and assumed to be in place when evaluating project effects.

In addition to the PDF version previously shared, I am attaching a WORD version should you prefer to provide direct edits to text. Please let me know if you have any questions.

Thank you,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

Sites Reservoir Project
State Listed Species Likely to be Included in Project Consultation Efforts
October 15, 2020

California Listed Species	Operations	Construction
<u>D</u> elta smelt	X	
<u>L</u> ongfin smelt	X	
<u>w</u> Winter-run Chinook	X	X ^a
<u>S</u> pring-run Chinook	X	X ^a
<u>G</u> iant garter snake	X	X
Swainson's hawk		X
Bank swallow		X ^b
Western yellow-billed cuckoo		X ^b
Tricolored blackbird		X
Palmate-bracted bird's beak		X
<p>a. Likely applicable to Alternative 2 only. Alternative 1 is unlikely to have effects to salmonids during construction.</p> <p>b. Depending upon final project footprint.</p> <p>Note: Preliminary list as of October 2020. List may change as the Authority reinitiates discussions with CDFW on the ITP approach and permit application development.</p>		

Sites Reservoir Project
State Listed Species Likely to be Included in Project Consultation Efforts
October 15, 2020

California Listed Species	Operations	Construction
Delta smelt	X	
Longfin smelt	X	
Winter-run Chinook	X	X ^a
Spring-run Chinook	X	X ^a
Giant garter snake	X	X
Swainson's hawk		X
Bank swallow		X ^b
Western yellow-billed cuckoo		X ^b
Tricolored blackbird		X
Palmate-bracted bird's beak		X
<p>a. Likely applicable to Alternative 2 only. Alternative 1 is unlikely to have effects to salmonids during construction.</p> <p>b. Depending upon final project footprint.</p> <p>Note: Preliminary list as of October 2020. List may change as the Authority reinitiates discussions with CDFW on the ITP approach and permit application development.</p>		

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/16/2020 9:54:44 AM
To: Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: RE: EIR/EIS Chapter 2 -Best Management Practices

By the way, I have placed the WORD version on SharePoint if you do make text edits. You can find the file here:

https://sitesreservoirproject.sharepoint.com/:w:/r/EnvPlanning/Shared%20Documents/RDEIR_SEIS%20Ch%202%20PPD/Ch2_AltsDescription_BMPs.docx?d=wdab8c5ea453b4aebb17c88fd526f9a82&csf=1&web=1&e=qj21qT

From: Laurie Warner Herson
Sent: Thursday, October 15, 2020 4:36 PM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: EIR/EIS Chapter 2 -Best Management Practices

Hi Kevin and Ali -

When we met on October 1st to address outstanding information items and direction needed from the Authority on the EIR/EIS project description, we discussed needing your review of Table PD2-25 (see attached). This is the list of BMPs and environmental commitments that are included as part of the project description and therefore would be considered commitments and assumed to be in place when evaluating project effects.

In addition to the PDF version previously shared, I am attaching a WORD version should you prefer to provide direct edits to text. Please let me know if you have any questions.

Thank you,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/16/2020 10:47:16 AM
To: Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) [Kenneth.Kundargi@wildlife.ca.gov]; La Luz, Felipe@Wildlife [felipe.laluz@wildlife.ca.gov]; Kearns, Zachary@Wildlife [Zachary.Kearns@Wildlife.ca.gov]; afebbo@usbr.gov; Williams, Jonathan@Wildlife [Jonathan.Williams@wildlife.ca.gov]; Chris Fitzer (CFitzer@esassoc.com) [CFitzer@esassoc.com]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]; Leaf, Rob/SAC (Rob.Leaf@jacobs.com) [Rob.Leaf@jacobs.com]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; noblehendrix@gmail.com; Greenwood, Marin [Marin.Greenwood@icf.com]; Jerry Brown [jbrown@sitesproject.org]; Davis, Ryan A [rdavis@usbr.gov]; Kristin White (knwhite@usbr.gov) [knwhite@usbr.gov]; Mosley, Michael I [mmosley@usbr.gov]; Sumer, Derya [dsumer@usbr.gov]; Dekar, Melissa D [mdekar@usbr.gov]; Cordova, Daniel A [dcordova@usbr.gov]; Wolder, Natalie L [nwolder@usbr.gov]; SNechanicky@usbr.gov; Garcia, Donna [dgc Garcia@usbr.gov]; hcasillas@usbr.gov; LColella@usbr.gov; bruff@usbr.gov; Barbara, Vincent F [vbarbara@usbr.gov]; Olah, Austin G [aolah@usbr.gov]; ddeeds@usbr.gov; Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; steven_schoenberg@fws.gov; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]
CC: Perry, Russell W [rperry@usgs.gov]; Wilder, Rick [Rick.Wilder@icf.com]; Manzo, Mario A [MManzo@usbr.gov]; Holm, Lisa M [lholm@usbr.gov]; Pinero, Janice A [JPinero@usbr.gov]; Sahlberg, Ray B [RSahlberg@usbr.gov]; cyril.michel@noaa.gov
Subject: RE: Sites Project and Modeling Update and Discussion- Aquatics Focused
Attachments: 2020_1026_Agency Joint Modeling Update-1_AGN_Final.pdf

Please see the attached agenda for this meeting. If you have any question please feel free to contact me.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----

From: Spranza, John
Sent: Saturday, October 10, 2020 1:08 PM
To: Spranza, John; Davis-Fadtke, Kristal@Wildlife; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov); La Luz, Felipe@Wildlife; Kearns, Zachary@Wildlife; afebbo@usbr.gov; Williams, Jonathan@Wildlife; Chris Fitzer (CFitzer@esassoc.com); Jim Lecky (jim.Lecky@icf.com); Erin Heydinger (Erin.Heydinger@hdrinc.com); Micko, Steve/SAC; Leaf, Rob/SAC (Rob.Leaf@jacobs.com); Monique Briard (monique.briard@icf.com); Hendrick, Mike (Mike.Hendrick@icf.com); aforsythe (aforsythe@sitesproject.org); Hassrick, Jason (Jason.Hassrick@icf.com); noblehendrix@gmail.com; Greenwood, Marin; Jerry Brown (jbrown@sitesproject.org); Davis, Ryan A; Kristin White (knwhite@usbr.gov); Mosley, Michael I; Derya Sumer (dsumer@usbr.gov); Melissa Dekar (mdekar@usbr.gov); Cordova, Daniel (dcordova@usbr.gov); Wolder, Natalie L; SNechanicky@usbr.gov; Garcia, Donna; hcasillas@usbr.gov; LColella@usbr.gov; bruff@usbr.gov; Barbara, Vincent F; Olah, Austin G; ddeeds@usbr.gov; Evan Sawyer - NOAA Federal; steven_schoenberg@fws.gov; Cathy Marcinkevage - NOAA Federal
Cc: Perry, Russell W; Wilder, Rick; Manzo, Mario A; Holm, Lisa M; Pinero, Janice A; Sahlberg, Ray B; cyril.michel@noaa.gov
Subject: Sites Project and Modeling Update and Discussion- Aquatics Focused
When: Monday, October 26, 2020 9:00 AM-10:00 AM (UTC-08:00) Pacific Time (US & Canada).
Where: Webex

To be more efficient with everyone's time we are shortening this meeting to 60 minutes to focus on the project/modeling update. A separate invitation will be sent for a follow-up permitting-focused meeting. An agenda will follow.

The Site's team would like to broaden the scope of an upcoming meeting with CDFW and schedule a joint state/federal agency meeting to provide a brief update on the revised project, review changes in the CalSim/fisheries baseline and models that have occurred in the last year and discuss some initial results using the updated models with a general set of diversion and operational criteria.

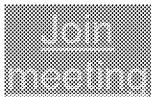
Agenda to follow

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[Global call-in numbers](#)

Join from a video system or application

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You can also dial 173.243.2.68 and enter your meeting number.

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host, [click
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information.

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<http://help.webex.com>

From: Micko, Steve/SAC [Steve.Micko@jacobs.com]
Sent: 10/16/2020 11:33:39 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Heydinger, Erin [erin.heydinger@hdrinc.com]
CC: Leaf, Rob/SAC [Rob.Leaf@jacobs.com]
Subject: RE: Sites - Modeling Flood Control in the Sacramento and American River.

Flag: Follow up

Hi Ali,

From my perspective, not at this juncture. With a monthly time-step, CalSim and its related planning models do not capture flood events. Additionally, Sites action alternatives would meet flood control requirements outlined in the Preferred Alternative (Alt 1) of the ROC on LTO FEIS. Neither SAFCA, nor its member agencies commented on flood control in ROC on LTO.

I believe it may be worthwhile to keep SAFCA in the loop during the planning phase. Then coordinate, in more detail, after the planning phase. SAFCA may have important insight/considerations when it comes to real-time operations.

Please let me know if you have any questions.

Best,
Steve

-----Original Message-----

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Friday, October 16, 2020 10:15 AM
To: Heydinger, Erin <erin.heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Subject: [EXTERNAL] FW: Sites - Modeling Flood Control in the Sacramento and American River.

Erin and Steve - See below. Is there anything we need to talk with SAFCA about with regard to modeling?

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676
| aforsythe@sitesproject.org |
[https://urldefense.com/v3/__http://www.SitesProject.org__;!!B5cixuo07ltTeg!WFOj71ueH3VHW71370Kmcaw4n4zEg9GxYZmt4-ViKuuwH9MURNPnjL-uT7AihDJ_Ug\\$](https://urldefense.com/v3/__http://www.SitesProject.org__;!!B5cixuo07ltTeg!WFOj71ueH3VHW71370Kmcaw4n4zEg9GxYZmt4-ViKuuwH9MURNPnjL-uT7AihDJ_Ug$)

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-----Original Message-----

From: Washburn, Timothy <washburnt@SacCounty.NET>
Sent: Wednesday, October 7, 2020 4:35 PM
To: Brett Ewart <BEwart@cityofsacramento.org>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Re: Sites - Modeling Flood Control in the Sacramento and American River.

Thanks Brett. Ali give me a call at your convenience with any questions you may have on the operation of the flood system.

Tim
916-202-0724

Sent from my iPhone

On Oct 7, 2020, at 11:36 AM, Brett Ewart <BEwart@cityofsacramento.org> wrote:

EXTERNAL EMAIL: If unknown sender, do not click links/attachments.

Hi Ali. I'd like to connect you with Tim Washburn, representing SAFCA. I think it is probably worth ensuring the Sites modeling reflects flood control operations in the Sacramento area.

-Brett

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/19/2020 9:02:46 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: RE: Sites - Description of Last Year's Efforts with CDFW

Sure. We put something together last year for the December Joint meeting that will be a good start.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Monday, October 19, 2020 8:57 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites - Description of Last Year's Efforts with CDFW

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

John – The EIR/EIS team needs a description of the efforts last year with CDFW for the alternatives appendix of the EIR/EIS. This should be fairly detailed and talk about the different “options” we looked at, including some of the model results. Can you take a stab at this? We’ll use it to both document the efforts but also to document why we aren’t considering some of the more liberal diversion criteria.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/19/2020 12:37:18 PM
To: Spranza, John [John.Spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites - Description of Last Year's Efforts with CDFW

Great – thank you both for moving this forward.

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Monday, October 19, 2020 9:03 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites - Description of Last Year's Efforts with CDFW

Sure. We put something together last year for the December Joint meeting that will be a good start.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Monday, October 19, 2020 8:57 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites - Description of Last Year's Efforts with CDFW

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

John – The EIR/EIS team needs a description of the efforts last year with CDFW for the alternatives appendix of the EIR/EIS. This should be fairly detailed and talk about the different “options” we looked at, including some of the model results. Can you take a stab at this? We’ll use it to both document the efforts but also to document why we aren’t considering some of the more liberal diversion criteria.

Ali

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aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/19/2020 12:56:40 PM
To: Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Marcia Kivett [MKivett@sitesproject.org]
Subject: FW: NGO Outreach
Attachments: 03-01A Key Comments from NGO Groups.docx; INT-Tech Memo NGO Outreach-20200930.docx; Att A_NGO_Tribal letter summaries.docx; Att B_letters_comments matrix.docx

Hi Kevin and Ali,

I am wondering if we can find an hour this week to talk about the approach and logistics of conducting a web-based meeting with the NGOs that commented on the 2017 Draft EIR/EIS, per the draft approach and other materials we prepared (attached). I know Ali wanted to have the meeting this month and time is running short.

Kevin – I don't know if you have had time to review any of the attached which I sent previously. However, I can draft a proposed meeting/workshop agenda and send that out before we meet this week.

Thanks,

Laurie

From: Laurie Warner Herson
Sent: Monday, October 5, 2020 1:50 PM
To: Kevin Spesert <kspesert@sitesproject.org>
Subject: FW: NGO Outreach

Hi Kevin,

Ali asked me to come up with a recommended approach for outreach to NGOs that commented on the 2017 Draft EIR/EIS. In addition to the table we prepared for the August staff report (see attached), I have prepared the attached memo and supporting attachments which Ali has reviewed (see below). She has asked that I talk to you and get your thoughts.

Please take a look and let me know when we might be able to discuss the NGO outreach approach.

Thanks and happy Monday !

Laurie

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Monday, October 5, 2020 10:34 AM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: NGO Outreach

Thanks Laurie. Can you talk with Kevin this week about our approach and get his thoughts? I'd like to brief Jerry on it on Friday but want to make sure that Kevin is on board first. I anticipate that my week is going to be packed with staff reports and getting ready for work group, so I just don't see that I will be able to get to talking with Kevin. It would be fantastic if you could take this on.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Monday, October 5, 2020 8:00 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: NGO Outreach

Hi Ali – we could have meetings on a range of topics, depending on questions or requests from the NGOs. I think it also depends on how far we are in the approach/analysis. Either way, I think the topical approach will allow for all groups to be invited and attend based on interest.

From: Alicia Forsythe [<mailto:aforsythe@sitesproject.org>]
Sent: Sunday, October 4, 2020 4:48 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: NGO Outreach

Thanks Laurie. I am good with this approach. Thanks for thinking through this.

Only one question / thought – why would we not have follow-on meetings on all of the topics identified in Attachment B? I could see some of the NGOs like Defenders wanting to know more information on GGS mitigation for example. Or do we host the first meeting, suggest follow-on topics for future meetings and then let them tell us what else they would like to talk about?

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, September 30, 2020 9:59 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: NGO Outreach

Hi Ali,

I put the approach to NGO outreach in memo format to give it more context. The memo and supporting attachments have been placed on SharePoint in the confidential folder here:

https://sitesreservoirproject.sharepoint.com/:f/r/EnvPlanning/Confidential%20%20Attorney_Client/NGO%20outreach%20approach?csf=1&web=1&e=b1QAe7

I have include a copy of the staff report from August that addressed the NGO comments for reference.

Let me know how you would like to move forward. As you will see, I think the first step is a general workshop to update all of the NGO commenters on the status of the project.

Thanks,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/19/2020 2:50:34 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: FW: [EXTERNAL] Bi weekly meetings
Attachments: NODOS MOU amendment 2019-12-16 signed.pdf; NODOS Sites MOU and PMP 07_14_15.pdf; MDietl - PMP - NODOS Investigation and Supporting Documents - md 11-15-17.docx; NODOS PMP subset for Review 2020.10.16_RD.docx

John Spranza

D 916.679.8858 M 818.640.2487

From: Davis, Ryan A [mailto:rdavis@usbr.gov]
Sent: Friday, October 16, 2020 2:00 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: Re: [EXTERNAL] Bi weekly meetings

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

For bi-weekly PMG meetings in the near term I was hoping our teams could collaboratively work on a pre-construction or 2nd amendment MOU/PMP. The documents would cover up to construction. Attached is the 2015 MOU/PMP and a draft 2017 PMP for reference. There are few areas where we aren't aligned and it would be good to memorialize an agreed approach (Section 7 ops for example). We could have something ready to sign soon after a determination of feasibility.

I think initially we could list out all the areas we need to clarify in the MOU/PMP. Then add people at later meetings to address everything.

Also attached is a draft SOW and Human Resource Plan for the MOU's PMP. Let me know what yall think.

Thanks,

Ryan A. Davis, EIT
Project Manager, Water Supply Planning Branch
US Bureau of Reclamation
Interior Region 10: California-Great Basin
2800 Cottage Way, Sacramento, CA 95825
Email: rdavis@usbr.gov
Office: (916) 978-5083
Cell: (916) 206-5133

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Friday, October 16, 2020 10:57 AM
To: Davis, Ryan A <rdavis@usbr.gov>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: [EXTERNAL] Bi weekly meetings

Draft_0004217

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Ryan,

I think that Erin is setting up a meeting for Sites staff to meet with your team. So, I wanted to see if you still would like a bi-weekly permitting call?

Thanks.

John

John Spranza, MS, CCN

Senior Ecologist / Regulatory Specialist

HDR

2379 Gateway Oaks Drive, Suite 200

Sacramento, CA 95833

D 916.679.8858 M 818.640.2487

john.spranza@hdrinc.com

hdrinc.com/follow-us

hdrinc.com/follow-us

FIRST AMENDMENT
to the
MEMORANDUM OF UNDERSTANDING
FOR COMPLETION OF THE
NORTH-OF-THE-DELTA OFFSTREAM STORAGE INVESTIGATION
AND SHARING OF COSTS
By and Between
U.S. Department of the Interior,
Bureau of Reclamation, Mid-Pacific Region
and
Sites Project Authority

A Memorandum of Understanding (MOU) was made and entered into by and between the United States Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, and the Sites Joint Powers Authority (Sites JPA) for the purpose of undertaking and completing ongoing feasibility studies and related environmental compliance activities for the North-of-the-Delta Offstream Storage (NODOS) Investigation. NODOS is one of the CALFED Program Surface Storage Program Feasibility Studies identified in the CALFED Bay-Delta Program Programmatic Record of Decision (CALFED ROD) (August 2000) and study authorizations cited therein.

WHEREAS, Sites Project Authority has joined Reclamation in conducting and advancing the ongoing NODOS Investigation, and these Parties recognize the unique relationships and opportunities, mutual and exclusive needs and dependencies, Federal and non-Federal standards and procedures, potential outcomes and applications of the study results and related decision making and approval processes.

WHEREAS, Reclamation and the Sites Project Authority mutually recognize the need to update some provisions of the original Memorandum of Understanding and also to extend all provisions of the original and amended documents.

WHEREAS, the Sites Project Authority and Reclamation both intend to advance the ongoing NODOS Investigation to the point of completion and eligibility for funding under the Water Infrastructure Improvements to the Nation Act (WIIN) or other future legislation.

NOW, THEREFORE, in consideration of continuing mutual and dependent covenants and conditions upheld previously and contained herein, each Party acknowledges results in respective benefit, the Parties agree as follows:

A1. Amendment to Definitions, section 1 in the original MOU

- A1(a) Update to the definition of Parties, 1(a) in the original MOU. The non-Federal Partner, Sites Joint Powers Authority, name is corrected: "Sites Project Authority" is substituted for the "Sites Joint Powers Authority" as a party to the MOU.

A2. Amendment to Financial Obligations, Section 5 in the original MOU

- A2(a) The budget for Reclamation's cost share of up to \$2,000,000, as identified in Section 5(a) of the MOU, is increased by \$20,000,000 for a new total cost share of \$22,000,000. The budget for the Sites Project Authority's cost share of up to \$5,000,000, as identified in Section 5(a) of the MOU, is increased by \$62,800,000 for a new total cost share of \$67,800,000.
- A2(b) The maximum Federal cost share of \$22,000,000 also represents the maximum Federal expenditure. The Sites Authority may choose to spend more than \$22,000,000 but the Federal cost share will not be increased for the purpose described in Section 2 of the Original MOU. Any requirement and/or expectation for 50/50 cost sharing is henceforth removed.

A3. Other Terms Remain the Same.

Other than the cost-share increase and update to definitions, all other terms and conditions of the MOU shall remain the same.

A4. Counterparts.

This First Amendment to the MOU can be executed in duplicate and each original, once fully executed, shall constitute one and the same instrument.

A5. Effective Date.

This First Amendment to the MOU for the Completion of the North-of-Delta Offstream Storage Investigation and Sharing of Costs will become effective upon full execution.

A6. Term.

This MOU will expire 5 years from Reclamation's signature of the Amendment to the MOU.

A7. Signatures and Authorities.

In Witness Whereof, the Parties execute this First Amendment to the MOU on the date and year indicated below.

Non-Federal Partner:



Board Chairman
Sites Project Authority

11-1-19

Date

Reclamation:



Regional Director
Mid-Pacific Region

DEC 1 5 2019

Date

FOR



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

700 files

IN REPLY REFER TO:

MP-720
ADM-13.00

JUL 14 2015

Mr. Leigh W. McDaniel
Chair
Sites Project Joint Power Authority
P.O. Box 1266
Willows, CA 95988

Subject: Memorandum of Understanding (MOU) for Completion of the North-of-the-Delta
Offstream Storage (NODOS) Investigation and Sharing of Costs

Dear Mr. McDaniel:

Enclosed for your records is one fully-signed original MOU for the NODOS Investigation.

If you have any questions, please contact Mr. Dean Apostol at 916-978-5072 or
dapostol@usbr.gov.

Sincerely,

David G. Murillo
Regional Director

Enclosures

bcc: SOL (KAllen)
MP-700 (MDenning)
MP-720 (RGanzfried, DApostol)

MEMORANDUM OF UNDERSTANDING
FOR COMPLETION OF THE
NORTH-OF-THE-DELTA OFFSTREAM STORAGE INVESTIGATION
AND SHARING OF COSTS

By and Between

U.S. Department of Interior,

Bureau of Reclamation, Mid-Pacific Region

And

Sites Joint Powers Authority

This Memorandum of Understanding (MOU) is made and entered into by and between the United States Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, and the Sites Joint Powers Authority (Sites JPA) for the purpose of undertaking and completing ongoing feasibility studies and related environmental compliance activities for the North-of-the-Delta Offstream Storage (NODOS) Investigation. NODOS is one of the CALFED Program Surface Storage Program Feasibility Studies identified in the CALFED Programmatic Record of Decision (August 2000) and study authorizations cited herein.

WHEREAS, Reclamation, through Federal Fiscal Year 2014, has expended approximately \$13 million on NODOS studies, agency and stakeholder coordination, public involvement activities, and over \$92 million overall on four CALFED Bay-Delta Program Surface Storage Feasibility Studies; the State of California, Department of Water Resources (DWR) has expended more than \$42 million on NODOS efforts and an estimated \$80 million for the CALFED Storage Program overall; and the Sites JPA has expended approximately \$1.75 million to date and intends to spend an additional \$3 million by December 1, 2016, for related studies and activities.

WHEREAS, Sites JPA is hereby joining Reclamation in conducting and advancing the ongoing NODOS Investigation, and these Parties recognize the unique relationships and opportunities, mutual and exclusive needs and dependencies, Federal and non-Federal standards and procedures, potential outcomes and applications of the study results, and related decision making and approval processes.

NOW, THEREFORE, in consideration of mutual and dependent covenants and conditions contained herein, which each Party acknowledges results in respective benefit, the Parties agree as follows:

1. Definitions - The following terms shall have the following meanings when used in this MOU:

- 1(a) Parties: Shall mean Reclamation and the Sites JPA.
- 1(b) CALFED Bay-Delta Surface Storage Program Feasibility Studies: Shall mean Feasibility Studies which are identified and/or authorized in the CALFED Bay-Delta Authorization Act (Public Law (P.L.) 108-361) and include the NODOS Investigation, Los Vaqueros Expansion, Upper San Joaquin River Basin Storage Investigation, and Shasta Lake Water Resource Investigation.
- 1(c) Contributed Funds Agreement: Shall mean a legal financial agreement used by Reclamation to receive “all moneys ... from any State, municipality, corporation, association, firm, district, or individual for investigations, surveys, construction work, or any other development work incident thereto involving operations similar to those provided for by the Reclamation law, are covered into the Reclamation fund and shall be available for expenditure for the purposes for which contributed in like manner as if said sums had been specifically appropriated for said purposes.” 43 USC § 395. Any such Contributed Funds Agreement would be separate from this MOU.
- 1(d) Cost-Share: Shall mean the Parties’ contributions as in-kind services as further defined in Articles 1(e) and 5(a) of this MOU, and contributed funds, if a separate Contributed Funds Agreement referenced in Article 1(c) is completed.
- 1(e) In-Kind Services: Shall mean eligible donated time and effort, real and personal property, and goods and services, as defined by the Department of Interior. In-kind services may be used as a cost-share, but the value of the in-kind contributions must be evaluated and documented. Valuation of in-kind services shall be in accordance with 2 CFR Part 200, including applicable sections of Appendices A-E, *Cost Principles for State, Local, and Indian Tribal Governments* (OMB Circular A-87).
- 1(f) Intellectual Property: Shall mean any invention that is legally protected through patents, copyrights, trademarks, and trade secrets, or otherwise protectable under Title 35 of the United States Code, under 7 USC § 2321, et seq., or under the patent laws of a foreign country.
- 1(g) Confidential Information: Shall mean any information that is privileged or protected from public release under the Freedom of Information Act (FOIA), 5 USC 552(b).
- 1(h) Confidential Business Information: Shall mean trade secrets or commercial or financial information that is privileged or confidential under the meaning of FOIA, 5 USC § 552(b)(4).
- 1(i) Key Personnel: Shall mean team members involved in the administration, management, or performance of the studies as defined in this MOU.
- 1(j) Subject Invention: Shall mean any invention or other intellectual property conceived or first reduced to practice under this MOU which is patentable or otherwise

protectable under Title 35 of the United States Code, under 7 USC § 2321, et seq., or under the patent laws of a foreign country.

1(k) Scope of MOU: Those activities, actions, and products set forth in Attachment A, *Project Management Plan*.

1(l) Term of MOU: That period set forth under Article 6 below.

2. Purpose of MOU - The Parties herein agree that the purpose of this MOU is to clearly define and implement the activities, schedule, and responsibilities to complete the NODOS Investigation and specified documents consistent with the attached Project Management Plan (PMP) and schedule, and to share costs as outlined in this MOU, consistent with the authorizations identified below and other pertinent Federal, State, and local laws and policy. If mutually agreed, the Parties may amend this MOU to cooperatively proceed with additional activities which would be identified in a revised Scope of MOU/PMP.

3. Authority for MOU - Reclamation authority to enter into this MOU:

3(a) Reclamation Act of June 17, 1902 (Ch. 1093, 32 Stat. 388; 43 USC § 372, et seq.), and acts amendatory thereof and supplementary thereto.

3(b) Feasibility Study Act, 1980 (P.L. 96-375).

3(c) Central Valley Project Improvement Act, 1992 (Title 34 of P.L. 102-575).

3(d) Consolidated Appropriations Resolution, 2003 (P.L. 108-7).

3(e) Water Supply, Reliability, and Environmental Improvement Act, 2004 (P.L. 108-361, Sec. 103(d)(1)(A)(i)(I).

3(f) Consolidated Appropriations Act, 2014 (P.L. 113-76, Sec. 208).

4. Roles and Responsibilities of Reclamation and the Sites JPA

4(a) Executive Steering Committee: Each Party to this MOU will assign an executive-/leadership-level representative to participate on the Executive Steering Committee for the duration of the study. Members on the committee will provide both program and project leadership, address issues affecting study progress, and identify and strategize resolution of evolving issues or conditions. This committee will meet regularly (initially quarterly). Executive Steering Committee meetings will be used to identify and prioritize issues, develop methodologies and strategies to resolve issues, and to identify needed resources.

4(b) A Project Management Team (PMT) shall be established. Each Party will identify a Project Manager and representatives to participate on the PMT, Project Management Group (PMG) and subgroups as specified in the attached PMP. Reclamation and the

JPA shall jointly chair the PMT. Meetings will be held as needed and used to track status of the studies, coordinate reviews of documents, share both Parties' perspectives on various topics, prepare briefings for the Executive Steering Committee, and any other items the Parties wish to discuss related to the studies. It is anticipated that PMT meetings will be held monthly. Meetings are intended to be in-person but may use remote technology. The PMT shall, on a quarterly basis, share an accounting of the actual expenses incurred by each Party under this MOU in accordance with Article 5 of this MOU.

- 4(c) A PMG shall be established to provide day-to-day oversight and review of work products. The PMG is expected to meet bi-weekly to maintain the progress of the project.
- 4(d) Cooperative Partnership: The Parties will participate cooperatively as both cost-share and study partners to complete the PMP activities effectively and efficiently, with intent to manage and perform joint and/or separate activities; monitor and account for actions; produce documents for review, revision, and distribution to support decision making, approval, and related actions. The Parties commit to sharing all required documents (e.g., technical memoranda, draft and final reports, supporting materials, work products, and summaries of expenditures and expenses) within their respective authorities. Each Party is responsible for ensuring their respective policy, technical, and legal requirements are met.

5. Financial Obligations

- 5(a) Cost Sharing: Reclamation and the Sites JPA will share the eligible costs of preparing Draft and Final Feasibility Reports, and environmental documents. Initially, Reclamation may expend up to \$2 million of in-kind services, subject to appropriation and availability of funds, toward reviewing administrative draft and final draft documents, as well as interim deliverables; the Sites JPA may expend up to \$5 million of in-kind services, subject to availability of funds, toward producing the administrative draft and final draft documents. In-kind services are defined in Articles 1(d) and 1(e) of this MOU.

5(a)(1) In accordance with Reclamation Directives and Standards, the Sites JPA shall account for their actual expenses incurred. These expenses shall be provided to Reclamation on a quarterly basis. Requirements of such accounting shall, at a minimum, include the following:

- 5(a)(1)(i) An explanation, in the form of a progress report, of the work performed for each activity completed during the reported quarter.
- 5(a)(1)(ii) Progress reports shall include a summary of all costs incurred by the Sites JPA. Allowable costs include payroll costs, contract costs, overhead costs, expense vouchers, and other

costs as provided in the applicable Office of Management and Budget (OMB) regulations. Each activity should be supported by reports from the Sites JPA financial system providing a breakdown of actual costs incurred for the current submission and total costs to date for each activity.

5(a)(1)(iii) A cover letter or memorandum signed by an authorized representative of the Sites JPA should accompany the submission. The cover letter shall reference this MOU and any enclosures (i.e. progress report, expenses/payroll summary).

5(a)(1)(iv) Reclamation will prepare similar progress reports describing costs incurred by Reclamation and will submit them to the Sites JPA.

5(b) Financial Obligations: This MOU is not a funding document and does not obligate or transfer funds between the Parties.

5(c) Scope of MOU/PMP: Attachment A to this MOU details the initial scope of work and level of effort. When the Parties identify new tasks, specific scopes and requirements will be negotiated between the Parties. Attachment A to this MOU will be amended and any other non-Federal cost-share partners will be notified as appropriate.

5(d) In-Kind Services: Submission of claims for in-kind services shall be submitted quarterly. Quarterly accounting must detail work done for agreed upon items. Only costs incurred against a cost-share agreement need to be documented and submitted for approval. Project numbers must be used to distinguish various workloads. Items required for proper verification of work done include certified payroll, applicable contract numbers (i.e., consultant contracts), quarterly reports that coincide with Federal reporting requirements and generally accepted accounting principles, identification of cost-share partners, and scopes of work. Services cannot be included in any other Federal award in a current or prior period and their value must be based upon current market prices.

6. Term and Termination

6(a) Term: This MOU shall take effect upon the date of signature by both Parties and, unless terminated per Article 6(d), will expire 5 years from the date of Reclamation's signature to this MOU.

6(b) Amendment: If either Party desires a modification in this MOU, the Parties shall confer in good faith to determine the desirability of such modification. Any amendment must be mutually agreed upon in-writing by Reclamation and Sites JPA. Any such modification shall not be effective until a written amendment to this MOU is signed by Reclamation and the Sites JPA.

- 6(c) Addition of non-Federal Cost Share Partners: Reclamation retains sole discretion to enter into additional MOUs for the purpose of undertaking and completing the NODOS Investigation and other studies related to the NODOS Investigation, including appropriate cost-share arrangements. Reclamation will notify the Sites JPA of such negotiations if they occur.
- 6(d) Termination and Suspension: Prior to the expiration of this MOU, upon 60 calendar days written notice to the other Party, either Party may elect without penalty to terminate this MOU or to suspend future performance under this MOU. If either Party suspends its performance, the other Party is relieved of any obligation to perform under this MOU until the suspension is terminated. Any such suspension shall remain in effect until either Reclamation or the Sites JPA terminates this MOU, or the suspending Party notifies the other Party of its intent to end the suspension and perform in accordance with this MOU.

7. Publications, Reports, and Confidentiality

- 7(a) Publications: The Parties understand and agree this MOU may be disclosed to the public in accordance with the Freedom of Information Act. Subject to the requirements of confidentiality and preservation of rights in Subject Inventions, described in Article 1(j) herein, either Party may publish the results of the NODOS feasibility studies described in this MOU. A formal Feasibility Report must be consistent with applicable Department of Interior and Reclamation procedures, requirements, policy, and Attachment A, PROVIDED:
 - 7(a)(1) The other Party is allowed to review the proposed publication(s) at least 60 days prior to submission for publication by submission to the authorized agent.
 - 7(a)(2) The final decision as to the publication content rests with the Party that writes the publication(s).
- 7(b) Reports: The results of the science, engineering, and technology data that are collected, compiled, and evaluated pursuant to this MOU, including interim administrative drafts and final draft reports and/or supporting documents, shall be shared and mutually interchanged by the Parties, consistent with Article 6 above and pertinent Reclamation directives, standards, and policy.
- 7(c) Confidentiality: Any Confidential Business Information used in implementing this MOU shall be clearly marked "CONFIDENTIAL" or "PROPRIETARY" by the submitter, and shall not be disclosed by the recipient without permission of the owner in accordance with applicable law (i.e., E.O. 12600). To the extent either Party orally submits Confidential Business Information to the other Party, the submitting Party will prepare a document marked "CONFIDENTIAL" or "PROPRIETARY" embodying or identifying in reasonable detail such orally submitted confidential information and provide the document to the other Party within 30 days of disclosure.

Any Confidential Information disclosed by one Party to the other Party shall remain confidential and protected from disclosure to the maximum extent allowed by applicable law. Neither Party shall be bound by confidentiality if the Confidential Information received from the other Party:

7(c)(1) Is already available to the public or the recipient.

7(c)(2) Becomes available to the public through no fault of the recipient.

7(c)(3) Is non-confidentially received from another Party legally entitled to it.

It shall not be a breach of this MOU if the recipient of Confidential Information is required to disclose Confidential Information by a valid order of a court or other government body, or as otherwise required by law, or as necessary to establish the rights of either Party under this MOU; PROVIDED THAT the recipient of Confidential Information shall provide prompt prior notice thereof to the other Party in order to seek a protective order or otherwise prevent such disclosure, and PROVIDED FURTHER THAT the Confidential Information otherwise shall continue to be confidential.

7(d) Intellectual Property: Unless otherwise agreed by the Parties, custody and administration of inventions made as a consequence of, or in direct relation to, the performance of activities under this MOU shall remain with the respective inventing Party. In the event that an invention is made jointly by employees of the Parties or an employee of an agency's contractor, the Parties shall consult and agree as to future actions toward establishment of patent protection for the invention.

8. General

8(a) Liability: It is understood and agreed that neither Party to this MOU shall be responsible for any damages or injuries arising out of the conduct of activities governed by this MOU, except to the extent that such damages or injuries were caused by the negligent or wrongful acts or omissions of its employees, agents, or officers. Reclamation's liability shall be limited by the Federal Tort Claims Act, 28 USC § 2671, *et seq.*

8(b) Limitations: This MOU sets out the Parties' intentions and objectives and does not apply to any person outside the Sites JPA and Reclamation. This MOU is not intended to, and does not create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity, by anyone against the United States, its agencies, its officers, or any person.

8(c) Notices: Notices between the signatories and copies of correspondence shall be sent to the Reclamation and Sites JPA points of contact below:

Board Chairman
Sites Joint Powers Authority
P.O. Box 1266
Willows, CA 95988

Regional Director
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95826

Telephone: 530-934-8881

Telephone: 916-978-5012

- 8(d) Anti-Deficiency Act: All activities, responsibilities, and commitments made under or pursuant to this MOU are subject to the availability of funds and each Parties' budget priorities, as determined by each Party. No provision herein shall be interpreted to require obligation or payment of funds. Further, no provision shall be interpreted in violation of the Anti-Deficiency Act, 31 U.S.C. 1341, and no liability shall accrue to the United States in the event that funds are not appropriated or allotted. No liability of one party may be transferred to the other party.
- 8(e) Counterparts: This MOU shall be executed in duplicate and each original, once fully executed, shall be equally effective.
- 8(f) Subcontracting Approval: A Party hereto desiring to obtain and use the services of a third party via contract or otherwise shall give prior notice to the other Party, including details of the contract or other arrangement. This requirement is to assure confidentiality is not breached and rights in subject inventions are not compromised.
- 8(g) Assignment: Neither Party has the right to assign this MOU or any of its responsibilities hereunder.
- 8(h) Endorsement: The Sites JPA shall not in any way state or imply that this MOU, or the results of this MOU, is an endorsement by the Federal Government, Department of the Interior, or Reclamation or its organizational units, employees, products, or services except to the extent permission is granted by an authorized representative of Reclamation.
- 8(i) Regulatory Compliance: Both Parties acknowledge and agree to comply with all applicable laws and regulations of the Federal, State, and local environmental, cultural, and paleontological resource protection laws and regulations as applicable to the activities or projects for this MOU. These regulatory compliance requirements may include but are not limited to, the National Environmental Policy Act (NEPA) including the Council on Environmental Quality and Department of the Interior regulations implementing NEPA, the Clean Water Act, the Endangered Species Act, consultation with potentially affected Tribes, and consultation with the State Historic Preservation Office.
- 8(j) Disputes: Any dispute arising under this MOU, which cannot be readily resolved, shall be submitted jointly to the key personnel officials, identified above. Each Party agrees to seek in good faith to resolve the issue through negotiation, or other forms of

nonbinding dispute resolution processes, if mutually acceptable to the Parties.
Pending the resolution of any dispute or claim, the Parties agree that performance of
all obligations shall be pursued diligently.

9. Signatures and Authorities

In Witness Whereof, the Parties execute this MOU on the date and year indicated below.

9(a) Bureau of Reclamation

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION

Dated: 7/14/2015 By: David G. Mueller
Regional Director

9(b) Sites Joint Powers Authority

SITES JOINT POWERS AUTHORITY
Dated: 6/17/2015 By: [Redacted Signature]
Board Chairman

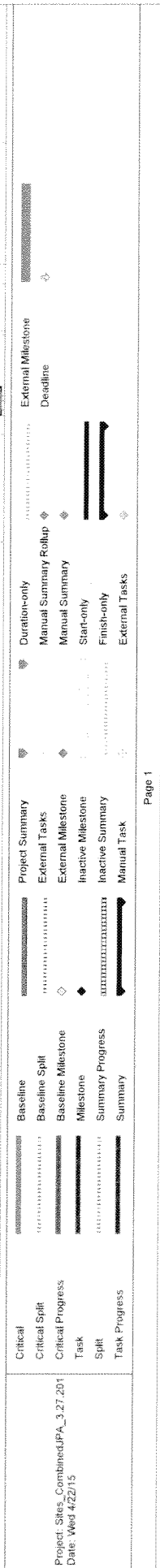
ATTACHMENT A

Draft Project Management Plan

ATTACHMENT B

Project Schedule

ID	Task Name	Duration	Baseline Start	Baseline Finish	Predecessors	Successors	Resource Names
1	Project Duration Activities						
2	Kickoff Meeting	435 days Tue 2/3/15	Tue 10/4/16	Tue 2/3/15			
3	Project management & team coordination	1 day Tue 2/3/15	Tue 2/3/15	Tue 2/3/15			
4	Cooperating agency & stakeholder involvement	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2	3, 4, 6, 7, 8, 9, 10, 11, 13	Reclamation, Joint PC
5	Public involvement & outreach	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2		Reclamation, Joint PC
6	Potential financial partners	380 days Wed 2/4/15	Tue 7/1/16	Tue 10/4/16	2	90	Reclamation, Joint PC
7	NGOs & other stakeholders	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2		Reclamation, Joint PC
8	Cooperating Agencies (per NEPA)	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2		Reclamation, Joint PC
9	Format Agency consultation (federal, state, local)	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2		Reclamation, Joint PC
10	Communication strategy & plan	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2		Reclamation, Joint PC
11	Contract management	435 days Wed 2/4/15	Tue 10/4/16	Tue 10/4/16	2		Reclamation, Joint PC
12	PHASE 1: Develop & Evaluate New Alternative	121 days Wed 2/4/15	Wed 7/22/15	Wed 7/22/15	2	16	Reclamation, Joint PC
13	MOU (including Cost Sharing)	35 days Wed 2/4/15	Tue 3/24/15	Tue 3/24/15	2	16	Reclamation, Joint PC
14	PMP - final draft	50 days Wed 2/4/15	Tue 4/14/15	Tue 4/14/15	145S	16	Reclamation, Joint PC
15	Develop initial budget & schedule	11 days Thu 4/16/15	Thu 4/30/15	Thu 4/30/15	13, 14, 15, 17FF	40, 19, 20, 21, 22, 23, 24	Reclamation, Joint PC
16	Sign PMP & MOU	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	145S	16FF	Reclamation, Joint PC
17	Secure funding to support FPEIS in Reclamation by re-prioritization	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
18	Develop & confirm mgmt measures & metrics	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
19	(Example) Financial/economic	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
20	Water supply metric (Ag, M&I, Env)	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
21	Operational flexibility metric	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
22	Anadromous fish metric	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
23	Hydropower metrics (Plexos?, DWR model?)	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
24	Water quality metric	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16	25FF, 27, 28	Reclamation, Joint PC
25	Other metrics as needed (i.e. State's 5 public benefits)	10 days Fri 5/1/15	Thu 5/14/15	Thu 5/14/15	16, 19FF, 20FF, 21Z, 28		Reclamation, Joint PC
26	Describe New Alternatives	49 days Fri 5/1/15	Wed 7/22/15	Wed 7/22/15	19, 20, 21, 22, 23, 28SS, 30, 48, 50		Reclamation, Joint PC
27	Develop project description for JPA, preferred alternative	9 days Fri 5/1/15	Wed 5/27/15	Wed 5/27/15	19, 20, 21, 22, 23, 2, 30, 42, 43, 34, 85		Reclamation, Joint PC
28	Update Operations for Sac Valley Water Use	9 days Fri 5/1/15	Wed 5/27/15	Wed 5/27/15	27SS	30	Reclamation, Joint PC
29	Road VS Bridge Evaluation (JPA lead)	5 days Fri 5/1/15	Thu 5/21/15	Thu 5/21/15	31		Reclamation, Joint PC
30	Environmental/Cultural Mitigation Workshop	15 days Thu 5/28/15	Wed 6/10/15	Wed 6/10/15	31		Reclamation, Joint PC
31	Finalize Project Description Including Mitigation	10 days Thu 6/11/15	Wed 7/1/15	Wed 7/1/15	31SS	37	Reclamation, Joint PC
32	Preliminary Cost Update	15 days Thu 6/11/15	Wed 7/1/15	Wed 7/1/15	31SS	37	Reclamation, Joint PC
33	Modeling Assumptions	40 days Thu 6/28/15	Wed 7/22/15	Wed 7/22/15	28	35SS	Reclamation, Joint PC
34	Identify analytical models & methods	15 days Thu 6/28/15	Wed 6/17/15	Wed 6/17/15	28	35SS	Reclamation, Joint PC
35	Specify baseline assumptions (with & w/o project)	15 days Thu 6/28/15	Wed 6/17/15	Wed 6/17/15	34SS	37	Reclamation, Joint PC
36	Compare & Display Alternatives' Effects	15 days Thu 7/2/15	Wed 7/22/15	Wed 7/22/15	32, 35	50	Reclamation, Joint PC
37	Preliminary Evaluation of Benefits and Costs	15 days Thu 7/2/15	Wed 7/22/15	Wed 7/22/15	32, 35	50	Reclamation, Joint PC
38	PHASE 2 Activities	430 days? Fri 5/1/15	Thu 12/22/16	Thu 12/22/16	16	51	Reclamation, Joint PC
39	Determine sequence of releases	5 days Fri 5/1/15	Thu 5/7/15	Thu 5/7/15	16	62, 64	Reclamation, Joint PC
40	Confirm change Lead Agency for CEQA?	1 day? Fri 5/1/15	Fri 5/1/15	Fri 5/1/15	16		Reclamation, Joint PC
41	Model New Alternative	105 days Mon 6/7/15	Fri 10/23/15	Fri 10/23/15	28	44	Reclamation, Joint PC
42	Identify Analytical Models and Methods	15 days Mon 6/7/15	Fri 6/19/15	Fri 6/19/15	28	46FF	Reclamation, Joint PC
43	Specify baseline assumptions (w/ and w/o project)	15 days Mon 6/7/15	Fri 6/19/15	Fri 6/19/15	28	46FF	Reclamation, Joint PC
44	CALSIM Model for new alternative	60 days Mon 6/22/15	Fri 9/11/15	Fri 9/11/15	42	45, 46	Reclamation, Joint PC
45	Perform Supplemental Modeling (SALMOD, Hydropower, etc)	20 days Mon 9/14/15	Fri 10/9/15	Fri 10/9/15	44	48FF	Reclamation, Joint PC
46	Perform Economics Modeling	30 days Mon 9/14/15	Fri 10/23/15	Fri 10/23/15	44, 43FF, 45FF	51, 52	Reclamation, Joint PC
47	Update feasibility-level design & cost estimate (MEDALPP/PrelimLEDDPA)	180 days Thu 6/28/15	Wed 2/9/16	Wed 2/9/16	27	53	Reclamation, Joint PC
48	Evaluate Value Planning Study Recommendations	115 days Thu 6/28/15	Wed 11/4/15	Wed 11/4/15	27	53	Reclamation, Joint PC
49	Develop Environmental/Cultural Mitigation Cost Estimate	30 days Thu 7/2/15	Wed 8/12/15	Wed 8/12/15	27	52	Reclamation, Joint PC



Critical
 Critical Split
 Critical Progress
 Task
 Summary Progress
 Summary
 Summary

Baseline
 Baseline Split
 Baseline Milestone
 Milestone
 Task
 Summary Progress
 Summary

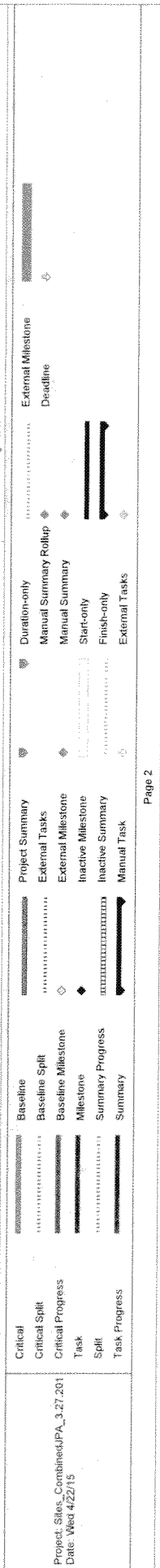
Project Summary
 External Tasks
 External Milestone
 Inactive Milestone
 Inactive Summary
 Manual Task

Duration-only
 Manual Summary Rollup
 Manual Summary
 Start-only
 Finish-only
 External Tasks

External Milestone
 Deadline

Project: Sites_Combined_JPA_3.27.201
 Date: Wed 4/22/15

ID	Task Name	Duration	Baseline Start	Baseline Finish	Predecessors	Successors	Resource Names
50	Refined designs & estimated costs (including Mitigation & Enhancement)	120 days	Thu 7/23/15	Wed 1/6/16	27,37	53,52	Joint Powers Authority
51	Evaluation of Alternative Performance	20 days	Mon 10/26/15	Fri 11/20/15	39,46	55	Joint Powers Authority
52	Updated benefits & costs analysis	20 days	Thu 1/1/16	Wed 2/3/16	46,50,49	53,90	Joint Powers Authority
53	Refined cost allocation for recommended plan (NED, LPP, Prelim LEDPA)	20 days	Thu 2/4/16	Wed 3/2/16	52,48,50	55,56,57,59,58	Joint Powers Authority
54	Prepare Admin Draft Feasibility Report for Review	40 days	Thu 2/18/16	Wed 4/13/16			Joint Powers Authority
55	FR-Production and Editing - Chapters, Appendices & Technical Reports	30 days	Thu 3/3/16	Wed 4/6/16	53,51	60	Joint Powers Authority
56	FR-Prepare Executive Summary for Preliminary Feasibility Report	25 days	Thu 3/3/16	Wed 4/6/16	53	60	Joint Powers Authority
57	FR-Identify Draft NED Plan, Locally Preferred Plan (LPP) & LEDPA	15 days	Thu 3/3/16	Wed 3/23/16	53	60	Joint Powers Authority
58	FR-Describe Rationale for Recommended Plan	15 days	Thu 3/3/16	Wed 3/23/16	53	60	Joint Powers Authority
59	FR-Describe Implementation Responsibilities	15 days	Thu 3/3/16	Wed 3/23/16	53	60	Joint Powers Authority
60	FR - Publish Admin Draft Report	0 days	Thu 2/18/16	Thu 2/18/16	55,56,57,58,59,74	74	Joint Powers Authority
61	Prepare EIRIS	290 days	Thu 7/21/15	Wed 8/10/16			
62	Develop Comment Responses to EIR Comments	30 days	Thu 7/21/15	Wed 8/12/15	31,40	66	
63	Confirm NEPA/CEQA Baseline Conditions	20 days	Thu 7/21/15	Wed 7/29/15	31	64	
64	Prepare Administrative Draft EISEIR	130 days	Thu 7/30/15	Wed 1/27/16	31,40,63	65,66,67,68	
65	Draft Environmental mitigation & monitoring plan	15 days	Thu 11/28/15	Wed 12/16/15	64,65,66,67,68	68	
66	Solicitor Review (NEPA & Non-Federal Legal Review - CEQA)	20 days	Thu 1/28/16	Wed 2/24/16	64,65,62	67,68	
67	Revised Administrative Draft EISEIR based on Solicitor Review Comments	45 days	Thu 2/25/16	Wed 4/27/16	66	68	
68	Solicitor and Cooperating Agency/Responsible Agency Review of 2nd Draft EISEIR	30 days	Thu 4/28/16	Wed 6/8/16	66,67	69,70	
69	Prepare Pre-Print Draft EISEIR	20 days	Thu 6/9/16	Wed 7/6/16	68	70,71	
70	Final review of Pre-Print Draft EISEIR	10 days	Thu 7/7/16	Wed 7/20/16	69	71	
71	Revised Pre-Print Draft EISEIR	15 days	Thu 7/21/16	Wed 8/10/16	69,70	72,79	
72	Draft EISEIR complete	0 days	Thu 8/10/16	Wed 8/10/16	71	96,74	
73	Review Process for Feasibility Study and EIRIS	41 days	Thu 8/11/16	Thu 10/6/16			
74	Technical team & regulatory Agencies	20 days	Thu 8/11/16	Wed 9/7/16	60,72	75	
75	Executive review (State, Federal & JPA)	20 days	Thu 9/8/16	Wed 10/5/16	74	76,78,93	
76	Reclamation Commissioner & DOI Secretary review (& JPA & State Equivalent)	1 day	Thu 10/6/16	Thu 10/6/16	75	78,93	
77	Public Distribution EISEIR	96 days	Thu 8/11/16	Thu 12/22/16			
78	Prepare Notice of Availability (NOA) press release & con plan/Federal Lead review	50 days	Fri 10/7/16	Thu 12/21/16	68,75,76	80,85	
79	Prepare Notice of Completion (NOC)	5 days	Fri 10/7/16	Thu 12/21/16	71	96	
80	File Draft EIS/R with EPA & State Cleaninghouse	5 days	Fri 10/7/16	Thu 10/13/16	78,85	81,85	
81	Publish NOA in Federal Register & release to public	5 days	Fri 10/7/16	Thu 10/13/16	80,85	83,82	
82	Mailing/posting same day as NOA	0 days	Thu 10/13/16	Thu 10/13/16	81	95	
83	Public review period, hearings, meetings	50 days	Fri 10/14/16	Thu 12/22/16	81	96	
84	Operations Plan/Monitoring and Assurances Plan	339 days	Fri 5/28/15	Tue 9/13/16			
85	Develop Annotated Outline of Operations	60 days	Thu 5/28/15	Wed 8/19/15	28	86,87	
86	Develop Operations Plan	130 days	Wed 8/26/15	Tue 2/23/16	85	88	
87	Develop Monitoring and Assurances Plan	130 days	Wed 8/26/15	Tue 2/23/16	85	88	
88	Review of Operations Plan and Monitoring and Assurances Plan	30 days	Wed 8/26/15	Tue 4/5/16	86,87	93	
89	Financial Plan	40 days	Wed 7/20/15	Tue 9/13/16			
90	Develop Financial Analysis & Plan	20 days	Wed 7/20/15	Tue 8/16/16	52,6	91	
91	Review of Financial Plan	20 days	Wed 8/17/16	Tue 9/13/16	90	93	
92	CWC Package	55 days	Fri 10/7/16	Thu 12/22/16			
93	Prepare CWC Package	15 days	Fri 10/7/16	Thu 10/27/16	76,88,75,91	94	
94	Submit CWC package	1 day	Fri 10/28/16	Fri 10/28/16	93	96	
95	Public review period, hearings, meetings	50 days	Fri 10/14/16	Thu 12/22/16	82	96	
96	Complete Phase 2 - Sites(NODOS) Draft EIS/R & Draft Feasibility Report	0 days	Thu 12/22/16	Thu 12/22/16	94,95,83,72,79		
97	Sites JPA Board Meetings	160 days	Wed 5/13/15	Wed 12/9/15			
98	Sites JPA Board Meeting (Westside Water District, Williams)	0 days	Wed 5/13/15	Wed 5/13/15			



ID	Task Name	Duration	Baseline Start	Baseline Finish	Predecessors	Successors	Resource Names	2016														
								2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter								
99	Sites JFA Board Meeting (GCID, Willows)	0 days	Wed 6/3/15	Wed 6/3/15				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
100	Sites JFA Board Meeting (Yolo County FCWCD, Woodland)	0 days	Wed 7/1/15	Wed 7/1/15										6/3	7/1							
101	Sites JFA Board Meeting (TCCA, Willows)	0 days	Wed 8/5/15	Wed 8/5/15											8/5							
102	Sites JFA Board Meeting (Westside Water District, Williams)	0 days	Wed 9/2/15	Wed 9/2/15												9/2						
103	Sites JFA Board Meeting (GCID, Willows)	0 days	Wed 10/7/15	Wed 10/7/15													10/7					
104	Sites JFA Board Meeting (Yolo County FCWCD, Woodland)	0 days	Wed 11/4/15	Wed 11/4/15														11/4				
105	Sites JFA Board Meeting (TCCA, Willows)	0 days	Wed 12/9/15	Wed 12/9/15															12/9			

Project: Sites_CombinedJFA_3_27_201	Date: Wed 4/22/15	Critical	Baseline		Project Summary	Duration-only	External Milestone
			Baseline Split	External Tasks			
		Critical Split	Baseline Split	External Tasks	Manual Summary Rollup	Manual Summary	External Milestone
		Critical Progress	Baseline Milestone	External Milestone	Manual Summary	Manual Summary	External Milestone
		Task	Milestone	Inactive Milestone	Start-only	Start-only	External Milestone
		Split	Summary Progress	Inactive Summary	Finish-only	Finish-only	External Milestone
		Task Progress	Summary	Manual Task	External Tasks	External Tasks	External Milestone

8

**Project Management Plan
North of Delta Offstream Storage
(NODOS) Investigation and
Supporting Documents
(May 26 2015 DRAFT)**

**Division of Planning
Mid-Pacific Region
Bureau of Reclamation & the Sites Project Joint Powers Authority**

Last Update May 27. 2015

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1. Introduction and Background

1.1 Purpose of the Project Management Plan

This Project Management Plan (PMP) is intended to clearly define the roles, responsibilities, procedures, and processes that will result in completion of the North-of-the-Delta Off-stream Storage (NODOS) Investigation draft Feasibility Report and Environmental Impact Statement/Environmental Impact Report (EIS/EIR). Report Along with additional supporting documents, these will inform Federal, State, and local decision making with respect to determining potential public investment in water management actions that may be recommended, proposed, or approved at the conclusion of the investigation.

This PMP establishes the procedures and processes for systematically implementing decisions regarding communication, coordination, direction, documentation, execution, and overall monitoring and control of the NODOS Investigation, referred to as the Project within this PMP.

This PMP is a living document, designed as a tool for the Reclamation and the Sites Joint Powers Authority (JPA), to use throughout the duration of the Project. Any suggestions for changes or corrections need to be taken to the respective Project Managers (PM) so the team can get timely updates.

The scope of the PMP includes activities required to complete all aspects of the Project, as well as management processes to be used during the various phases. Items may be added, modified, or deleted as the Project details are developed and elaborated upon over time. Details of the PMP shall be aligned to adjust to the Project schedule, scope, and cost. The Memorandum of Understanding (MOU) between the Sites JPA and Reclamation will serve as the baseline framework agreed to by the MOU parties. The scope of this PMP must be within the limits established by the MOU, and is attached to the MOU.

1.2 Project Background and Activities

The NODOS Feasibility Study was authorized in 2003 in Public Law (P.L.) 108-7 to study potential off-stream water storage north of the confluence of the San Francisco Bay with the Delta of the Sacramento and San Joaquin Rivers (Bay-Delta). Study authority was subsequently reiterated in the CALFED Bay-Delta Authorization Act of 2004. The CALFED Programmatic Record of Decision (ROD) (2000) signified completion of the environmental impact analysis for the CALFED Program. Subsequently, a number of investigations were initiated to achieve specified objectives from CALFED. These include a range of actions balancing conservation and water supply, and include a comprehensive, multi-agency approach to managing Bay-Delta resources. The CALFED study investigated and screened 52 potential surface water storage projects for their abilities to contribute to meeting goals. NODOS was identified as one of five

alternatives that had compatibility with other goals. Further investigation supported the location of a reservoir in the Antelope Valley near the historic settlement of Sites, CA, in large part because this location had fewer direct environmental impacts compared with other locations. NODOS was eventually made a priority by State and Federal water managers. Funding for continued analysis and planning has been provided through the CALFED Bay Delta Restoration fund.

Previous studies leading to the present moment include:

- *Initial Alternatives Information Report* completed in 2006 that narrowed the range of possible locations for a new off stream reservoir
- *Plan Formulation Report*, completed in 2008, which supported a decision to proceed based on the conclusion that there are potentially feasible alternative plans that could be considered in the Federal interest as a partial solution to the California water storage challenge
- *Administrative Draft Feasibility Report*, completed in 2011, which included three alternatives (A, B, and C) with various configurations and supporting facilities, including two different size reservoirs
- *Progress Report*, completed in 2013, updated analysis and summarized the results of previous studies
- *Value Planning*, completed in 2012, identified various cost-saving measures for proposed facilities, including construction methods, and road and dam designs
- *Design, Estimating and Construction* review in 2014 identified additional cost savings and technical issues that need resolution before a final feasibility report is completed
- *Preliminary Design and Cost Estimating Report*, completed by the California Department of Water Resources (DWR) in May 2014
- *Preliminary Draft EIS/EIR*, completed by DWR (and reviewed by Reclamation) in May 2014
- *Sites Reservoir Alternatives Evaluation*, prepared for Sites JPA by URS, November 2014

The Sites JPA has been investigating the potential for one or more additional operational and scaled down facility options that can better suit the needs of likely water purchasers in the Sacramento Valley, and will attract financial partners locally and from farther away. Completion of the feasibility report was put on hold in 2014 to provide time for the Sites JPA to develop new options and recruit financial partners.

The existing alternatives (A, B, and C) include common core facilities envisioned at the preferred Sites Reservoir location as follows:

- 1.3-1.8 million acre foot (maf) reservoir capacity (12-14,000 acre surface area)
- Use of Tehama-Colusa and Glenn-Colusa canals for conveyance
- A new pipeline and pump station connecting to the Sacramento River
- Hydropower facilities, possibly including pump back capability
- Two main dams and multiple “saddle” dams
- A new road and a bridge to maintain connection and emergency services for communities west of the reservoir with I-5
- Recreation facilities around the new reservoir
- In addition, off-site mitigation will likely be required for loss of habitats, including vernal pools, grasslands, streams, and oak woodlands

Various operating scenarios are matched to each alternative. The new alternative (D or E) is presently envisioned as a pared down set of facilities along with a 1.8 MAF reservoir.

Study Areas

The Project, including all alternatives still under consideration, is located in Glenn and Colusa Counties in the central-west Sacramento Valley near the town of Maxwell, California. All of the facilities associated with the Project are in this vicinity, known as the *Primary Study Area*. The Primary study area stretches from the Sacramento River on the east, to the first line of foothills of the Coast Range on the west, and from Butte City in the north to Colusa in the south (see Figure 3). The Antelope Valley, location of the proposed 14,000 acre reservoir, is a sparsely populated rangeland landscape with a few seasonal streams coursing through it (Figure 1).



Figure 1: Antelope Valley, Preferred location for the NODOS/Sites Reservoir Alternatives



Figure 2: Proposed location for the Sites Dam under all remaining and anticipated alternatives

The *Secondary Study Area* includes facilities that would be impacted operationally if the Project is developed. For example, changes to stream flows could be experienced both up and downstream of the *Primary Study Area*, extending all the way to Shasta Dam in the north and the Bay Delta in the south. The *Extended Study Area* includes the entire Central Valley and State Water Projects, which may be subject to potential additional operational changes.

Figure 1. NODOS Primary Study Area

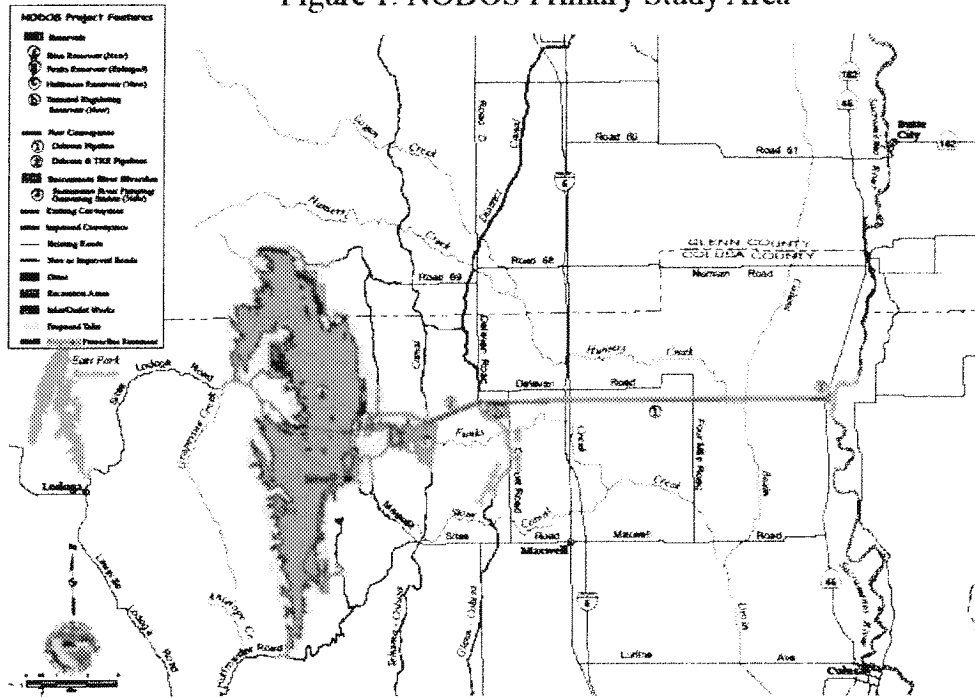


Figure 3: Map of the NODOS Primary Study Area

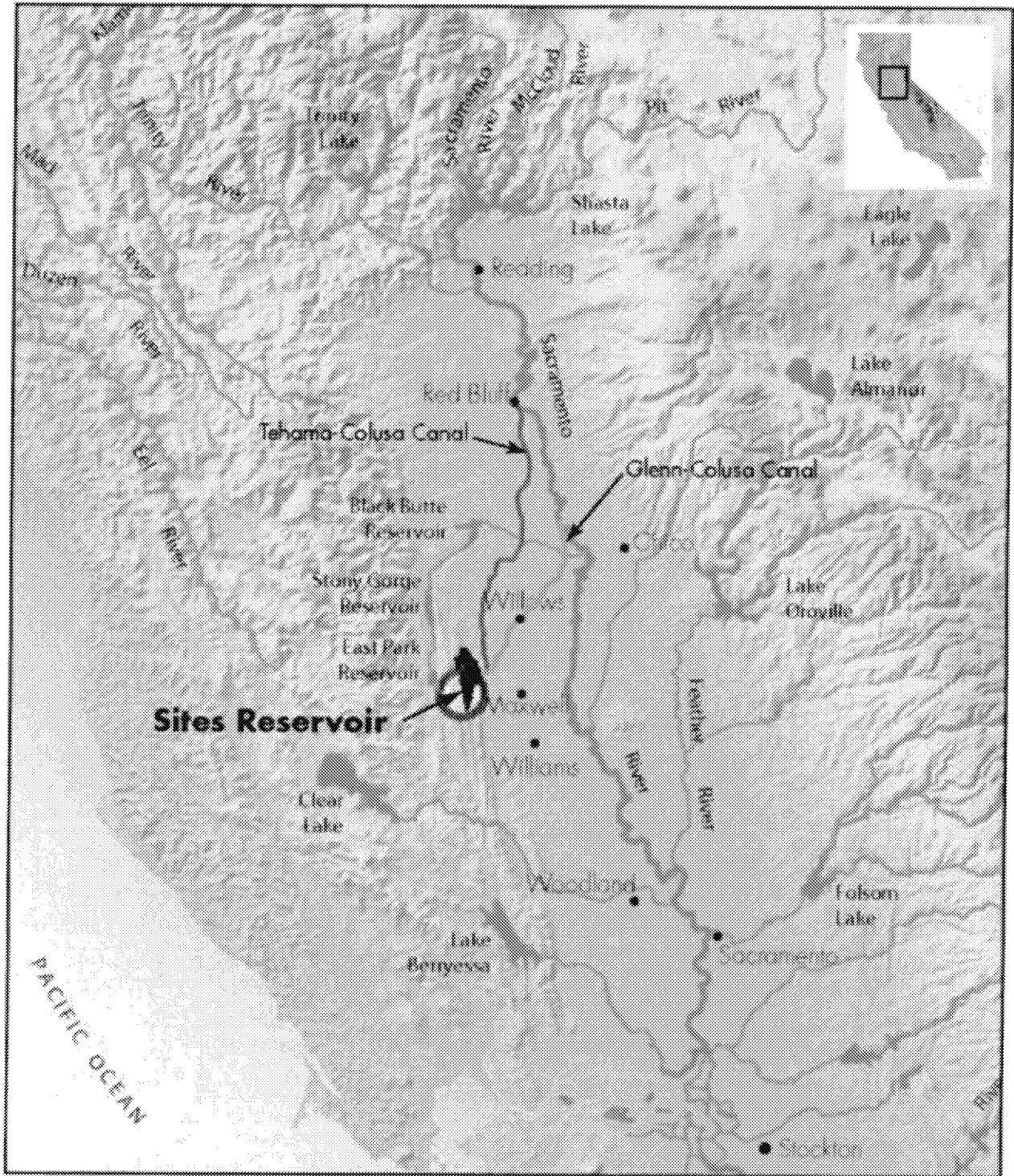


Figure 4: Secondary Study Area (From Sites JPA web site)

2. Study Authorizations

Reclamation received feasibility study authority for the NODOS Investigation in 2003 (P.L. 108-7). Subsequently, with the enactment of the CALFED Bay Delta Authorization Act in 2004 (P.L. 108-361), the Secretary of the Interior was authorized to carry out activities that included planning and feasibility studies for a Sites Reservoir in Colusa County.

DWR received authorization to study NODOS beginning in 1996 under State of California Proposition 204, the *Safe, Clean, Reliable Water Supply Act*, which provided funding for feasibility and environmental investigations of potential off-stream storage projects upstream from the Delta.

After completion of the CALFED Bay-Delta Program Final EIS/EIR and signing of the CALFED Bay-Delta Programmatic ROD in 2000, the Preferred Program Alternative in the CALFED ROD identified the NODOS Investigation as one of five potential surface-water storage projects to be considered in project-specific feasibility and environmental reports. When the NODOS Investigation, Feasibility Report, and EIS/EIR are completed as described herein, then additional Federal and/or State decision making, approvals, and construction authorizations would be required before implementation of any multiple purpose NODOS surface storage project.

3. PMP Scope & Project Objectives

3.1 Project Scope

The scope is to complete the *draft Feasibility Report and draft EIS/EIR* by October 1, 2016. A final EIS/EIR, final Feasibility Report, and supporting studies may be added to this Project Management Team (PMT) at a later time, using the Change Management Plan process included later in this PMP.

The deliverables are:

- Signed MOU between Sites JPA and Reclamation, which includes this PMP and Schedule as attachments. Definition of one or more new alternatives that incorporate recommendations of previous analyses.
- Technical memoranda, including modeling, updating, cost estimates, and benefits analysis of new Alternative(s) for inclusion into the draft EIS/EIR and draft Feasibility Report.
- Review, revisions, and release of the draft EIS/EIR and Feasibility Reports to the California Water Commission as part of an application package for funding, and to the public for review and comment.
- After completion of the draft Feasibility Report and EIS/EIR, additional activities and deliverables may be identified to complete remaining requirements in compliance with

planning procedures, NEPA, CEQA, and other pertinent laws and policy. For example, it will be necessary to conduct public hearings during the formal public review period for the draft EIS/EIR, followed by responses to public comments, preparation and processing of the final feasibility report and EIS/EIR, and reviews and approvals by the Secretary of the Interior and the U.S. Office of Management and Budget before provision to Congress for Federal decision-making.

This PMP will be updated to include additional items at a later time. Scope changes will need to be approved using the Change Management Plan process (Appendix E) and approval of the Executive Steering Committee (ESC).

4 Staffing Plan - Roles and Responsibilities

4.1 Participating Agencies

The Project will be undertaken by the Sites JPA and Reclamation with input from Cooperating Agencies. Sites JPA will have the role of managing a consultant team contracted to complete the draft Feasibility Report, draft EIS/EIR, and public outreach necessary to this effort. Reclamation will have technical review responsibility to insure the work products meet Federal standards. In addition, Reclamation will be responsible for coordination with other Federal agencies. The Sites JPA will coordinate with DWR to define their role, including technical review.

Reclamation has appointed a PM to work with the Sites JPA and its consulting team and to insure timely and thorough review of work products. The PM will be responsible for coordinating the work of Reclamation staff and lead Reclamation's participation in the Project Management Group (PMG) as described later in this document. Sites JPA will appoint its own project manager or team to oversee the work of the consultants and produce the draft Feasibility Report and EIS/EIR.

4.2 Organizational Breakdown Structure (OBS)

An OBS has been created to enable team members to easily identify the interagency and intraagency relationships among members, and to facilitate reviews and decisions. The OBS will include primary positions/individuals, their agencies, lines of authority (chains of command), and decision making. Relationships that are defined by contracts or agreements are also shown.

The OBS will be reviewed when any of the team lists are revised or new interagency agreements or authorities are signed, and a revised copy will be distributed. A phone and address list is provided and is updated as needed.

The OBS, along with the phone and address list, shows the Project management organization and participants.

Figure 1 – Sites(NODOS)Organizational Breakdown Structure

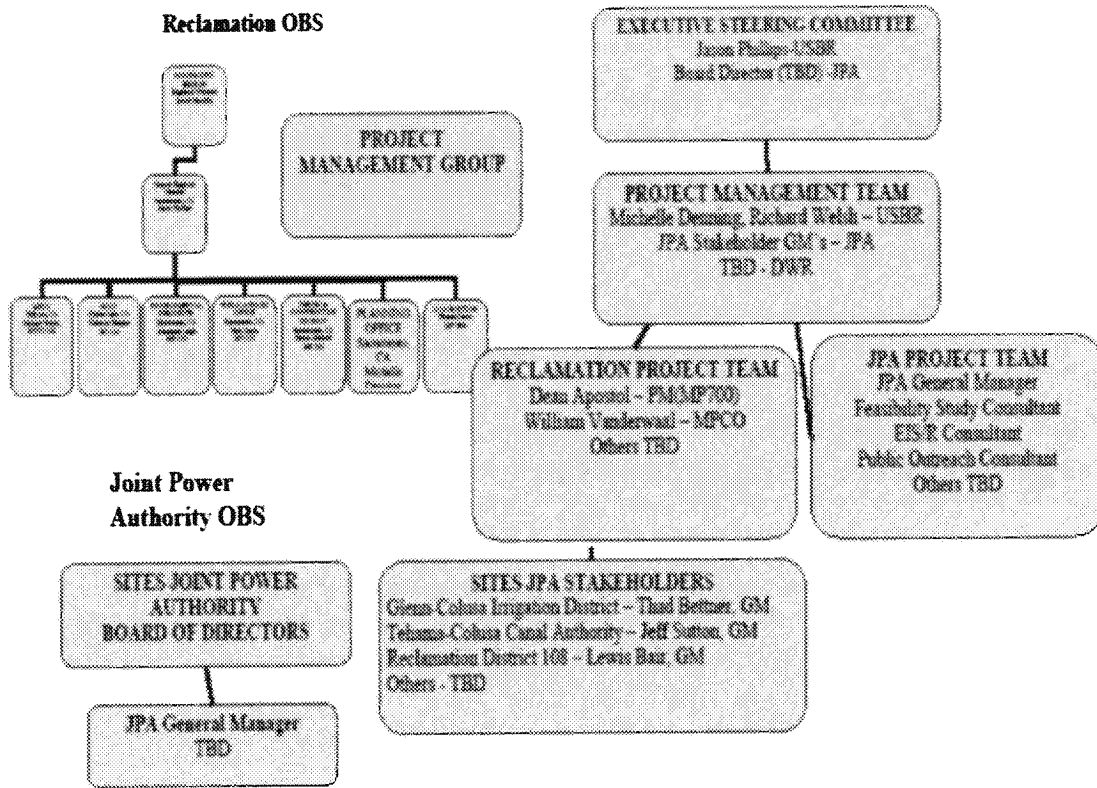


Figure 1: OBS Team Chart (Draft)

4.3 Project Management Organization

The Project Management Organization is shown in Figure 1. The management of the Project will be carried out by the following groups also shown in Figure 1.

- **Executive Steering Committee (ESC)** – Executive Management Level for Policy & Oversight
- **Project Management Team (PMT)** – Senior Management Level Oversight
- **Project Management Group (PMG)** – Project Management, Staff & Service Provider Coordination
- **Reclamation Technical Team (RTT)** - Provides technical review and consultation

4.3.1 ESC

The ESC consists of Executive Level Managers from the Sponsor Organizations, Reclamation, and the Sites JPA, who are able to provide sponsor-level decision-making authority. The ESC is intended to promote cooperation and collaboration and to resolve issues that cannot be solved at lower levels of the project structure.

Decisions by the ESC will be made by consensus and documented in writing. If there is a dispute that cannot be resolved by the ESC, it will be to the Reclamation Regional Director (or their designee), and the Sites JPA Chairman of the Board (or their designee).

The ESC will determine the frequency of meetings. Members may also attend the PMT meetings described below.

4.3.2 PMT

The PMT includes senior managers from Reclamation and the Sites JPA who have decision-making authority and oversee staff assigned to the project. The primary purpose of the PMT is to provide overall guidance and leadership, to ensure that representatives from each organization work towards common goals, and to make decisions that cannot be made at the PMG level. The PM's will elevate issues beyond their authority or ability to resolve to the PMT for consideration and resolution.

The PMT will meet approximately once per month during the initial stages of the Project, then as frequently as necessary during subsequent stages. The PMT will provide overall management guidance; review major findings, conclusions, recommendations, budget and schedule changes, track progress, and make major decisions as needed.

4.3.2.1 *Structure and Membership*

The PMT shall include:

Project Management Team				
Name	Sponsor Org.	Title	Office/Org.	Office Phone
Michelle Denning	Reclamation – Chair Person	Regional Planning Officer	MP700, Planning	916-978-5062
Richard Welsh	Reclamation	Regional Construction Engineer	MPCO-100, Mid-Pacific Construction Office	530-934-7066
Thad Bettner	Sites JPA	General Manager	Glenn-Colusa Irrigation District	530-588-3450
Jeff Sutton	Sites JPA	General Manager	Tehama-Colusa Irrigation District	530-934-2125
Lewis Bair	Sites JPA	General Manager	Reclamation District #108	

4.3.3 PMG

The PMG includes representatives of the Sponsor Organization Project Teams and is overseen by the Project (see OBS). The PMG is a staff-level working group that carries out and/or coordinates or manages work products. The PMG will meet on a frequent basis, weekly at the Project outset, and as needed over time. The Sites JPA and their consulting team will lead the PMG meetings, including preparation of the agenda, facilitation, and note taking. The purpose of these meetings is to track project progress, and identify and answer technical questions as they arise.

4.3.3.1 PMs

The PM’s are the focal and dissemination point for the flow of information between Project team members and decision making officials. The PM’s provide memos and briefings to the PMT as needed. The PM’s will jointly take policy or other issues that cannot be resolved at the PMG level to the PMT. PM’s will provide project oversight for their respective organizations. The PM’s are responsible for resolving issues with help from technical team members. They have decision making authority within the limits defined by their respective organizations. All issues within the technical team should first be brought to the PMs.

4.3.3.2 Reclamation Technical Team (RTT)

The RTT is a subset of the PMG and includes the PM and a multi-disciplinary members who provide technical advice and review on engineering, environmental, operational, and other topic areas. Members may be added or deleted as needed during the duration of the project.

The RTT members will be expected to maintain project familiarity within their core discipline, and to review and comment on work products of the consulting team periodically. It is

anticipated that a subset of the RTT will have a more significant role and be called on more frequently during the Project. The initial RTT will include:

DRAFT

NODOS RECLAMATION TECHNICAL TEAM (DRAFT)			Email	Phone
*Denotes core team				
*Dean Apostol	MP 700	Project Manager/Landscape Architect	dapostol@usbr.gov	916-978-5072
Carolyn Bragg	MP-150	Environmental	cbragg@usbr.gov	916-978-5483
Adam Nickels	MP-150	Environmental	anickels@usbr.gov	916-978-5053
*Dan Cordova Joshua Black	MP-150	F&W Service Coordinationl	dcordova@usbr.gov	916-978-5483
*Louis Moore	MP-140	Public Affairs	wmoore@usbr.gov	916-978-5706
Joel Sturm	MP-200	Engineering	jsturm@usbr.gov	916-978-5305
Heidi Schuchbauer	MP-400	Real Estate	hschuchbauer@usbr.gov	916-978-5265
*	MP-400	Native American/Tribal relations		
Scott Springer	MP-400	Recreation	sspringer@usbr.gov	916-978-5206
Tim Rust	MP-400	Refuge	trust@usbr.gov	916-978-5516
Bob Colella	MP-400	Water Rights	rcolella@usbr.gov	916-978-5256
David Mooney	MP-400	CVPIA	skaplan@usbr.gov	916-978-5190
*Shelly Hatleberg	MP-150400	NEPA	shatleberg@usbr.gov	916-978-5050
*Dean McLeod	MP-700	Economics	dmcleod@usbr.gov	916-978-5088
Jim Cornwell	MPCOMP-700	Modeling	jcornwell@usbr.gov	916-978-5077

*Bill Vanderwaal	MP-700MPCO	Project Engineer	wvanderwaal@usbr.gov	530-934-1371
Mike Moseley	MP-700	Water Quality	mmoseley@usbr.gov	916-978-5109
Michael Tansey	MP-700	Climate Change	mtansey@usbr.gov	916-978-5197
Russ Yaworski	CVO	Modeling	ryaworsky@usbr.gov	916-979-0268
Jeff Sandberg	CVO	Modeling	jsandberg@usbr.gov	916-979-2707
Bonnie VanPelt	CCAO	Environmental	bvanpelt@usbr.gov	916-989-7127
*Larry Ball	NCAO	Operations	lball@usbr.gov	530-229-5358
Craig Muehlberg	BDO	Policy	cmuehlberg@usbr.gov	916-414-2403
*John Hannon	BDO	Fisheries	jhannon@usbr.gov	916-978-5524
Lenny Grimaldo	BDO	Fisheries	lgrimaldo@usbr.gov	916-414-2414
Blair Greimann	TSC	Sedimentation	bgreimann@usbr.gov	303-445-2563
Susan Black	TSC	Socioeconomics	sblack@usbr.gov	303-445-2705
Kaylee Allen	SOL	Legal	kallen@sol.doi.gov Ktanaka@sol.gov	916-978-5686

4.3.3.3 Sites Joint Power Authority Project Team (JPAPT)

The Sites JPAPT includes Sites JPA staff, representatives, and consultants. It shall include and be led by the Sites JPA's designated PM.

The representatives are responsible for participating on the Sites JPAPT to report on their area of responsibility and to coordinate activities related to their areas of expertise. The initial Sites JPAPT will consist of the following:

Organization	Name	Area of Responsibility
Sites JPA	TBD	General Manager - PM
AECOM/URS	Jeff Herrin	Consultant for Feasibility Report
CH2MHILL	Mark Oliver	Consultant for EIS/EIR
To Be Named		Public outreach consultant

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5. Schedule

5.1 Baseline Schedule and Initial Milestones

A Baseline Schedule has been prepared and presented to the PMT for review and acceptance. Upon acceptance, this overall project schedule shall be updated and presented at each PMT meeting. The Project begins in May 2015 and runs through the end of 2016 (calendar year).

Additional contract specific schedules may be developed and incorporated as needed into the overall project schedule.

Summary of the phases in the Project:

Phase 1 Develop and Evaluate New Alternative(s)

Entry Milestone (May 2015): Complete all agreements and organize team

Exit Milestone (August 2015): Compare & display alternatives

Phase 2 Prepare Draft EIS/EIR and Draft Feasibility Report

Entry Milestone August 2015): Determination of release sequence

Interim Milestone (October 2016): Water Commission Funding Package Submitted

Exit Milestone (December 2016): Public Review Period Complete

Subsequent phases will be defined when the Project Scope is revised at a future date to include Final EIS/EIR and Final Feasibility Report. The entry milestone will be responding to Public Comment that is executed at the end of Phase 2.

5.2 Schedule Updates

The PM's will monitor progress and update the schedule to show the current status of the Project prior to each PMT meeting. Other members of the PMG will be responsible for providing input to the PM's on specific technical issues. The PM's authority to grant additional schedule time is addressed in the Change Management Plan (Appendix E).

6. Budget

6.1 Funding

Funding for the Project comes from Reclamation, and investors through the Sites JPA; DWR has also provided funding in the past.

6.2 Budgets

The Total Project Baseline Budget will be established by the PMT, including Contingencies and Management Reserves. Annual budgets will be based on the Federal fiscal year, which is from October 1 to September 30.

Each PM is responsible for overall management of the Project budget for their agencies.

For the purpose of estimating the Total Project Cost, the start date for tracking costs will be based on execution of this PMP.

A detailed Total Project Baseline Budget will be included in Appendix D when it is available.

Budgets will be broken down by project phase into the following cost categories:

- Agency Labor & Expenses
- Contracts or Service Agreements
- Other Costs

6.3 Cost Tracking

Actual costs assigned to the Project will be tracked on a monthly basis by each PM for their respective Project Team. The PM will have the authority to grant additional funds from the contingencies and management reserve for changes involving scope and deliverables pertaining to their Project Team. The amount authorized by the PM to grant is addressed in the Change Management Plan (Appendix E).

Cost status will be reported to the PMT at each PMT meeting.

7. Risk Management Plan (RMP)

The PMG will analyze the risks to the Project and develop a RMP. A risk register will be kept by the PM; the PMG will review and update it for each PMT meeting.

7.1 Risk Management

7.1.1 Introduction

Project Risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on the schedule, cost, scope, and/or quality of a Project. Risk Management shall be conducted on a regular basis and in a manner that seeks to deter undesirable situations from arising, detect events that are not controllable, and that enables the project team to take advantage of any beneficial opportunities that may arise.

7.1.2 Purpose

The purpose of this RMP is to identify risks to the Project in advance so that the risk can be analyzed, evaluated, prioritized, and if possible mitigated. Mitigation or risk response planning can be completed before a risk impacts the Project. Risk response planning is developing options and actions to enhance opportunities and to reduce threats to Project objectives. A second purpose of this plan is to provide a means to document risk management activities, particularly the implementing of a response to a risk.

7.1.3 Scope

The scope of this RMP is not intended to describe all of the risks up front. Risk identification and analysis will be a continuous activity. As the Project details are elaborated, risks will be identified and analyzed.

7.2 Roles and Responsibilities

7.2.1 PMs

The respective PMs for this Project have primary responsibility for overseeing risk management. The PMs are responsible for maintaining and revising the PMP to respond to risk. The PMs may arrange for an independent risk management audit if approved by the PMT.

7.2.2 PMG Members

Each PMG member is responsible for identifying, reporting, and helping to characterize risks within their technical areas of expertise. PMG members are also responsible for implementing risk mitigation measures, as assigned.

7.2.3 Authorities

See the procedures for levels of authority for implementing risk mitigation actions.

7.3 Procedures

7.3.1 Risk Identification

Risk identification is an integral part of the progressive elaborative nature of the development of a large public works project. To be effective, risk assessment needs to be continuous throughout a project. A risk register will be used as a guide for the information needed to describe and log in a risk. As a minimum the risk will be described and qualitative analysis performed. Qualitative analysis helps prioritize risks for further action.

7.3.2 Logging Risks in the Register

The PMs will maintain a Risk Assessment Register and will periodically update the register. The PMG or other select individuals shall include discussion of risks in their regular meetings, and will include a quarterly meeting dedicated to conducting a risk identification and assessment session to facilitate the updating of the register.

7.3.3 Risk Response and Authorities

The following positions have the authorities identified to implement responses to risks, based on the priority assigned:

Low – PMG member, with written (e-mail) communication documentation to the PM

Medium – PM, with written communication to the PMT

High or Very High – PMT

7.3.4 Risk Monitoring and Control

7.3.4.1 Reviews and revisions

The RMP shall be reviewed and updated at a minimum, quarterly. Particular attention shall be paid to the probability of a risk happening because of the time-sensitive nature of the impact a risk can have on the Project.

7.3.5 Risk Documentation

This will be done through a Risk Register, with supplements and attachments.

8. Coordination and Communication Plan

8.1 Project Stakeholders

For the purposes of this Project, Stakeholders are defined as any individual, organization or entity that is not otherwise listed as or associated with a Project Sponsor (e.g. external to the Project). A Public Outreach and Stakeholder Plan will be developed by the Sites JPA during Phase 1.

8.2 General Communication Plan

The PM(s) are the focal point for all communication and dissemination of information. The PMs for each Project Team will prepare periodic status reports/memos, not less than monthly. These reports/memos will be made available to the PMT and PMG. The reports will note the schedule, budget, risk, and any changes in the Project.

8.3 Project Meetings

8.3.1 PMT Meetings

The PMT will meet on a monthly basis initially, then on an as-needed basis. The Sites JPA will have primary responsibility for preparing the agendas and note taking. The agenda will be presented a minimum of 1 week prior to the PMT meetings.

8.3.2 PMG Meetings

The PMG will meet on a weekly basis initially, then as frequently as needed, but not less than monthly, for the duration of the project. The purpose of the PMG meetings is to provide coordination between the consultants, provide timely input and review from Reclamation, and ensure issues are addressed at the lowest possible level prior to elevation.

8.4 Public Affairs Plan

The Sites JPA will work with Reclamation to develop a Public Affairs Plan. Sites JPA will provide a consultant with expertise in public outreach and facilitation.

8.5 Project Team Contact Information

8.5.1 Reclamation Project Team

Name	Role	Org.	Phone Number	Cell Phone	E-Mail
Dean Apostol	Project Manager	MP-700	916-978-5072	916 207 1666	dapostol@usbr.gov
Bill Vanderwaal	Project Engineer	MPCO	530 934 1371		wvanderwaal@usbr.gov
Ron Ganzfried	Branch Manager	MP 700	916 978 5073		rganzfried@usbr.gov

8.5.2 Sites JPA Project Team

Name	Role	Org.	Phone Number	Cell Phone	E-Mail
TBD	Project Manager				

9. Quality Management Plan (QMP)

The PMG shall develop and implement a QMP within 1 month of the execution of this PMP. The QMP will be attached in Appendix F.

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10. PMT Signatures

By signing the respective line below the PMT member signifies their approval of the PMP and committal to the completion of the Project in accordance with the Scope, Schedule, and Budget presented in the PMP.

<PMT Members Organization>

<Name>, PMT Chair

Date

<PMT Members Organization>

<Name>, PMT Member

Date

<PMT Members Organization>

<Name>, PMT Member

Date

<PMT Members Organization>

<Name>, PMT Member

Date

<PMT Members Organization>

<Name>, PMT Member

Date

<PMT Members Organization>

<Name>, PMT Member

Date

Appendix A – Project Charter

The MOU between Reclamation, Sites JPA and the DWR is the Project Charter.

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Appendix B – Stakeholder Plan (SP)

1. Introduction

1.1 Purpose of the SP

The SP identifies the project “external” stakeholders, describes how they will be engaged, and details how their concerns will be addressed or incorporated into the project.

2. Listing of Stakeholders

2.1 Federal & State Government Agencies other than Reclamation and DWR

<NOTE: the information below has been left in as examples of how to complete this plan>

AGENCY	RECLAMATION POC	INTEREST
US Fish and Wildlife Service		USFWS provides the Biological Opinion that determines permits and environmental requirements including mitigation requirements.
California Water Quality Control Board		CAWQCB regulates the water quality permits.
Colusa County		County Issues the Hazardous Materials Business Plan.
Other		

2.2 Non-governmental Organizations other than Sites JPA

To be added

3. Incorporation into Project

3.1 Contacting Stakeholders

<NOTE: the highlighted information needs to be deleted and was left in for information on how to complete the document>

Government agencies will be contacted directly by the Reclamation personnel designated as the POC for them.

Engaging Non-governmental Organizations will be conducted by Area Office Staff and the PM with support as required by Regional and TSC staff. Individual land owners will be contacted by means of open houses to provide feedback and comment opportunities, and by mailer notification.

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Appendix C – Schedule

The Baseline Project Schedule will be inserted here upon Execution of the PMP.

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Appendix D – Total Project Baseline Budget

Reclamation's budget estimate for completing its share of the Draft Feasibility and EIS/EIR is TBD

The Sites JPA estimate for completing its share of the Draft Feasibility and EIS/EIR is: TBD

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Appendix E – Change Management Plan

All proposed changes to the Project Scope, Budget, and Schedule that are beyond the PM's authority as described below will be requested on the Change Request/Order form and authorized by the PMT members and/or Project Sponsor.

Scope

A change in Scope is defined as any change in work effort or products from that documented in the Scope of Work section of this document. Any change in Scope will be submitted to the PMT by the respective PM. The PMT shall review it and present it to the ESC for approval. The PM will provide analysis and recommendations to the PMT using the attached request form.

Budget

A change in budget is defined as any change in work effort or products from that documented in the Project's Baseline Budget. The PM's are authorized to commit up to but not exceed an additional 10 percent of the Project Management Reserve to any task activity in the Baseline Budget without first obtaining approval from the PMT. Any change in budget beyond that requires prior approval of the PMT using the attached request form. The PM will report any changes in the budget during their weekly project updates.

Schedule

A change in schedule is defined as any change in task duration from that documented in the Total Project Baseline Schedule. The PM's are authorized to commit up to but not exceed an additional 2 days of the Free Float to any task activity in the Baseline Schedule without first obtaining approval from the PMT. The PM's are not authorized to commit Total Float without prior approval of the PMT and any change in Free Float beyond 2 days requires prior approval of the PMT using the attached request form. The PM will report any changes in the Schedule during their weekly project updates.

Re-Baseline the Project

The Project will be re-baselined if the budget exceeds 10 percent variance from baseline or the Schedule exceeds 10 percent variance in any phase from baseline.

Change Request Form

Project: Sites (NODOS) Draft EIS/EIR & Draft Feasibility Report

Request No.: _____

Project Phase & Task Name: _____

Budget: Impact? \$ ____ Amount of Change in dollars.

Schedule: Impact? ____ Amount of Change in days.

Scope: Impact? Description below.

Description:

Include a description of the change either here or attached; this should also include a revised schedule and budget document.

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Appendix F – Quality Management Plan

Note- this section has been included as an example for use by the PMG to develop a QMP.

1.0 Introduction

1.1 Purpose of the Project Quality Management Plan

The Project Quality Management Plan documents the necessary information required to effectively manage project quality from project planning to delivery. It defines a project’s quality policies, procedures, criteria for and areas of application, and roles, responsibilities and authorities.

The Project Quality Management Plan is created during the Planning Phase of the project. Its intended audience is the project manager, project team, project sponsor and any senior leaders whose support is needed to carry out the plan.

For the Madera Canal Capacity Restoration Demonstration Project the Quality Management Plan will address the Environmental Permitting Process, the Design Process, the construction work, and the Monitoring Phase of the project. If Land Acquisition becomes necessary, or other changes to the project dictate a need, this plan will be modified to accommodate those changes.

2.0 Project Quality Management Overview

2.1 Organization, Responsibilities, and Interfaces

Name	Role	Quality Responsibility
<i>William R Vanderwaal</i>	<i>Project Manager</i>	<i>Overall Quality Assurance Monitoring and auditing products</i>
<i>Jeremy Lorberau</i>	<i>Design Team Lead</i>	<i>Ensure Reclamation Final Design Process is complied with – Auditing products and process</i>
<i>Randy Wyatt</i>	<i>Construction Field Engineer</i>	<i>Ensure Reclamation and Plan/Spec Standards & requirements are met during Construction – Auditing products and process</i>
<i>David Hyatt</i>	<i>Environmental Permitting Lead</i>	<i>Ensure necessary permits are obtained & adequately cover the work being planned – Auditing products and process</i>
<i>Doug Welch</i>	<i>Stakeholder Input on PMT</i>	<i>Provides input on project decisions that ensure the external stakeholder concerns are considered.</i>

2.2 Tools, Environment, and Interfaces

Tool	Description
------	-------------

<i>Milestones</i>	<i>Schedule incorporates Reclamation and Industry standard benchmarks and milestones.</i>
<i>Final Design Process</i>	<i>Reclamation established Final Design Process which incorporates reviews at regular points in the plans & specifications development.</i>
<i>Construction Management</i>	<i>Construction Inspection and Materials Testing in accordance with Reclamation D&S and the contract plans & specifications.</i>
<i>Weekly PMG Coordination</i>	<i>Regular monitoring of process progression and communication between the various support groups. It includes identifying issues and tracking their resolution.</i>
<i>Workload Management System Review</i>	<i>MP Region review of Purchase Request (PR) documents to ensure efficient acquisition process (if necessary).</i>

3.0 Project Quality Management

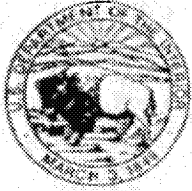
The Madera Canal Capacity Restoration Demonstration Project will incorporate the following methods of Quality Assurance/Quality Control (QA/QC):

- **Final Design Process:** This process was established by Reclamation to ensure thorough review is conducted on plans and specifications. This has proven to save on additional expenses to the government, reduce delays in schedules and minimize scope creep during contracts by enabling stakeholders and subject matter experts the opportunity to review, assess and identify issues or mistakes within the plan set. The reviews are conducted at set points within the development of the plan set.
- **Construction Management:** MP Construction Office personnel will be used to manage construction work, including inspection and materials testing. These personnel have been trained to inspect construction ensuring that it is done in accordance with the given plans and specifications and within Reclamation Directives and Standards.
- **Demonstration Section Monitoring:** Each demonstration section will be monitored for one calendar year. A report will be produced that will document the effectiveness and efficiency of the demonstration section and will be prepared by TSC. A Monitoring Plan will be prepared by TSC prior to the physical construction of the demonstration section to ensure
- **Environmental Permitting Reviews:** Reviews and coordination with area office and regional environmental groups to ensure appropriate permits are obtained, that they include the required information and that they are suited to meet the laws and regulations for the work being executed.

Appendix G – Risk Register

<Insert Risk Register Here>

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IN REPLY
REFER TO:

MP-720
ADM-13.00

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

JUL 14 2015

DATE	SURNAME	CODE
6/29/15	D Apostol	720/DA
6/30/15	R Ganzfried	720/RG
6/30/15	R Ganzfried	700/RG
6/30/15	M Denning	700/MD
7/7/15	B Bryant	110/BB
7/7/15	JL [unclear]	115/JP
7/9/15	Kaplan	103/SK
		105/PA
7/14/15	DMurillo	100/DM
Classification		
Project		
Control No.		
Folder I.D.		46

Mr. Leigh W. McDaniel
Chair
Sites Project Joint Power Authority
P.O. Box 1266
Willows, CA 95988

Subject: Memorandum of Understanding (MOU) for Completion of the North-of-the- Delta Offstream Storage (NODOS) Investigation and Sharing of Costs

Dear Mr. McDaniel:

Enclosed for your records is one fully-signed original MOU for the NODOS Investigation.

If you have any questions, please contact Mr. Dean Apostol at 916-978-5072 or daapostol@usbr.gov.

Sincerely,

DAVID MURILLO

David G. Murillo
Regional Director

Enclosures

bcc: SOL (KAllen)
MP-700 (MDenning)
MP-720 (RGanzfried, DApostol)

WBR: DApostol/KDuncan/916-978-5072/29 Jun 2015
I:\ASTONLY\Correspondence\2015\DApostol - Trans Ltr - MOU for Completion of NODOS Investigation and Sharing of Costs [46].docx

RECLAMATION

Managing Water in the West

Project Management Plan

North-of-the-Delta Offstream Storage (NODOS) Investigation and Supporting Documents

**Central Valley Project
Mid-Pacific Region
Division of Planning**

In Coordination with
Sites Project Authority



Bureau of Reclamation
Mid-Pacific Region

November 2017

Draft_0004276

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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1. Introduction and Background

1.1 Purpose of the Project Management Plan

This Project Management Plan (PMP) serves as a guideline describing how the U.S. Department of the Interior Bureau of Reclamation will manage and conduct the feasibility investigation for the North-of-the-Delta Offstream Storage (NODOS) Investigation (Investigation) in cooperation with the Sites Project Authority (SPA).

For the purposes of this PMP, the terms “Investigation” and “Project” are considered to be synonymous.

The PMP provides a listing of the various organizational groups and team members, a schedule for completion of the work activities, and estimated costs for each segment of the work.

The July 14, 2015, Memorandum of Understanding (MOU) as amended between the SPA and Reclamation serves as the baseline framework agreed to by the MOU parties. However, scope and schedule changes occurred in 2016 that necessitate changes to the MOU. A proposed amended MOU should be developed to reflect changes to roles, responsibilities, schedules, and costs. This revised draft PMP reflects the changes that occurred thus far in 2017. Specifically, Congress directed Reclamation to prepare a Final Feasibility Report (Report) and Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for submission to Congress by November 30, 2017. In order to ensure timely delivery of the Report, Reclamation has taken on the lead for its preparation. This change is outlined in detail in the remainder of this PMP. Preparation of the Feasibility Report by Reclamation is a greater effort than stated in the MOU, and the MOU will be modified upon acceptance of this PMP.

The PMP is a living document that is subject to additional changes and is expected to be updated as the Investigation proceeds. Items may be added, modified, or deleted as the Project details are developed and elaborated upon over time. Details of the PMP shall be aligned to adjust to the Project schedule, scope, and cost. Any suggestions for changes or corrections may be taken to the respective Reclamation and SPA Project Managers (PMs) so the teams can get timely updates.

1.1.1 Goals

The PMP has been prepared to:

- Ensure work, budgets, and schedules required during the feasibility investigation have been closely examined and represent valid estimates of schedules, budgets, and level of effort necessary to complete the Investigation within the desired timeframe.
- Provide a systematic approach for assignments of responsibility, provide for accountability, foster coordination, and ensure that adequate documentation is maintained throughout the NODOS Investigation.

When the NODOS Investigation, Feasibility Report, and EIS/EIR are completed as described herein, additional Federal and/or State decision-making, approvals, and construction authorizations will be required before implementation of any multiple-purpose NODOS surface storage project.

1.1.2 Content

This PMP defines the roles, responsibilities, procedures, and processes that will result in completion of the NODOS Investigation and related decision documents to support decision-making with respect to determining potential public investment in water management actions that may be recommended, proposed, or approved at the conclusion of the Investigation. It establishes the assumptions, activities, methods, and practices for effective communication, coordination, direction, documentation, execution, and overall monitoring and control throughout the duration of the NODOS Investigation.

1.1.3 Primary Reclamation Purpose

Reclamation's primary purpose is to complete the authorized NODOS Investigation, feasibility studies, and supporting documents (e.g., Feasibility Report, EIS/EIR) to determine the type and extent of Federal interest in investing in a multiple-purpose water storage project in Northern California. Reclamation will ensure that resulting activities and products are conducted and processed in compliance with Reclamation's Directives and Standards for Feasibility Studies (CMP 02-02), Department of the Interior's Departmental Memoranda, 1983 Council on Environmental Quality's *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* (P&G), National Environmental Policy Act (NEPA), and other pertinent Federal, State, and local planning and environmental laws, and Department and Reclamation policies.

The Feasibility Report and EIS/EIR and supporting documents may also be used by Cooperating Agencies pursuant to NEPA, concerned Federal, State, and local agencies, other stakeholders, and the public for various decisions and actions.

1.1.2 Primary SPA Purpose

The SPA primary purpose is to complete the NODOS EIS/EIR and prepare a California Water Commission's (CWC) Water Storage Investment Program (WSIP), *Water Quality, Supply, and Infrastructure Improvement Act of 2014* (Proposition 1) funding application.

The SPA will use the Federal Feasibility Report, EIS/EIR, WISP application, and input from the CWC to refine their proposed NODOS project and determine the SPA's interest in constructing, operating, and maintaining a multiple-purpose water storage project in Northern California.

The NODOS Investigation will culminate in a Federal Feasibility Report, WSIP Feasibility Report, and EIS/EIR and supporting documents to support decision-making by the CWC and other concerned State agencies, and to determine if there is compelling State and local interest to continue.

1.2 Project Background and Current Activities

The 2000 CALFED Bay-Delta Program (CALFED) Programmatic Record of Decision (ROD) and related Programmatic EIS (PEIS)/EIR recommended investigating five potential surface water storage projects as part of its storage program element. The NODOS Investigation is one such storage project with multiple objectives. The NODOS Feasibility Study was authorized in 2003 in Public Law (P.L.) 108-7 to study potential off-stream water storage north of the confluence of the San Francisco Bay with the Delta of the Sacramento and San Joaquin Rivers (Bay-Delta). After State and Federal funds were appropriated in 2003, Reclamation and the California Department of Water Resources (DWR) initiated the NODOS Investigation. In 2004, P.L. 108-361 affirmed Federal interest in the investigation and the Mid-Pacific Region partnered with DWR as co-lead agencies consistent with the CALFED Programmatic ROD and supporting PEIS/EIR, NEPA, California Environmental Quality Act (CEQA), and other pertinent laws and policy. Ample Federal and State funds continued to support active partnership and feasibility studies through 2009, until State funding dwindled due to severe State budget constraints.

Fifty-two potential surface water storage sites were screened during the CALFED study process (Initial Surface Water Storage Screening Report, 2000) and potential effects were documented in the Programmatic ROD, PEIS/EIR, and related documents. Further investigation supported the location of a reservoir in the Antelope Valley near the historic settlement of Sites, California, in large part because this location had fewer direct environmental impacts compared with other locations. NODOS was eventually made a priority by Federal and State water managers. Reclamation funding for continued analysis and planning has been provided through the CALFED Bay-Delta Restoration fund.

In August 2010, the SPA was established to complete planning and environmental studies, and to acquire, construct, own, operate, and maintain a proposed 1.3 to 1.8 million acre-foot off-stream reservoir near Maxwell, California. The State budget crisis during the Great Recession and shift in focus to Bay-Delta Conservation Plan planning activities severely diminished DWR's storage study funding, roles, and responsibilities. DWR continues to be involved in a review role and in the development of operational planning of the Sites Reservoir. Reclamation is currently in the process of developing a cost-sharing agreement to recognize their role in providing in-kind services.

In 2013 and 2014, (1) the SPA received State grant funds of \$2.4 million to conduct CEQA studies, develop new alternatives and related cost estimates, and explore new financing and legislation opportunities; (2) the SPA asked the Mid-Pacific Region to delay studies and release an interim NODOS Investigation *Progress Report*, which was done in December 2013; (3) DWR released a *Preliminary NODOS EIR* and *Cost Estimates* in May 2014; and (4) Proposition 1 was passed by voters in November 2014, further constraining DWR involvement.

Previous studies and documents leading to the present moment include:

- Initial Alternatives Information Report completed in 2006 that narrowed the range of possible locations for a new off-stream reservoir
- Design, Estimating, and Construction review in 2007 identified technical issues to be addressed in future studies

- Plan Formulation Report, completed in 2008, which supported a decision to proceed based on the conclusion there are potentially feasible alternative plans that could be considered in the Federal interest as a partial solution to the California water storage challenge
- Administrative Draft Feasibility Report, completed in 2011, which included three alternatives (A, B, and C) with various configurations and supporting facilities, including two different-size reservoirs
- Progress Report, completed in 2013, updated the analysis and summarized the results of previous studies
- Value Planning, completed in 2012, identified various cost-saving measures for proposed facilities, including construction methods, and road and dam designs
- Design, Estimating, and Construction review in 2014 identified additional cost savings and technical issues that need resolution before a final feasibility report is completed
- Preliminary Design and Cost Estimating Report completed by DWR in May 2014
- Preliminary Draft EIS/EIR, completed by DWR (and reviewed by Reclamation) in May 2014
- Sites Reservoir Alternatives Evaluation, prepared for SPA by URS Corporation, November 2014

Since 2014 the SPA has been investigating the potential for one or more additional operational and scaled-down facility options that can better suit the needs of likely water purchasers in California, and has brought on 21 partners within the State of California located both south and north of the Delta.

The existing alternatives (A, B, and C) from the 2011 Feasibility Report and 2013 Progress Report include common core facilities envisioned at the preferred Sites Reservoir location as follows:

- 1.3-1.8 million acre-feet (MAF) reservoir capacity (12-14,000 acre surface area)
- Use of Tehama-Colusa and Glenn-Colusa canals for conveyance
- A new pipeline and pump station connecting to the Sacramento River
- Hydropower facilities, possibly including pump-back capability
- Two main dams and multiple saddle dams
- A new road and a bridge to maintain connection and emergency services for communities west of the reservoir with I-5
- Recreation facilities around the new reservoir
- In addition, off-site mitigation will likely be required for loss of habitats, including vernal pools, grasslands, streams, and oak woodlands

Various operating scenarios are matched to each alternative. The SPA has developed a new alternative that will be the locally preferred alternative (identified as Alternative D) that is

presently envisioned as a pared-down set of facilities along with a 1.8 MAF reservoir and alternative operating scenarios. Alternatives A, B, and C have most of the Sites Reservoir water yield being delivered south of the Delta. Alternative D currently envisions approximately 250,000 acre-feet for water supply throughout the State of California with approximately 90,000 acre-feet being retained north of the Delta for agricultural uses and an additional 250,000 acre-feet being available for public benefits throughout the State of California. Costs for the alternatives currently range from \$4 to \$6 billion dollars, and each alternative has a positive benefit cost ratio, making them eligible for Federal funding under the national economic development account of the 1983 P&G.

On July 14, 2015, the Mid-Pacific Region and the SPA signed an MOU/cost-share agreement to continue the feasibility study and complete a Draft Feasibility Report/EIS/EIR by November 2016 to meet Reclamation, DOI, and CWC commitments. However, CWC's schedule has changed, and requirements for the CWC application are currently in development, extending due dates that delay draft reports and decisions for potential Proposition 1 grant funds later in 2018. The CWC requested applications be submitted in June 2017 for an initial funding decision in early 2018. The SPA submitted a WSIP application for State funding of "public benefits." The application included a WSIP Feasibility Study and a publicly available draft EIS/EIR, which will then be evaluated by the CWC for an initial funding decision in early 2018.

Presently, Reclamation has prepared a new schedule to complete the Final Federal Feasibility Report by November 30, 2017, for the Secretary of Interior.

Reclamation is the lead Federal agency pursuant to NEPA, the P&G, and other pertinent Federal laws. The SPA is assuming the lead non-Federal role from DWR following implementation of the *Water Quality, Supply, and Infrastructure Improvement Act of 2014 (aka Proposition 1, State Water Bond)* to become the non-Federal (local) sponsor of the Investigation. The SPA became the lead agency pursuant to CEQA in February 2017 as they intend to ultimately become the builder, owner, and operator of a NODOS Project/Sites Reservoir if approved. The SPA released a Notice of Preparation in late January 2017 to assume the CEQA lead.

Reclamation's effort to endorse the EIS that is being prepared by the SPA was contingent upon the SPA providing an Administrative Draft EIS/EIR in March 2017. Reclamation released the Draft Feasibility Report and EIS/EIR for public review and comment under NEPA in August 2017. Reclamation will support the planning and participate in public meetings during the public comment period. The SPA will lead the planning and collection of public comments as well as respond to comments received during the public comment period.

Not included in the Federal Feasibility Report and deferred to the preconstruction phase are the following:

1. Permitting and Consultation
 - a. Federal Endangered Species Act
 - b. California Endangered Species Act

- c. Section 408 for modification of a Federal water resources project administered by the U.S. Army Corps of Engineers (USACE)
 - d. Section 12 and 404 permits for construction in waters of the United States
 - e. Section 401 Clean Water Act permits
 - f. State Historic Preservation Act Section 106
 - g. Native American Tribal Consultation
 - h. Water Rights
 - i. ROD
2. Wildlife and Cultural Resource Surveys
 3. Detailed Engineering Designs and Geotechnical Investigations
 4. Detailed Water Operations and Modification of the 1968 Coordinated Operating Agreement Between the Bureau of Reclamation and the DWR
 5. Financial Feasibility

1.3 Study Areas

Three study areas have been defined for the NODOS Investigation: primary, secondary, and extended study areas. The *Primary Study Area* includes all alternatives and related facilities under consideration, and is located in Glenn and Colusa Counties in the central-west Sacramento Valley near the town of Maxwell, California. It stretches from the Sacramento River on the east to the first line of foothills of the Coast Range on the west, and from Butte City in the north to Colusa in the south (Figure 1). The Antelope Valley, location of the proposed 14,000 acre reservoir, is a sparsely populated rangeland landscape with a few seasonal streams coursing through it (Figure 2).

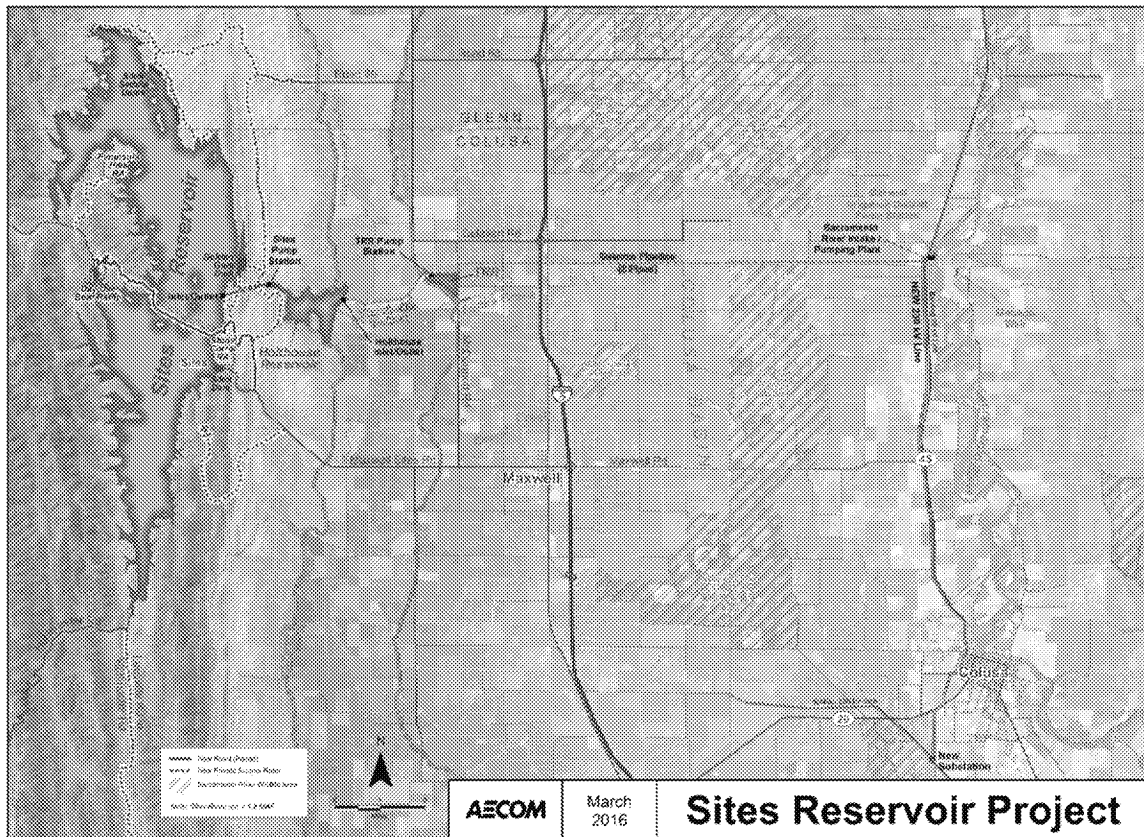


Figure 1. Map of the NODOS Primary Study Area



Figure 2. Antelope Valley, preferred location for the NODOS/Sites Reservoir Alternatives

The *Secondary Study Area* includes facilities that would be impacted operationally if the Project is developed. For example, changes to stream flows could be experienced both up- and downstream of the *Primary Study Area*, extending all the way to Shasta Dam in the north and the Bay Delta in the south. The *Extended Study Area* includes the entire Central Valley and State Water Projects, which may be subject to potential additional operational changes.

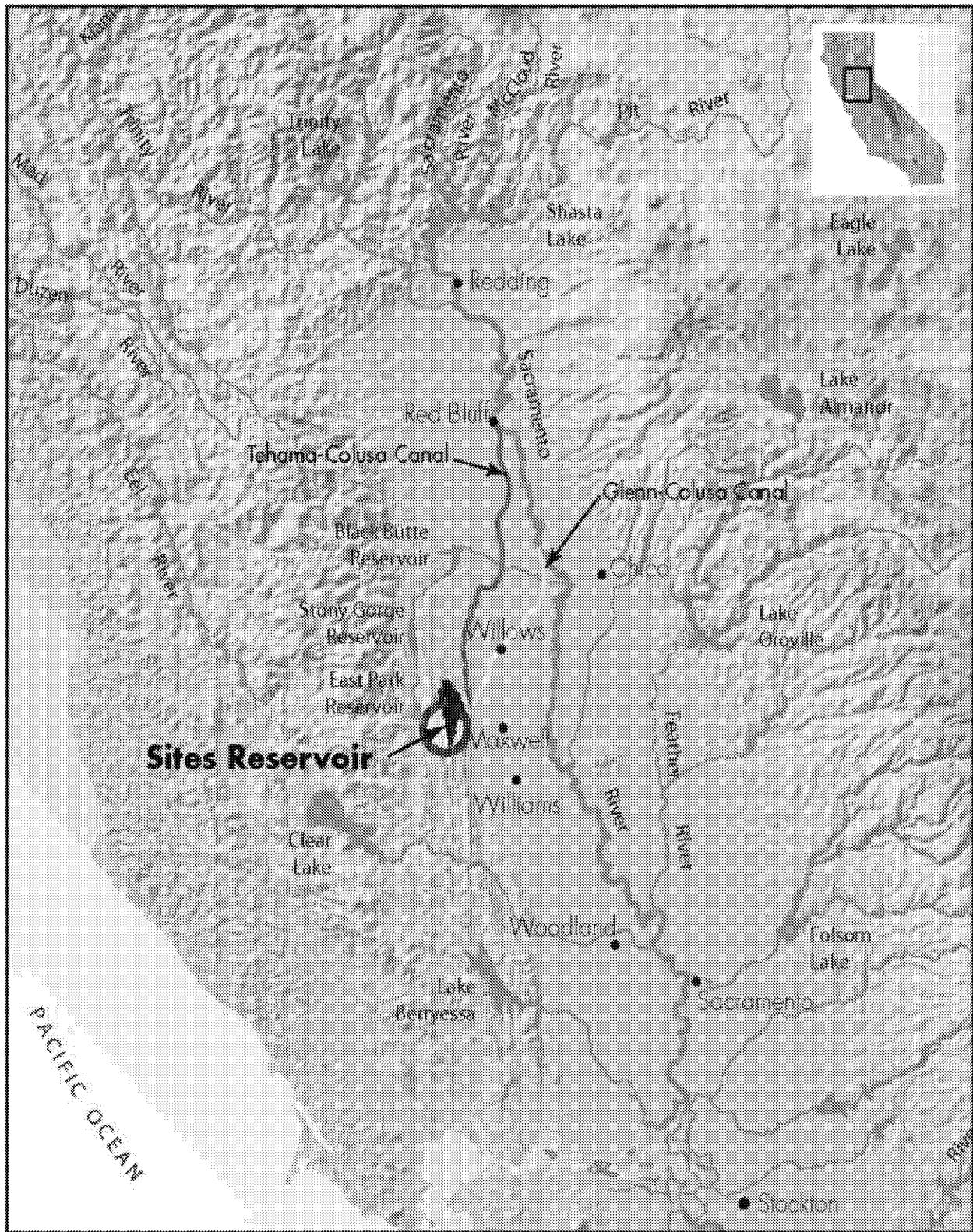


Figure 3. Secondary Study Area



Figure 4. Proposed location for the Sites Dam under all remaining and anticipated alternatives

2. Study Authorizations

2.1 Federal Authorization for Feasibility Investigation

Reclamation received feasibility study authority for the NODOS Investigation in P.L. 108-7, the *2003 Omnibus Appropriations Act*.

“The Secretary of the Interior, in carrying out CALFED-related activities, may undertake feasibility studies for Sites Reservoir, Los Vaqueros Reservoir Enlargement, and Upper San Joaquin Storage projects. These storage studies should be pursued along with ongoing environmental and other projects in a balanced manner.”

In October 2004, the *Water Supply, Reliability, and Environmental Improvement Act* (P.L.108-361) authorized Federal agencies to participate in the multiple-purpose CALFED with collaborating Federal and State agencies, including authorizing Reclamation to conduct planning and feasibility studies for NODOS:

“The Secretary of the Interior is authorized to carry out the activities described in paragraphs (1) through (10) of subsection (d), to the extent authorized under the reclamation laws, the Central Valley Project Improvement Act (title XXXIV of Public Law 102-575; 106 Stat. 4706), the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law.”

Section 103, paragraph (d)(1)(A)(ii) of P.L. 108-361 further defines authorized activities related to water storage:

“planning and feasibility studies for the following projects requiring further consideration— (I) the Sites Reservoir in Colusa County...”

Congress subsequently provided additional guidance in Section 207 and 208 of P.L. 113-76.

SEC. 207. Title I of Public Law 108–361 (the Calfed Bay Delta Authorization Act) (118 Stat. 1681), as amended by section 210 of Public Law 111–85, is amended by striking “2014” each place it appears and inserting “2015”

SEC. 208. The Secretary may hereafter partner, provide a grant to, or enter into a cooperative agreement with local joint powers authorities formed pursuant to State law by irrigation districts and other local water districts and local governments, to advance planning and feasibility studies authorized by Congress for water storage project: Provided, That the Secretary shall ensure that all documents associated with the preparation of planning and feasibility studies and applicable environmental reviews under the National Environmental Policy Act for a project covered by this section shall be made available to any joint powers authority with whom the Secretary enters into an agreement to advance such project: Provided further, That the Secretary, acting through the Commissioner of the Bureau of Reclamation, shall ensure that all applicable

environmental reviews under the National Environmental Policy Act, to the degree such reviews are required, are completed on an expeditious basis and that the shortest existing applicable process under the National Environmental Policy Act shall be utilized, including in the completion of feasibility studies, Draft Environmental Impact Statements (DEIS) and Final Environmental Impact Statements (FEIS): Provided further, That the Bureau of Reclamation need not complete the applicable feasibility study, DEIS or FEIS if the Commissioner determines, and the Secretary concurs, that the project can be expedited by a joint powers authority as a non-Federal project or if the project fails to meet applicable Federal cost-benefit requirements or standards: Provided further, That the Secretary shall not provide financial assistance towards these studies or projects, unless there is a demonstrable Federal interest.

Congress subsequently provided the following additional guidance in Section 205 of the *Consolidated Appropriations Act, 2016*.

SEC. 205. The Secretary of the Interior, acting through the Commissioner of Reclamation, shall—

[...]

(2) complete the feasibility studies described in clauses (i)(II) and (ii)(I) of section 103(d)(1)(A) of Public Law 108–361 and submit such studies to the appropriate committees of the House of Representatives and the Senate not later than November 30, 2016;

[...]

(4) provide a progress report on the status of the feasibility studies referred to in paragraphs (1) through (3) to the appropriate committees of the House of Representatives and the Senate not later than 90 days after the date of the enactment of this Act and each 180 days thereafter until December 31, 2017, as applicable. The report shall include timelines for study completion, draft environmental impact statements, final environmental impact statements, and Records of Decision.

Upon completion of the feasibility investigation, Congress would consider the feasibility report, EIS/EIR, and supporting documents before deciding whether to authorize Federal construction or to appropriate Federal funding for constructing Sites Reservoir.

On December 18, 2016, President Obama signed into law Senate Bill 612, Water Infrastructure Improvements for the Nation Act, which contains language delegating approval of storage projects to the Secretary of Interior consistent with the determination of the CWC. It is the Mid-Pacific Region’s goal to complete the Final Federal Feasibility Report by November 30, 2017, in anticipation of the passage of the 2017 Energy & Water Development Appropriations Bill.

2.2 State and Local Authorizations for Feasibility Investigation

Section 227 of the California Water Code provides authorization for DWR to participate in water resources investigations. DWR received authorization to study NODOS beginning in 1996 under State of California Proposition 204, the Safe, Clean, Reliable Water Supply Act, which provided funding for feasibility and environmental investigations of potential off-stream storage projects upstream from the Delta.

The SPA was established on August 26, 2010, by seven entities. This regional consortium of local water agencies and Counties created the SPA to

“study, promote, develop, design, finance, acquire, construct, manage, and operate Sites Reservoir and related facilities... to (1) increase surface water storage to enhance water management flexibility in the Sacramento Valley, (2) provide flood control benefits, (3) improve conditions for fish and wildlife in the Sacramento Valley, including anadromous fish in the Sacramento River, and (4) improve the operation of the state’s water system to provide improvements in ecosystem and water quality conditions in the Bay-Delta while providing a more reliable water supply for the State of California.”

The initial partnering entities that formed the SPA included Glenn County, Colusa County, Reclamation District No. 108, Glenn-Colusa Irrigation District, Tehama-Colusa Canal Authority, and Maxwell Irrigation District. The SPA and Reclamation signed an MOU in the summer of 2015 to cost-share the completion of feasibility studies and related environmental documents to support Federal and State decision-making.

In the fall of 2016, the SPA sought new members to provide funding and assign an allotment of water up to the 250,000 acre-feet that the SPA envisioned for water supply. The following agencies have requested allotments of water or have an interest in developing the proposed Sites Reservoir: Western Canal Water District, Placer County Water Authority and City of Roseville, City of American Canyon, Santa Clara Valley Water District, Antelope Valley-East Kern Water Agency, Castaic Lake Water Agency, Coachella Valley Water District, Desert Water Agency, Metropolitan Water District, San Geronio Pass Water Agency, San Bernardino Municipal Water District, Wheeler Ridge-Maricopa Water Storage District, Zone 7 Water Agency, Carter Municipal Water Company, Garden Highway Municipal Water Company, Pacific Resources Municipal Water Company, and California Water Service.

Upon completion of the feasibility investigation, the CWC may consider the feasibility report(s), EIS/EIR, and supporting documents before deciding whether to grant State funding for a potential NODOS/Sites Reservoir project. The CWC advises the Director of the DWR on matters within the Department’s jurisdiction, approves rules and regulations, and monitors and reports on the construction and operation of the State Water Project. California’s comprehensive water legislation, enacted in 2009, gave the Commission new responsibilities regarding the distribution of public funds set aside for the public benefits of water storage projects, and developing regulations for the quantification and management of those benefits. The roles and responsibilities of the CWC are defined in the State of California Water Code, sections of the Government Code, and the Civil Procedures code, including but not limited to:

“Selecting water storage projects for funding under the ‘Water Quality, Supply, and Infrastructure Improvement Act of 2014’ (Proposition 1) through a competitive public process. Funding must go towards the public benefits portions of projects that improve the operation of the state water system, are cost effective, and provide a net improvement in ecosystem and water quality conditions. (WC § 79750)

Developing and adopting, by regulation, methods for quantification and management of public benefits of water storage projects by December 15, 2016, in consultation with the Department of Fish and Wildlife, the State Water Resources Control Board, and the department. (WC § 79754)”

3. PMP Scope & Investigation Project Objectives

3.1 Investigation Project Scope

The primary activities and deliverables are:

- Definition of one new alternative by the SPA. The SPA is the lead for developing the new alternative, and has retained AECOM and CH2M for engineering and environmental services, respectively.
- Technical memoranda, including modeling, updating, cost estimates, and benefits analysis of the new alternative for inclusion into the Draft EIS/EIR and Final Feasibility Report. Preparation of the Final Feasibility Report and Draft EIS/EIR.
 - Reclamation is the lead for the preparation of the Feasibility Report and has AECOM under contract to prepare the draft and final Federal Feasibility Reports.
 - The SPA is the lead for the WSIP Feasibility Report and EIS/EIR. The SPA has AECOM and CH2M contracted for the WSIP Feasibility Report and EIS/EIR, respectively.
 - Reclamation will provide review of the EIS to ensure it meets Federal requirements and publish the Notice of Availability.

After completion of the final Feasibility Report and EIS/EIR, additional activities and deliverables may be identified to complete remaining requirements in compliance with planning procedures, NEPA, CEQA, and other pertinent laws and policy. It will be necessary to obtain permits from various agencies to comply with the Endangered Species Act, Clean Water Act, and other applicable laws. As the project enters Preconstruction Engineering and Design and project features are refined, it is likely that additional NEPA/CEQA documents will need to be prepared and modifications to permits sought. Additionally, water rights and water operations must be formalized with possible transfer to the SPA by DWR and adjudication of the water rights application by the State Water Resources Control Board (SWRCB).

3.2 Investigation Project Objectives

The planning objectives are in large part defined through the feasibility investigation authorization but need to be updated to reflect changes to the planning baseline and to the current problems, needs, and opportunities, consistent with the P&Gs and the *Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1)*. The following objectives have been defined and refined to date in the *2013 Progress Report* and other pertinent documents.

- Primary objectives are to:
 - Improve water supply reliability for agricultural, urban, and environmental uses
 - Increase survival of anadromous and endemic fish populations

- Improve environmental and drinking water quality in the Delta
- Provide flexible hydropower generation to support integration of renewable energy sources (This may become a secondary objective)
- Secondary objectives are to:
 - Develop additional recreation opportunities
 - Provide incremental flood damage reduction opportunities

Other objectives such as emergency water supply were considered but are inherent in the project's primary objectives.

3.3 Investigation Project Milestones

It is expected that the following documents/deliverables will be provided to concerned cooperating agencies (in accord with NEPA), responsible agencies (in accord with CEQA), CWC, and/or other Federal, State, and local agencies, and the public as required to support Federal, State, and local government decisions and actions. Based on the MOU between Reclamation and the Authority, which was signed in July 2015, the project scope and milestones do not include activities beyond the draft Feasibility Report/EIS/EIR.

At the time of this writing Reclamation continues to pursue the November 30, 2017, deadline for completion of a Federal Feasibility Report for transmission to Congress.

Should determinations of Federal and/or State interest be made and an alternative recommended for Federal and/or State action, Congressional authorization and/or approval by the Secretary of Interior according to the Water Infrastructure Improvements for the Nation (WIIN) Act would be needed before proceeding with further Federal work on the project. Congressional action would be needed for the appropriations of Federal funds. If further work is authorized, the next PMP would focus on implementation including a ROD, final planning, engineering and design, and then construction. If at any time a decision is made that the project is to be implemented solely by State and/or local agencies, this PMP would be modified to reflect changes in Reclamation's role, required process, and deliverables.

3.3.1 Milestones for Reclamation/Federal Actions to Complete a Draft Federal Feasibility Report by August 2017

Table 1. Tasks and Their Expected Duration

Task Name	Duration	Start	Finish
Mid-Pacific Manager, JPA, DWR, and Solicitor (and Technical Team) Review of Admin Draft EIS and Feasibility Report	15 days	Tue 3/14/17	Mon 4/3/17
Respond to Mid-Pacific Manager, JPA, DWR, and Solicitor (and Technical Team) Comments	10 days	Tue 4/4/17	Mon 4/17/17
Prepare Admin Draft Incorporating Responses to DWR and Sites JPA Admin Draft EIS and Feasibility Report Comments	10 days	Fri 4/21/17	Thu 5/4/17
Cooperating Agency Review	50 days	Fri 5/5/17	Thu 7/13/17
Prepare Draft Feasibility Report and EIS for Public Review and Comment	10 days	Fri 5/5/17	Thu 8/14/17
Post Notice of Availability and Public Meeting Dates for Draft EIS in Federal Register	1 day	Fri 8/11/17	Fri 8/11/17
Public Review of Draft Feasibility Report and Draft EIS/EIR	154 days	Tue 8/14/17	Fri 1/15/18

The schedule for the final federal feasibility report and EIR/EIS is under development subject to budget and management direction.

4. Staffing Plan – Roles and Responsibilities

4.1 Partnering, Participating, Cooperating, and Responsible Agencies

The Project will be undertaken and managed by the SPA and Reclamation with input from Cooperating Agencies (in accord with NEPA), Responsible Agencies (in accord with CEQA), and other concerned stakeholders and the public. Coordination will be maintained with other Federal, State, and local agencies during the Investigation, including California Department of Fish and Wildlife (DFW), USACE, California DWR, SWRCB, CWC, and other entities having an interest in the potential Project.

Cooperating and responsible agencies having a regulatory or jurisdictional roles and responsibilities under NEPA and CEQA include California Parks and Recreation, National Marine Fisheries Service, Bureau of Indian Affairs, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and other agencies which will be identified in the EIS/EIR.

The SPA, in close cooperation with Reclamation, will have the primary role of managing a consultant team contracted to complete the WSIP Feasibility Report, Draft and Final EIS/EIR, and public outreach necessary for this effort. Reclamation will contract for combining the locally preferred alternative into a Draft and Final Federal Feasibility Report. Reclamation will have technical review responsibility for reviewing the locally preferred alternative to ensure the work scope, activities, analytical methods, and products meet Federal standards, requirements, law, and policy.

In addition, Reclamation will be responsible for coordination with other Federal agencies and federally recognized tribes. The SPA will coordinate with CWC, DWR, and DFW to define their roles, including technical review. The SPA will provide their consultants to assist in coordination with Federal agencies and federally recognized tribes with information developed as part of the EIS/EIR process.

Reclamation has appointed a project manager (PM) to work with the SPA and its consulting team and to insure timely and thorough review of work products. The PM will be responsible for coordinating the work of Reclamation staff and lead Reclamation's participation in the Project Management Group (PMG) as described later in this document. The SPA has appointed its General Manager to serve as its overall PM to oversee the work of its consultants and coordinate with Reclamation in the production of the Draft/Final Federal and WSIP Feasibility Reports and EIS/EIR, in cooperation with Reclamation.

4.1.1 Primary Roles and Responsibilities for Feasibility Study, Phase 1

Reclamation will produce the Draft and Final Federal feasibility study report in August 2017 and August 2018 respectively. This document will provide:

- Comprehensive documentation of the feasibility study, including complete analysis of all alternatives (approximately 1,000 pages including appendices).
- Plan formulation, economics, real estate, recreation, engineering, and water supply modeling appendices.
- Incorporation of the EIR/EIS under development by the SPA (may incorporate by reference).
- Roles and responsibilities for project implementation incorporating the decisions from ongoing discussions with the SPA.
- Public review and comment.
- The Administrative Draft Federal Feasibility Report was to be delivered to Reclamation Management in March 2017 with public review beginning in August 2017. Reclamation anticipated a 6-month review process ending January 15, 2018. The Final Federal Feasibility Report was to be sent to the SPA by August 30, 2018.

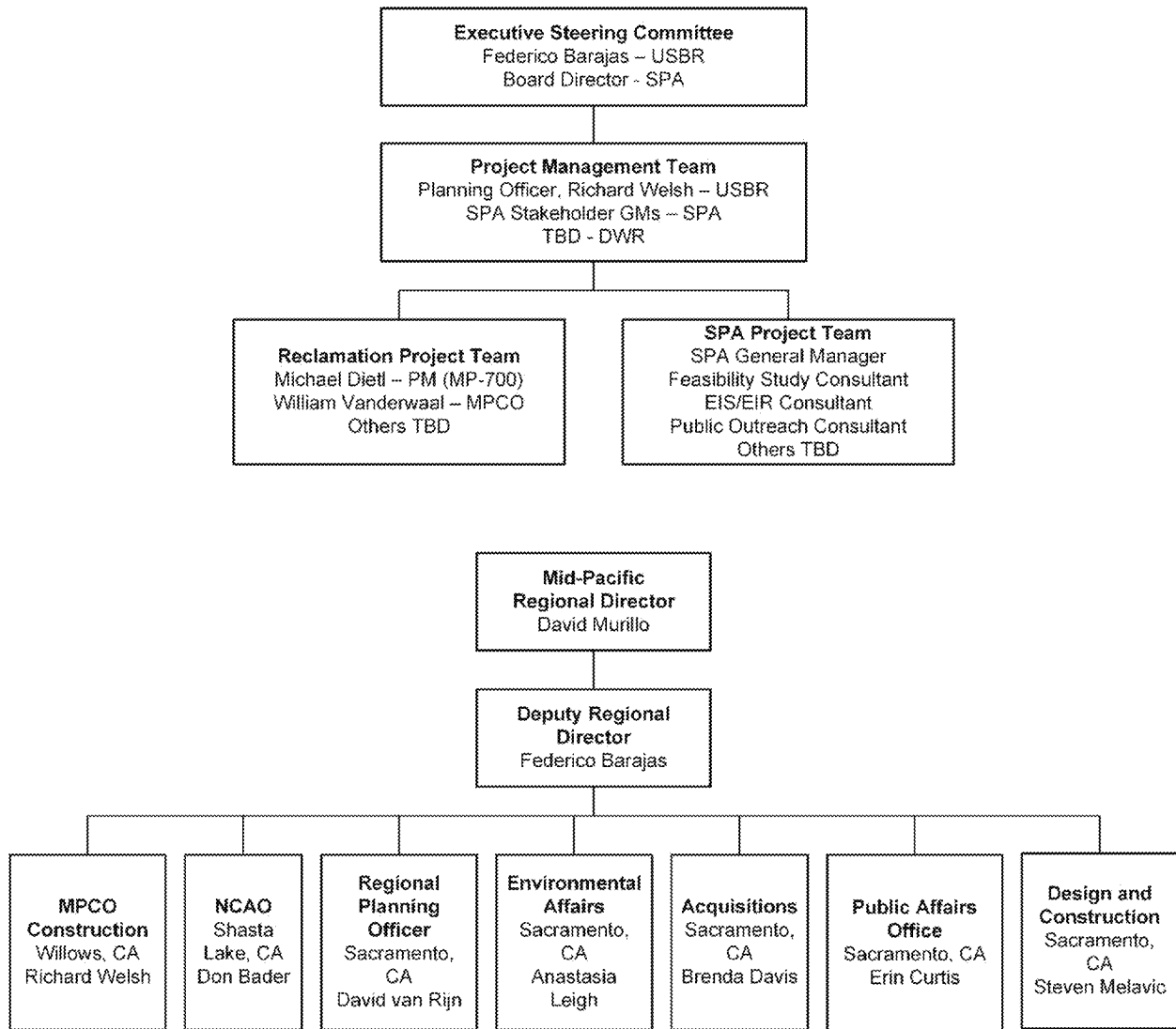
4.2 Organizational Breakdown Structure (OBS)

An OBS has been created to enable team members to easily identify the interagency and intra-agency relationships among members, and to facilitate reviews and decisions. The OBS will include primary positions/individuals, their agencies, lines of authority (chains of command), and decision-making. Relationships that are defined by contracts or agreements are also shown.

The OBS will be reviewed when any of the team lists are revised or new interagency agreements or authorities are signed, and a revised copy will be distributed. A phone and address list is provided and will be updated as needed.

The OBS, along with the phone and address list, shows the project management organization and participants.

Sites (NODOS) Project Management Group Organizational Breakdown Structure



Sites Project Authority Organizational Breakdown Structure

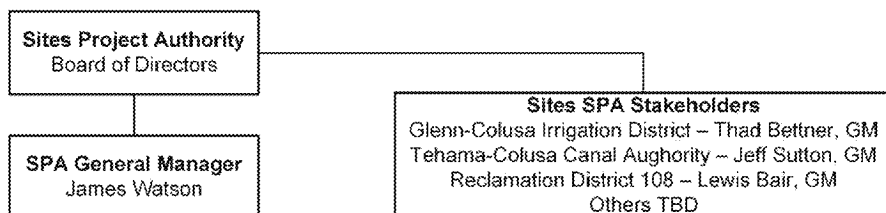


Figure 1. OBS Team Chart

4.3 Project Management Organization

The Project Management Organization is shown in Section 4.2. The management of the NODOS Investigation Project will be carried out by the following groups.

- **Executive Steering Committee (ESC)** – Executive Management Level for Policy & Oversight
- **Project Management Team (PMT)** – Senior Management Level Oversight
- **Project Management Group (PMG)** – Project Management, Staff & Service Provider Coordination
- **Reclamation Technical Team (RTT)** – Provides technical review and consultation

4.3.1 Executive Steering Committee

The ESC consists of executive-level managers from Reclamation and the SPA who are able to provide sponsor-level decision-making authority. The ESC is intended to promote cooperation and collaboration and to resolve issues that cannot be solved at lower levels of the project structure. Members of the ESC include the following:

- David Murillo, Regional Director, Reclamation’s Mid-Pacific Region, or designee
- Kim Dolbow Vann, Board Chair, SPA, or designee

Decisions by the ESC will be made by consensus and documented in writing.

The ESC will determine the frequency of meetings. Members may also attend the PMT meetings described below. Reclamation’s PM, SPA’s General Manager, and/or members of the PMT or PMG may be invited to participate in ESC meetings when necessary.

4.3.2 Project Management Team

The PMT includes senior managers from Reclamation who have decision-making authority and oversee staff assigned to the project. The primary purpose of the PMT is to provide overall guidance and leadership, to ensure that representatives from each organization work toward common goals, and to make decisions that cannot be made at the PMG level. The PMs will elevate issues beyond their authority or ability to resolve to the PMT for consideration and resolution.

The PMT will meet approximately once per month during the initial stages of the Project, then as frequently as necessary during subsequent stages. The PMT will provide overall management guidance; review major findings, conclusions, recommendations, budget and schedule changes; track progress; and make major decisions as needed. Reclamation’s PM and SPA’s General Manager will be invited to participate in PMT meetings.

4.3.2.1 Structure and Membership

Table 2. The PMT Membership

Name	CVP Role / Subject Matter Expertise	Title	Office / Org.	Office Phone
Federico Barajas	Executive Sponsor	Deputy Regional Director	MP-115, Regional Director	916-978-5227
David van Rijn	PMT Chair	Regional Planning Officer	MP-700, Planning Division	916-978-5062
Shana Kaplan	PMT Co-Chair	Deputy Planning Officer	MP-700, Planning Division	916-978-5082
Richard Welsh	Regional Construction	Regional Construction Engineer	MPCO-100, Mid-Pacific Construction Office	530-934-7066
David Mooney	Sponsor, BDO	Acting BDO Manager	Bay-Delta Office	916-414-2402
Donald Bader	Northern California Area	Area Manager	Northern California Area Office	530-275-1554
Anastasia Leigh	Regional Environmental	Regional Environmental Officer	MP-150, Division of Environmental Affairs	916-978-5568
Steve Melavic	Regional Engineering	Regional Engineer	MP-200 Design and Construction	916-978-5302
Rick Woodley	Regional Resources Mgmt, Water Service, Repayment	Regional Resources Manager	MP-400, Office Resource Management	916-978-5264
Autumn Wolfe	Regional Financial Management	Regional Financial Manager	MP-3000, Financial Management	916-978-5352
Brenda Davis	Regional Acquisitions Management	Acquisitions Services Manager	MP-3800, Division of Acquisition Services	916-978-4392
Jeff Rieker	Central Valley Operations	Central Valley Operations Manager	OFC, Central Valley Operations Office	916-979-2199
Ann Lubas-Williams	Regional Program Coordination	Program Coordination Office Manager	MP-120, Program Coordination Office	916-978-5024
Max Milstein	Reclamation Policy Program Management	Program Manager	Reclamation Law Administration	303-445-2853

4.3.3 Project Management Group

The PMG includes representatives of the Sponsor Organization Project Teams and is overseen by the PMT (see OBS). The PMG is a staff-level working group that carries out and/or coordinates or manages work products. The PMG will meet on a frequent basis, weekly at the Project outset, and as needed over time. The SPA and their consulting team will lead the PMG meetings, including preparation of the agenda, facilitation, and note taking. The purpose of these

meetings is to track project progress, and identify and answer technical questions as they arise. Reclamation’s PM and SPA’s General Manager will be invited to participate in all PMG meetings.

4.3.3.1 Project Managers

The PMs are the focal points for the dissemination and flow of information between team members and decision-making officials. The PMs will provide memos and briefings to the PMT as needed. The PMs will take policy or other issues that cannot be resolved at the PMG level to the PMT. The PMs will provide project oversight for their respective organizations. The PMs are responsible for resolving issues with help from technical team members. They have decision-making authority within the limits defined by their respective organizations. All issues within the technical team should first be brought to the PMs.

4.3.3.2 Reclamation Technical Team

The RTT is a subset of the PMG and includes the PMs and multidisciplinary members who provide technical advice and review on engineering, environmental, operational, and other topic areas. Members may be added or deleted as needed during the duration of the project.

The RTT members will be expected to maintain project familiarity within their core discipline, and to review and comment on work products of the consulting team periodically. It is anticipated that a subset of the RTT will have a more significant role and be called on more frequently during the Project.

Table 3. The Initial Reclamation Technical Team

Name	Office	Title	Email	Phone
*Mike Dietl	MP-700	Project Manager	mdietl@usbr.gov	916-978-5070
*Michael Mosley	MP-700	Branch Chief	mmosley@usbr.gov	916-978-5119
John Menniti	MPCO	Project Engineer	jmenetti@usbr.gov	530-934-1321
Robert Baumgarten	TSC	Cost Estimating	rbaumgarten@usbr.gov	303-445-3076
Daniel Donaldson	TSC	Cost Estimating	ddonaldson@usbr.gov	303-445-3080
Gregory Mongano	MP-200	Geology/Geotechnical	gmongano@usbr.gov	916-978-5331
Daniel Osmun	TSC	Embankment Dams	dosmun@usbr.gov	303-445-2980
*Sarah McBride	MP-140	Public Affairs	smcbride@usbr.gov	916-978-5108
*Douglas Kleinsmith	MP-150	NEPA	dkleinsmith@usbr.gov	916-978-5034
*John Jordan	MP-700	Economics	jjordan@usbr.gov	916-978-5080
*Nathaniel Martin	MP-150	F&W Coordination	nmartin@usbr.gov	916-978-5216
*Donna Garcia	CVO	Operations	dgc Garcia@usbr.gov	916-979-0264
*Kevin Clancy	MP-400	Tribal Relations	kclancy@usbr.gov	916-978-5194
*Joel Sturm	MP-200	Engineering	jsturm@usbr.gov	916-978-5305
*Tim Blair	MP-400	Real Estate	tblair@usbr.gov	916-978-5269
Scott Springer	MP-400	Recreation	sspringer@usbr.gov	916-978-5206
TBD	MP-400	Refuge		916-978-5516
*Bob Colella	MP-400	Water Rights	rcollella@usbr.gov	916-978-5256
TBD	MP-400	CVPIA		
*David O'Connor	MP-700	Modeling	doconnor@usbr.gov	916-978-5188

Fred Holz	MP-200	Non-contract Costs	fholz@usbr.gov	916-978-5310
Elwood Raley	MP-700	Water Quality	eraley@usbr.gov	916-978-5296
Michael Tansey	MP-700	Climate Change	mtansey@usbr.gov	916-978-5197
Sandra O’Roak	BDO	Budget	soroak@usbr.gov	916-414-2423
Blair Greimann	TSC	Sedimentation	bgreimann@usbr.gov	303-445-2563
Susan Black	TSC	Socioeconomics	sblack@usbr.gov	303-445-2705
Kevin Tanaka	SOL	Legal	kevin.tanaka@sol.doi.gov	916-978-6134
Steve Piper	TSC	Economics	spiper@usbr.gov	303-445-2736
Andrew Burrows	MP-400	Outdoor recreation	aburrows@usbr.gov	916-978-5206
Laureen Perry	MP-150	Cultural Resources	lperry@usbr.gov	916-978-3816

*Denotes core team

4.3.3.3 Sites Joint Power Authority Project Team (SPAPT)

The SPAPT includes SPA staff, representatives, and consultants. It shall include and be led by the SPA’s designated PM.

The representatives are responsible for participating on the SPAPT to report on their area of responsibility and to coordinate activities related to their areas of expertise. The initial SPAPT will consist of the following:

Table 4. The Sites Joint Power Authority Project Team

Organization	Principal Contact / PM	Area of Responsibility
SPA	Jim Watson	General Manager - PM
AECOM/URS	Jeff Herrin	Consultant for WSIP/State Feasibility Report
CH2MHILL	Mark Oliver	Consultant for EIS/EIR
California Center for Dispute Resolution	Dave Ceppos	Public Outreach Consultant
JBComm	Janet Barbieri	Public Outreach Consultant
ICF	Robert Thomson	Environmental Coordinator

5. Schedule

5.1 Baseline Schedule and Initial Milestones

A Baseline Schedule has been prepared and presented to the PMT for review and acceptance. Upon acceptance, this overall project schedule shall be updated and presented at each PMT meeting. The Project began in October 2015 and runs through the end of December 2017.

Additional contract specific schedules may be developed and incorporated as needed into the overall project schedule.

A detailed project schedule is included in Appendix C.

Summary of the phases in the Project:

Phase 1 Develop and Evaluate New Alternative(s)

Entry Milestone (August 2016): Complete all agreements and organize team

Exit Milestone (March 2017): Compare & display alternatives

Phase 2 Prepare Feasibility Report and EIS/EIR

Entry Milestone (June 2017): Public Review of Draft Feasibility Report and EIS

Interim Milestone (August 2017): Admin Final Feasibility Report incorporating public comments is ready for Regional Director and Denver Policy

Exit Milestone (November 2017): Submit Final Feasibility Report to Secretary of the Interior

Subsequent phases will be defined when the Project Scope is revised at a future date to include Post-Authorization, depending on what is determined to be required.

5.2 Schedule Updates

The PMs will monitor progress and update the schedule to show the current status of the Project prior to each PMT meeting. Other members of the PMG will be responsible for providing input to the PMs on specific technical issues. The PMs' authority to grant additional schedule time is addressed in the Change Management Plan (Appendix E).

6. Budget

6.1 Funding

Funding for the Project comes from Reclamation and investors through the SPA; DWR has also provided funding in the past.

6.2 Budgets

The Total Project Baseline Budget will be established by the PMT, including Contingencies and Management Reserves. Annual budgets will be based on the Federal fiscal year, which is from October 1 to September 30.

Each PM is responsible for overall management of the Project budget for their agencies.

For the purpose of estimating the Total Project Cost, the start date for tracking costs will be based on execution of this PMP.

A detailed Total Project Baseline Budget is included in Appendix D.

6.3 Cost Tracking

Actual costs assigned to the Project will be tracked on a monthly basis by each PM for their respective Project Team. The PMs will have the authority to grant additional funds from the contingencies and management reserve for changes involving scope and deliverables pertaining to their Project Team. The amount authorized by the PMs to grant is addressed in the Change Management Plan (Appendix E).

Cost status will be reported to the PMT at each PMT meeting.

7. Risk Management Plan (RMP)

The PMG will analyze the risks to the Project and develop a RMP. A risk register will be kept by the PMs (Appendix G). The PMG will review and update it for each PMT meeting.

7.1 Risk Management

7.1.1 Introduction

Project Risk is an uncertain event or condition that, if it occurs, has a positive or a negative effect on the schedule, cost, scope, and/or quality of a Project. Risk Management shall be conducted on a regular basis and in a manner to deter undesirable situations from arising, detect events that are not controllable, and enable the project team to take advantage of any beneficial opportunities that may arise.

7.1.2 Purpose

The purpose of this RMP is to identify risks to the Project in advance so that the risks can be analyzed, evaluated, prioritized, and if possible mitigated. Mitigation or risk-response planning can be completed before a risk impacts the Project. Risk-response planning is developing options and actions to enhance opportunities and to reduce threats to Project objectives. A second purpose of this plan is to provide a means to document risk management activities, particularly the implementing of a response to a risk.

7.1.3 Scope

The scope of this RMP is not intended to describe all of the risks up front. Risk identification and analysis will be a continuous activity. As the Project details are elaborated, risks will be identified and analyzed.

7.2 Roles and Responsibilities

7.2.1 Project Managers

The respective PMs for this Project have primary responsibility for overseeing risk management. The PMs are responsible for maintaining and revising the PMP to respond to risk. The PMs may arrange for an independent risk management audit if approved by the PMT.

7.2.2 PMG Members

Each PMG member is responsible for identifying, reporting, and helping to characterize risks within their technical areas of expertise. PMG members are also responsible for implementing risk mitigation measures, as assigned.

7.2.3 Authorities

See the procedures for levels of authority for implementing risk mitigation actions.

7.3 Procedures

7.3.1 Risk Identification

Risk identification is an integral part of the progressive elaborative nature of the development of a large public works project. To be effective, risk assessment needs to be continuous throughout a project. A risk register will be used as a guide for the information needed to describe and log in a risk. As a minimum, the risk will be described and qualitative analysis performed. Qualitative analysis helps prioritize risks for further action.

7.3.2 Logging Risks in the Register

The PMs will maintain a Risk Assessment Register and will periodically update the register. The PMG or other select individuals shall include discussion of risks in their regular meetings, and will include a quarterly meeting dedicated to conducting a risk identification and assessment session to facilitate the updating of the register.

7.3.3 Risk Response and Authorities

The following positions have the authorities identified to implement responses to risks based on the priority assigned:

Low – PMG member, with written (e-mail) communication documentation to the PMs

Medium – PMs, with written communication to the PMT

High or Very High – PMT

7.3.4 Risk Monitoring and Control

7.3.4.1 Reviews and Revisions

The RMP shall be reviewed and updated quarterly, at a minimum. Particular attention shall be paid to the probability of a risk happening because of the time-sensitive nature of the impact a risk can have on the Project.

7.3.5 Risk Documentation

This will be done through a Risk Register, with supplements and attachments (Appendix G).

8. Stakeholder and Communication Plan

8.1 Project Stakeholders

In addition to the PMT and PMG members, the following list of stakeholders is provided. Project updates are provided on an as-needed basis, but no less than twice per year, through the Federal and Cooperating Agency meetings.

Table 5. North-of-the-Delta Offstream Storage Investigation Cooperating, Consulted, Trustee, and Responsible Agencies, Key Stakeholders

Entity	Name	Email	Address
U.S. Army Corps of Engineers (USACE)	Michael Nepstad	Michael.G.Nepstad@usace.army.mil	1325 J Street Sacramento, CA 95814
National Marine Fisheries Service (NMFS)	Barbara Byrne	barbara.byrne@noaa.gov	650 Capitol Mall, Suite 8-300 Sacramento, CA 95814
U.S. Department of the Interior, Bureau of Indian Affairs (BIA)	Charles Jachens	charles.jachens@bia.gov	2800 Cottage Way, Rm. W-2821 Sacramento, CA 95825
U.S. Department of the Interior, Bureau of Land Management (BLM)	Susan Porter	smporter@blm.gov	3801 Pegasus Drive Bakersfield, CA 93308
U.S. Department of the Interior, Fish and Wildlife Service (USFWS)	Rocky Montgomery	Rocky_Montgomery@fws.gov	2800 Cottage Way, Room W-2605 Sacramento, CA 95825-1846
U.S. Environmental Protection Agency (EPA)	Stephanie Skophammer	skophammer.stephanie@epa.gov	75 Hawthorne Street San Francisco, CA 94115
DWR	Ajay Goyal	Ajay.Goyal@water.ca.gov	P.O. Box 942836 Sacramento, CA 94236
California Department of Fish and Wildlife			
Central Valley Regional Water Quality Control Board (Central Valley Water Board)	Matt Scroggins	msscroggins@waterboards.ca.gov	1685 "E" Street Fresno, CA 93706
State Water Resources Control Board (State Water Board), Division of Water Rights	Katherine Mrowka	kathy.mrowka@waterboards.ca.gov	P.O. Box 2000 Sacramento, CA 95814
Pacific Gas and Electric Company (PG&E)	Nick Markevich	NJM1@pge.com	245 Market Street P.O. Box 770000 Mail Code N11C San Francisco, CA 94177

Table 6. Non-Governmental Organizations

Name	Organization	Email
Doug Obegi	Natural Resources Defense Council	dobegi@nrdc.org
Marcus Griswold	Natural Resources Defense Council	mgriswold@nrdc.org
Ron Stork	Friends of the River	rstork@friendsoftheriver.org
Eric Wesselman	Friends of the River	eric@tuolumne.org
Steve Evans	Friends of the River	sevans@friendsoftheriver.org
Mark Kramer	The Nature Conservancy	mkramer@tnc.org
Jay Ziegler	The Nature Conservancy	jay_ziegler@tnc.org
Maurice Hall	The Nature Conservancy	mhall@tnc.org
Mark Biddlecomb	Ducks Unlimited	mbiddlecomb@ducks.org
Mark Smith	Ducks Unlimited	msmith@ducks.org
John Carlson	California Waterfowl Association	jcarlson@calwaterfowl.org
Mark Hennelly	California Water Association	mhennelly@calwaterfowl.org
Chandra Ferrari	Trout Unlimited	cferrari@tu.org
Jacob Katz	California Trout	jkatz@caltrout.org
Curtis Knight	California Trout	cknight@caltrout.org
Zeke Grader	Pacific Coast Federation of Fishermen's Associations	zgrader@ifrfish.org
Dick Pool	Water 4 Fish	rbpool@protroll.com
John McManus	Golden Gate Salmon Association	john@goldengatesalmon.org
Kathryn Phillips	Sierra Club	kathryn.phillips@sierraclub.org
Allan Eberhart	Sierra Club	vallialli@wildblue.net
Megan Hertel	Audubon Society	mhertel@audubon.org
John Cain	American Rivers	jcain@americanrivers.org
Chris Unkel	American Rivers	unkelchris@yahoo.com
Bob Schneider	Tuleyome	bschneider@tuleyome.org
Jerry Meral	Natural Heritage Institute	jerrymeral@gmail.com
David Guy	Northern California Water Alliance	dguy@norcalwater.org

Non-governmental organizations will be invited to public meetings and be updated through website information and press releases.

8.2 General Communication Plan

The PMs will prepare Project updates based on upcoming milestones/actions but no less than twice per year to the PMT. The PMs will provide the PMT with the update in advance of sharing information with the Federal and Cooperating Agencies Team. Based on PMG input, the Project update will include status reporting on the following:

- Schedule
- Draft Feasibility Report
- Environmental Documents
- Significant Policy Issues
- Budget Risk

Additionally, the PMs host weekly calls with the consultant team to discuss the status and schedule of the Project. The PMs host monthly PMT meetings.

8.2.1 Communication Plan/Conflict Resolution

This section includes a communications matrix that describes the communications framework for the project. It will serve as a guide for communications throughout the life of the project and will be updated as communication requirements change.

The PMs for Reclamation and the consultant team will take the lead in ensuring effective communications on this Project. The following Communications Matrix will serve as a tool for Federal, State, and local agency communications, including identifying the information to communicate, the individuals responsible for communicating, and the timing and the audience for communications.

Table 7. Communications Matrix

Comm. Type	Description	Freq.	Format	Participants/ Distribution	Deliverable	Lead
Regional Director Updates	Meetings to discuss the overall project status, focusing on policy issues for resolution	Quarterly	In person	Regional Planning Lead, Deputy Planning Lead, and PM	Agenda, presentation, notes, and memos to file	David van Rijn, Shana Kaplan, and Mike Dietl, USBR
Denver Policy Meetings	Meetings to discuss policy issues	Biweekly	Conference call	Deputy Planning Lead, PM, Denver Policy	Agenda, notes, and memo to file	Shana Kaplan and Mike Dietl, USBR
PMT Meetings	Meetings to discuss the overall project status, focusing on policy questions and resourcing issues	Monthly	In person or via conference call	Project Management Team and PMs	Agenda, notes, and memo to files	TBD and Mike Dietl, USBR
PM Meetings	Meetings to discuss project planning, analysis, schedule, and budgeting	Weekly	In person or via conference call	USBR consultant, PMs, and technical team leads	Agenda, notes, action tracking	Mike Dietl, USBR
PMG Meetings	Project planning and analysis, identification of issues for resolution	Biweekly	In person or via conference call	USBR, SPA, and consultant	Agenda, notes, action tracking, outreach	Mike Dietl USBR James Watson, SPA Jeff Herring, AECOM

Comm. Type	Description	Freq.	Format	Participants/ Distribution	Deliverable	Lead
Technical Team Meetings	Meetings to discuss technical analysis for FR/EIS	As needed/ often weekly	In person or via conference call	USBR and consultants	Agenda, notes, action tracking	Mike Dietl, USBR
Federal, State, and Local Cooperating Agency Meeting	Meeting to provide updates on overall project status, solicit input from agencies	Biannual or more frequent if needed	In person or via WebEx/ conference call	All Federal, State and local cooperating agencies	Agenda, notes	Mike Dietl, USBR Jeff Herrin AECOM
Stakeholder Meetings	Meetings to provide overall status updates, identify new information and concerns, clarify comments, and create additional awareness of the project and stakeholder needs.	As needed	In person	Varies depending on group	Meeting agenda, materials, and summary	Mike Dietl, USBR Jeff Herrin, AECOM
Public Meetings	Four public meetings to discuss and receive public comments on the Draft Federal FR/EIS	Two meetings during the public comment period in 2017	In person	Public	Meeting agenda, materials, and responses to public comments	Mike Dietl, USBR Jeff Herring, AECOM

8.3 Special Reviews and Meetings

All project stakeholders are invited to participate in scoping meetings, stakeholder meetings, and public meetings. Cooperating Agencies are invited to participate in technical review of the Administrative Draft EIS (in accordance with NEPA cooperating agency MOUs).

8.4 Project Management Team

8.4.1 Kick-Off Meeting

A kick-off meeting was held in May 2016 to initiate PMT oversight. The meeting was attended by representatives as described in this PMP. The purpose of the meeting was to initiate Reclamation as the lead for the Federal Feasibility Report.

Subsequent PMT meetings are held monthly or on an as needed basis for policy direction and resourcing issues. These meetings will continue for the duration of the project. Below are items and topics to be considered on a recurring basis.

- PMP and Project Management Team Charter
- Organization Breakdown Structure

- Study Area
- Risk Register
- Budget
- Master Schedule

8.4.2 Project Management Team

The PMG was established in 2016. In 2016 and beyond, meetings are scheduled twice a month due to the accelerated project schedule.

8.4.3 Project Management Group Notes

Agendas will be developed and distributed in advance of all project meetings. Each agenda will include the subjects to be discussed and next steps. Meeting notes will be prepared and distributed in draft form to all attendees for review and comment. Final meeting notes will be saved as part of the Project Record.

8.5 Tribal Communications Plan

The coordination between the NODOS Study Team with federally recognized and non-recognized tribal governments started in the late 1990s through the CALFED program. The CALFED program and NODOS Study Team identified the following tribes that could be affected by implementation of the Sites Reservoir. The NODOS team is reestablishing contact with the tribes since no coordination has occurred since 2004. Letters were sent to the below tribes in June of 2016 and a meeting with the Cachil DeHe Band of Wintun Indians occurred in October of 2016.

Table 8. Federally Recognized Tribes Interested in the NODOS Investigation

Primary Tribe	Name	Location	Type
Cachil DeHe Band of Wintun Indians	Colusa (Cachil DeHe)	Colusa	Rancheria
Paskenta Band of Nomlaki Indians	Paskenta	Corning	Rancheria
Round Valley Indian Tribe of Round Valley	Round Valley	Covelo	Reservation
Wintun Indians	Redding	Redding	Rancheria
Cortina Band of Wintun Indians	Cortina	Cortina	Rancheria
Rumsey Band of Wintun Indians	Rumsey	Rumsey	Rancheria
Wintun-Wailaki Indians	Grindstone Creek	Grindstone	Rancheria

8.6 Public Affairs Plan

PMs and their PMT public affairs representative shall be the primary executor of any public outreach and shall be assisted as requested by other members of the PMT. A representative from Reclamation Public Affairs will participate on the PMG. The Public Affairs representative will

be assisted as requested by other members of the PMG and will assist the Executive Sponsor, PMT Chair, and PM on all outreach efforts. For advertised public meetings, a meeting plan will be prepared in advance of the meeting and reviewed by the PMG to identify roles and responsibilities for items, and confirm meeting dates, times, locations, equipment, handouts, and so forth.

Public Affairs will respond to media inquiries in coordination with the PM.

Past and planned public meetings:

- February 15, 2017 – Sacramento, CA
- February 16, 2017 – Maxwell, CA
- December 5, 2017 – Sacramento, CA
- December 7, 2017 – Maxwell, CA

8.7 Closeout

After completion of the feasibility study phase of the project, the PMs are responsible for storing the entire project record in the Records Management Division files in case of future inquiry or need to develop an Administrative Record.

9. Quality Management Plan (QMP) Feasibility Report Review Schedule

Table 9. Feasibility Report Review Schedule

Task Name	Duration	Start	Finish	Primary Reviewers
Reclamation Review of Draft Cost Estimating Tech Memo (Task 11)	10 days	Thu 8/4/16	Wed 8/17/16	Dan Donaldson
Reclamation Review of Economics Approach Memo (Task 10)	7 days	Fri 8/12/16	Mon 8/22/16	John Jordan Randy Christopherson
Alt A, B, C and Cost Estimate Review by Authority and Reclamation	15 days	Fri 10/7/16	Thu 10/27/16	Dan Donaldson Fred Holz
Appendix B Engineering Update (Alt D from JPA) Review by Authority and Reclamation	10 days	Wed 12/21/16	Tue 1/3/17	Fred Holz Joel Sturm
Preliminary Feasibility Report Chapters 6 and 7 with Economics/Allocation for Alts A, B, C Review by Authority and Reclamation	15 days	Fri 12/16/16	Thu 1/5/17	Vince Barbara Randy Christopherson Mike Dietl Michael Mosley Shana Kaplan TBD
Modified Feasibility Report Chapters 6 and 7 with Alt D Review by Authority and Reclamation	5 days	Wed 2/1/17	Tue 2/7/17	Vince Barbara Randy Christopherson Mike Dietl Michael Mosley Shana Kaplan TBD
Environmental Quality and Social Effects Review by Authority and Reclamation	1 day?	Tue 10/25/16	Tue 10/25/16	Mike Dietl Vince Barbara Nate Martin
Appendix E. Recreation Reclamation Review	10 days	Thu 9/29/16	Wed 10/12/16	Mike Dietl Scott Springer Andrew Burrows
Draft Real Estate Appendix D 2017 Revisions for Alt A, B, C and D Reclamation Review	10 days	Thu 9/1/16	Wed 9/14/16	Mike Dietl Scott Springer
Executive Summary Reclamation Review	5 days	Wed 2/1/17	Tue 2/7/17	Shana Kaplan Michael Mosley Mike Dietl
Chapter 1 Introduction Reclamation Review	5 days	Mon 9/12/16	Fri 9/16/16	Shana Kaplan Michael Mosley Mike Dietl
Chapter 2 Problems, Needs, and Opportunities Reclamation Review	10 days	Mon 9/19/16	Fri 9/30/16	Shana Kaplan Michael Mosley Mike Dietl
Chapter 3 Planning Objectives, Constraints, Alternative Development Process Reclamation Review	10 days	Mon 9/19/16	Fri 9/30/16	Shana Kaplan Michael Mosley Mike Dietl

Task Name	Duration	Start	Finish	Primary Reviewers
Chapter 4 Potential Offstream Storage Locations Reclamation Review	10 days	Mon 9/26/16	Fri 10/7/16	Shana Kaplan Michael Mosley Mike Dietl
Chapter 5 Conveyance Facilities and Reservoir Size Reclamation Review	10 days	Mon 9/26/16	Fri 10/7/16	Shana Kaplan Michael Mosley Mike Dietl Joel Sturm
Chapter 6 Alternative Formulation and Evaluation Reclamation Review	7 days	Thu 1/5/17	Fri 1/13/17	Shana Kaplan Michael Mosley Mike Dietl
Chapter 7 Preliminary Proposed Plan Reclamation Review	5 days	Wed 2/8/17	Tue 2/14/17	Shana Kaplan Michael Mosley Mike Dietl
Chapter 8 Implementation Requirements Reclamation Review	5 days	Wed 2/8/17	Tue 2/14/17	Shana Kaplan Michael Mosley Mike Dietl
Chapter 9 Findings and Conclusions Reclamation Review	5 days	Wed 2/8/17	Tue 2/14/17	Shana Kaplan Michael Mosley Mike Dietl
Chapter 10 Recommendations Reclamation Review	5 days	Wed 2/8/17	Tue 2/14/17	Shana Kaplan Michael Mosley Mike Dietl
Chapter 11 Glossary Reclamation Review	10 days	Mon 6/20/16	Fri 7/1/16	Shana Kaplan Michael Mosley Mike Dietl
Plan Formulation Appendix A Reclamation Review of Appendix A	10 days	Thu 9/1/16	Wed 9/14/16	Shana Kaplan Michael Mosley Mike Dietl
Economics Appendix C Reclamation Review of Appendix C - Alts A, B, C	10 days	Fri 12/30/16	Thu 1/12/17	John Jordan Randy Christopherson Steve Piper
Fish Effects Appendix F Reclamation Review	10 days	Mon 11/28/16	Fri 12/9/16	Mike Dietl Towns Oliver
Draft Hydrology and Water Management/Operations Plan Appendix G Reclamation Review	15 days	Mon 12/12/16	Fri 12/30/16	David O'Connor Donna Garcia
Hydropower Appendix H Reclamation Review	10 days	Mon 1/2/17	Fri 1/13/17	Barry Mortimeyer

Table 10. EIS/EIR Review Schedule

Task Name	Duration	Start	Finish	Primary Reviews
Project Description and Related Chapters Review by Authority and Reclamation	15 days	Mon 10/10/16	Fri 10/28/16	Nate Martin and MP-150
Chapters Unaffected by Operations Review by Authority and Reclamation	15 days	Mon 11/14/16	Fri 12/2/16	Nate Martin and MP-150

Chapters affected by Operations Review by Authority and Reclamation	10 days	Mon 2/6/17	Fri 2/17/17	Nate Martin and MP 150
Produce Admin Draft EIR/EIS for Mid Pacific Management Review	15 days	Mon 2/20/17	Fri 3/10/17	N/A
Mid-Pacific Manager, JPA, DWR, and Solicitor (and Technical Team) Review of Admin Draft EIS and Feasibility Report	15 days	Mon 3/13/17	Fri 3/31/17	N/A
Post Notice of Availability and Public Meeting Dates for Draft EIS in Federal Register	1 day	Thu 5/18/17	Thu 5/18/17	Nate Martin

Quality management of the feasibility report and EIS/EIR will consist of quality assurance reviews of the consultant-developed products. Quality management will be done by Reclamation technical team members listed above for each of the sections listed during the times indicated.

In addition to the reviews discussed above, a separate Design, Estimating, and Construction Review occurred February 28 to March 2, 2017.

10. Acquisition Plan

The Acquisitions Plan is a summary of planned acquisitions for the overall project that describes general time frame, anticipated cost, and roles of those involved in the process. It will be updated upon changes in the project schedule, scope or budget. It is not intended to be a detailed acquisition plan for a specific contract as detailed by FAR section 7.105, which requires a more advanced set of plans and specifications to be complete.

Feasibility Report

- Contractor: URS Corporation, now named AECOM, through Indefinite Delivery Indefinite Quantity Contract.
- Date: 2012 and modified 2016 (Additional modification in progress for \$100,000)
- Cost: \$847,438 total; to date \$599,046 expended. Note that approximately \$400,000 of the total was for the progress report completed in 2013.
- Contracting Officer: Vacant
- Contracting Officer's Representative: Mike Dietl

Funding Agreements and Service Agreements

1. TSC Cost Estimating and Economics, \$69,000
2. TSC Design, Estimating and Construction Special Assessment, \$125,000
3. Denver Policy Design, Estimating, and Construction Special Assessment, \$24,000
4. TSC Cost Risk Workshop, \$56,000

Unfunded Needs (Policy Compliant Final Feasibility Report)

1. Geotechnical Investigations (\$850,000)
2. Risk and Uncertainty (\$900,000)
3. Updated Drawings, Quantities, Cost Estimates (\$1,000,000)
4. Report Revisions (\$800,000)
5. TSC Support (\$200,000)
6. Operational modeling effects to the CVP/SWP (\$300,000)
7. U.S. Fish and Wildlife Coordination Act (\$200,000)
8. DEC Special Assessment (\$100,000)

The Feasibility Report contract runs through May 2018. A no-cost time extension, modification, or additional contracts may be necessary dependent on scope and schedule changes. The Sites

Project Authority is contracting separately for the development of the EIS/EIR and the locally preferred alternative.

PMT Members Roles and Responsibilities

1. Scope Approval: David van Rijn and Shana Kaplan
2. Budget and Contract Approval: Ann Lubas-Williams

11. PMT Signatures

By signing the respective line below, the PMT member signifies their approval of the PMP and committal to the completion of the Project in accordance with the Scope, Schedule, and Budget presented in the PMP.

X

Federico Barajas
Deputy Regional Director

X

David Mooney
Sponsor, Bay-Delta Office Manager

X

David van Rijn
Regional Planning Officer

X

Donald Bader
NCAO Area Manager

X

Ann Lubas-Williams
Advisor, Program Coordination Manager

X

Anastasia Leigh
Regional Environmental Officer

X

Alicia Forsythe
San Joaquin Restoration Program Manager

X

Steve Melavic
Regional Engineer

X

Rick Woodley
Regional Resources Manager

X

Autumn Wolfe
Regional Financial Manager

X

Richard Welsh
Regional Construction Engineer

X

Brenda Davis
Acquisition Services Manager

X

Richard LaFond
Chief, Civil Engineering Services Division

Appendix A – Project Charter

The MOU between Reclamation and the SPA is the Project Charter.



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

IN REPLY REFER TO:

MP-720
ADM-11,00

JUL 14 2005

Mr. Leigh W. McDaniel
Chair
Sites Project Joint Power Authority
P.O. Box 1266
Willows, CA 95988

Subject: Memorandum of Understanding (MOU) for Completion of the North-of-the-Delta
Offstream Storage (NODOS) Investigation and Sharing of Costs

Dear Mr. McDaniel:

Enclosed for your records is one fully-signed original MOU for the NODOS investigation.

If you have any questions, please contact Mr. Dean Apostol at 916-978-5972 or
dapostol@usbr.gov.

Sincerely,

A handwritten signature in black ink that reads "David G. Murillo".

David G. Murillo
Regional Director

Enclosures

cc: SOL (KAllen)
MP-700 (MDenning)
MP-720 (RGanzfried, DApostol)

MEMORANDUM OF UNDERSTANDING
FOR COMPLETION OF THE
NORTH-OF-THE-DELTA OFFSTREAM STORAGE INVESTIGATION
AND SHARING OF COSTS

By and Between

U.S. Department of Interior,

Bureau of Reclamation, Mid-Pacific Region

And

Sites Joint Powers Authority

This Memorandum of Understanding (MOU) is made and entered into by and between the United States Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, and the Sites Joint Powers Authority (Sites JPA) for the purpose of undertaking and completing ongoing feasibility studies and related environmental compliance activities for the North-of-the-Delta Offstream Storage (NODOS) Investigation. NODOS is one of the CALFED Program Surface Storage Program Feasibility Studies identified in the CALFED Programmatic Record of Decision (August 2008) and study authorizations cited herein.

WHEREAS, Reclamation, through Federal Fiscal Year 2014, has expended approximately \$13 million on NODOS studies, agency and stakeholder coordination, public involvement activities, and over \$92 million overall on four CALFED Bay-Delta Program Surface Storage Feasibility Studies; the State of California, Department of Water Resources (DWR) has expended more than \$42 million on NODOS efforts and an estimated \$80 million for the CALFED Storage Program overall; and the Sites JPA has expended approximately \$1.75 million to date and intends to spend an additional \$3 million by December 1, 2016, for related studies and activities.

WHEREAS, Sites JPA is hereby joining Reclamation in conducting and advancing the ongoing NODOS Investigation, and these Parties recognize the unique relationships and opportunities, mutual and exclusive needs and dependencies, Federal and non-Federal standards and procedures, potential outcomes and applications of the study results, and related decision making and approval processes.

NOW, THEREFORE, in consideration of mutual and dependent covenants and conditions contained herein, which each Party acknowledges results in respective benefit, the Parties agree as follows:

1. Definitions - The following terms shall have the following meanings when used in this MOU:

- 1(a) **Parties:** Shall mean Reclamation and the Sites JPA.
- 1(b) **CALFED Bay-Delta Surface Storage Program Feasibility Studies:** Shall mean Feasibility Studies which are identified and/or authorized in the CALFED Bay-Delta Authorization Act (Public Law (P.L.) 108-361) and include the NODOS Investigation, Los Vaqueros Expansion, Upper San Joaquin River Basin Storage Investigation, and Shasta Lake Water Resource Investigation.
- 1(c) **Contributed Funds Agreement:** Shall mean a legal financial agreement used by Reclamation to receive "all moneys ... from any State, municipality, corporation, association, firm, district, or individual for investigations, surveys, construction work, or any other development work incident thereto involving operations similar to those provided for by the Reclamation law, are covered into the Reclamation fund and shall be available for expenditure for the purposes for which contributed in like manner as if said sums had been specifically appropriated for said purposes." 43 USC § 395. Any such Contributed Funds Agreement would be separate from this MOU.
- 1(d) **Cost-Share:** Shall mean the Parties' contributions as in-kind services as further defined in Articles 1(e) and 5(a) of this MOU, and contributed funds, if a separate Contributed Funds Agreement referenced in Article 1(c) is completed.
- 1(e) **In-Kind Services:** Shall mean eligible donated time and effort, real and personal property, and goods and services, as defined by the Department of Interior. In-kind services may be used as a cost-share, but the value of the in-kind contributions must be evaluated and documented. Valuation of in-kind services shall be in accordance with 2 CFR Part 300, including applicable sections of Appendices A-E, *Cost Principles for State, Local, and Indian Tribal Governments* (OMB Circular A-87).
- 1(f) **Intellectual Property:** Shall mean any invention that is legally protected through patents, copyrights, trademarks, and trade secrets, or otherwise protectable under Title 35 of the United States Code, under 7 USC § 2321, et seq., or under the patent laws of a foreign country.
- 1(g) **Confidential Information:** Shall mean any information that is privileged or protected from public release under the Freedom of Information Act (FOIA), 5 USC 552(b).
- 1(h) **Confidential Business Information:** Shall mean trade secrets or commercial or financial information that is privileged or confidential under the meaning of FOIA, 5 USC § 552(b)(4).
- 1(i) **Key Personnel:** Shall mean team members involved in the administration, management, or performance of the studies as defined in this MOU.
- 1(j) **Subject Invention:** Shall mean any invention or other intellectual property conceived or first reduced to practice under this MOU which is patentable or otherwise

protectable under Title 35 of the United States Code, under 7 USC § 2321, et seq., or under the patent laws of a foreign country).

- 1(k) Scope of MOU: Those activities, actions, and products set forth in Attachment A, *Project Management Plan*.
- 1(l) Term of MOU: That period set forth under Article 6 below.
2. Purpose of MOU - The Parties herein agree that the purpose of this MOU is to clearly define and implement the activities, schedule, and responsibilities to complete the NODOS Investigation and specified documents consistent with the attached Project Management Plan (PMP) and schedule, and to share costs as outlined in this MOU, consistent with the authorizations identified below and other pertinent Federal, State, and local laws and policy. If mutually agreed, the Parties may amend this MOU to cooperatively proceed with additional activities which would be identified in a revised Scope of MOU/PMP.
3. Authority for MOU - Reclamation authority to enter into this MOU:
 - 3(a) Reclamation Act of June 17, 1902 (Ch. 1093, 32 Stat. 388; 43 USC § 372, et seq.), and acts amendatory thereof and supplementary thereto.
 - 3(b) Feasibility Study Act, 1980 (P.L. 96-375).
 - 3(c) Central Valley Project Improvement Act, 1992 (Title 34 of P.L. 102-575).
 - 3(d) Consolidated Appropriations Resolution, 2003 (P.L. 108-7).
 - 3(e) Water Supply, Reliability, and Environmental Improvement Act, 2004 (P.L. 108-361, Sec. 103(d)(1)(A)(i)(I)).
 - 3(f) Consolidated Appropriations Act, 2014 (P.L. 113-76, Sec. 208).
4. Roles and Responsibilities of Reclamation and the Sites IPA
 - 4(a) Executive Steering Committee: Each Party to this MOU will assign an executive-leadership-level representative to participate on the Executive Steering Committee for the duration of the study. Members on the committee will provide both program and project leadership, address issues affecting study progress, and identify and strategize resolution of evolving issues or conditions. This committee will meet regularly (initially quarterly). Executive Steering Committee meetings will be used to identify and prioritize issues, develop methodologies and strategies to resolve issues, and to identify needed resources.
 - 4(b) A Project Management Team (PMT) shall be established. Each Party will identify a Project Manager and representatives to participate on the PMT, Project Management Group (PMG) and subgroups as specified in the attached PMP. Reclamation and the

JPA shall jointly chair the PMT. Meetings will be held as needed and used to track status of the studies, coordinate reviews of documents, share both Parties' perspectives on various topics, prepare briefings for the Executive Steering Committee, and any other items the Parties wish to discuss related to the studies. It is anticipated that PMT meetings will be held monthly. Meetings are intended to be in-person but may use remote technology. The PMT shall, on a quarterly basis, share an accounting of the actual expenses incurred by each Party under this MOU in accordance with Article 5 of this MOU.

- 4(c) A PMO shall be established to provide day-to-day oversight and review of work products. The PMO is expected to meet bi-weekly to maintain the progress of the project.
- 4(d) **Cooperative Partnership:** The Parties will participate cooperatively as both cost-share and study partners to complete the PMP activities effectively and efficiently, with intent to manage and perform joint and/or separate activities; monitor and account for actions; produce documents for review, revision, and distribution to support decision making, approval, and related actions. The Parties commit to sharing all required documents (e.g., technical memoranda, draft and final reports, supporting materials, work products, and summaries of expenditures and expenses) within their respective authorities. Each Party is responsible for ensuring their respective policy, technical, and legal requirements are met.

5. Financial Obligations

- 5(a) **Cost Sharing:** Reclamation and the Sites JPA will share the eligible costs of preparing Draft and Final Feasibility Reports, and environmental documents. Initially, Reclamation may expend up to \$2 million of in-kind services, subject to appropriation and availability of funds, toward reviewing administrative draft and final draft documents, as well as interim deliverables; the Sites JPA may expend up to \$5 million of in-kind services, subject to availability of funds, toward producing the administrative draft and final draft documents. In-kind services are defined in Articles 1(d) and 1(e) of this MOU.

5(a)(1) In accordance with Reclamation Directives and Standards, the Sites JPA shall account for their actual expenses incurred. These expenses shall be provided to Reclamation on a quarterly basis. Requirements of such accounting shall, at a minimum, include the following:

- 5(a)(1)(i) An explanation, in the form of a progress report, of the work performed for each activity completed during the reported quarter.
- 5(a)(1)(ii) Progress reports shall include a summary of all costs incurred by the Sites JPA. Allowable costs include payroll costs, contract costs, overhead costs, expense vouchers, and other

costs as provided in the applicable Office of Management and Budget (OMB) regulations. Each activity should be supported by reports from the Sites JPA financial systems providing a breakdown of actual costs incurred for the current submission and total costs to date for each activity.

5(a)(1)(iii) A cover letter or memorandum signed by an authorized representative of the Sites JPA should accompany the submission. The cover letter shall reference this MOU and any enclosures (i.e. progress report, expenses/payroll summary).

5(a)(1)(iv) Reclamation will prepare similar progress reports describing costs incurred by Reclamation and will submit them to the Sites JPA.

5(b) **Financial Obligations:** This MOU is not a funding document and does not obligate or transfer funds between the Parties.

5(c) **Scope of MOU/PMP:** Attachment A to this MOU details the initial scope of work and level of effort. When the Parties identify new tasks, specific scopes and requirements will be negotiated between the Parties. Attachment A to this MOU will be amended and any other non-Federal cost-share partners will be notified as appropriate.

5(d) **In-Kind Services:** Submission of claims for in-kind services shall be submitted quarterly. Quarterly accounting must detail work done for agreed upon items. Only costs incurred against a cost-share agreement need to be documented and submitted for approval. Project numbers must be used to distinguish various workloads. Items required for proper verification of work done include certified payroll, applicable contract numbers (i.e., consultant contracts), quarterly reports that coincide with Federal reporting requirements and generally accepted accounting principles, identification of cost-share partners, and scopes of work. Services cannot be included in any other Federal award in a current or prior period and their value must be based upon current market prices.

6. Term and Termination

6(a) **Term:** This MOU shall take effect upon the date of signature by both Parties and, unless terminated per Article 6(d), will expire 5 years from the date of Reclamation's signature to this MOU.

6(b) **Amendment:** If either Party desires a modification in this MOU, the Parties shall confer in good faith to determine the desirability of such modification. Any amendment must be mutually agreed upon in-writing by Reclamation and Sites JPA. Any such modifications shall not be effective until a written amendment to this MOU is signed by Reclamation and the Sites JPA.

- 6(c) **Addition of non-Federal Cost Share Partners:** Reclamation retains sole discretion to enter into additional MOUs for the purpose of undertaking and completing the NODOS Investigation and other studies related to the NODOS Investigation, including appropriate cost-share arrangements. Reclamation will notify the Sites JPA of such negotiations if they occur.
- 6(d) **Termination and Suspension:** Prior to the expiration of this MOU, upon 60 calendar days written notice to the other Party, either Party may elect without penalty to terminate this MOU or to suspend future performance under this MOU. If either Party suspends its performance, the other Party is relieved of any obligation to perform under this MOU until the suspension is terminated. Any such suspension shall remain in effect until either Reclamation or the Sites JPA terminates this MOU, or the suspending Party notifies the other Party of its intent to end the suspension and perform in accordance with this MOU.

7. Publications, Reports, and Confidentiality

- 7(a) **Publications:** The Parties understand and agree this MOU may be disclosed to the public in accordance with the Freedom of Information Act. Subject to the requirements of confidentiality and preservation of rights in Subject Inventions, described in Article 1(j) herein, either Party may publish the results of the NODOS feasibility studies described in this MOU. A formal Feasibility Report must be consistent with applicable Department of Interior and Reclamation procedures, requirements, policy, and Attachment A, PROVIDED:
- 7(a)(1) The other Party is allowed to review the proposed publication(s) at least 60 days prior to submission for publication by submission to the authorized agent.
- 7(a)(2) The final decision as to the publication content rests with the Party that writes the publication(s).
- 7(b) **Reports:** The results of the science, engineering, and technology data that are collected, compiled, and evaluated pursuant to this MOU, including interim administrative drafts and final draft reports and/or supporting documents, shall be shared and mutually interchanged by the Parties, consistent with Article 6 above and pertinent Reclamation directives, standards, and policy.
- 7(c) **Confidentiality:** Any Confidential Business Information used in implementing this MOU shall be clearly marked "CONFIDENTIAL" or "PROPRIETARY" by the submitter, and shall not be disclosed by the recipient without permission of the owner in accordance with applicable law (i.e., E.O. 12600). To the extent either Party orally submits Confidential Business Information to the other Party, the submitting Party will prepare a document marked "CONFIDENTIAL" or "PROPRIETARY" embodying or identifying in reasonable detail such orally submitted confidential information and provide the document to the other Party within 30 days of disclosure.

Any Confidential Information disclosed by one Party to the other Party shall remain confidential and protected from disclosure to the maximum extent allowed by applicable law. Neither Party shall be bound by confidentiality if the Confidential Information received from the other Party:

7(c)(1) Is already available to the public or the recipient.

7(c)(2) Becomes available to the public through no fault of the recipient.

7(c)(3) Is non-confidentially received from another Party legally entitled to it.

It shall not be a breach of this MOU if the recipient of Confidential Information is required to disclose Confidential Information by a valid order of a court or other government body, or as otherwise required by law, or as necessary to establish the rights of either Party under this MOU; PROVIDED THAT the recipient of Confidential Information shall provide prompt prior notice thereof to the other Party in order to seek a protective order or otherwise prevent such disclosure, and PROVIDED FURTHER THAT the Confidential Information otherwise shall continue to be confidential.

7(d) Intellectual Property: Unless otherwise agreed by the Parties, custody and administration of inventions made as a consequence of, or in direct relation to, the performance of activities under this MOU shall remain with the respective inventing Party. In the event that an invention is made jointly by employees of the Parties or an employee of an agency's contractor, the Parties shall consult and agree as to future actions toward establishment of patent protection for the invention.

8. General

8(a) Liability: It is understood and agreed that neither Party to this MOU shall be responsible for any damages or injuries arising out of the conduct of activities governed by this MOU, except to the extent that such damages or injuries were caused by the negligent or wrongful acts or omissions of its employees, agents, or officers. Reclamation's liability shall be limited by the Federal Tort Claims Act, 28 USC § 2671, *et seq.*

8(b) Limitations: This MOU sets out the Parties' intentions and objectives and does not apply to any person outside the Sites JPA and Reclamation. This MOU is not intended to, and does not create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity, by anyone against the United States, its agencies, its officers, or any person.

8(c) Notices: Notices between the signatories and copies of correspondence shall be sent to the Reclamation and Sites JPA points of contact below:

Board Chairman
Siles Joint Powers Authority
P.O. Box 1266
Willows, CA 95988

Regional Director
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95826

Telephone: 530-934-8881

Telephone: 916-978-5012

- 8(d) **Anti-Deficiency Act:** All activities, responsibilities, and commitments made under or pursuant to this MOU are subject to the availability of funds and each Parties' budget priorities, as determined by each Party. No provision herein shall be interpreted to require obligation or payment of funds. Further, no provision shall be interpreted in violation of the Anti-Deficiency Act, 31 U.S.C. 1341, and no liability shall accrue to the United States in the event that funds are not appropriated or allotted. No liability of one party may be transferred to the other party.
- 8(e) **Counterparts:** This MOU shall be executed in duplicate and each original, once fully executed, shall be equally effective.
- 8(f) **Subcontracting Approval:** A Party hereto desiring to obtain and use the services of a third party via contract or otherwise shall give prior notice to the other Party, including details of the contract or other arrangement. This requirement is to assure confidentiality is not breached and rights in subject inventions are not compromised.
- 8(g) **Assignment:** Neither Party has the right to assign this MOU or any of its responsibilities hereunder.
- 8(h) **Endorsement:** The Siles JPA shall not in any way state or imply that this MOU, or the results of this MOU, is an endorsement by the Federal Government, Department of the Interior, or Reclamation or its organizational units, employees, products, or services except to the extent permission is granted by an authorized representative of Reclamation.
- 8(i) **Regulatory Compliance:** Both Parties acknowledge and agree to comply with all applicable laws and regulations of the Federal, State, and local environmental, cultural, and paleontological resource protection laws and regulations as applicable to the activities or projects for this MOU. These regulatory compliance requirements may include but are not limited to, the National Environmental Policy Act (NEPA) including the Council on Environmental Quality and Department of the Interior regulations implementing NEPA, the Clean Water Act, the Endangered Species Act, consultation with potentially affected Tribes, and consultation with the State Historic Preservation Office.
- 8(j) **Disputes:** Any dispute arising under this MOU, which cannot be readily resolved, shall be submitted jointly to the key personnel officials, identified above. Each Party agrees to seek in good faith to resolve the issue through negotiation, or other forms of

mediating dispute resolution processes, if mutually acceptable to the Parties.
Pending the resolution of any dispute or claim, the Parties agree that performance of
all obligations shall be pursued diligently.

9. Signatures and Authorities

In Witness Whereof, the Parties execute this MOU on the date and year indicated below.

9(a) Bureau of Reclamation

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
MID-PACIFIC REGION

Dated: 8/14/2015 By: David C. Mueller
Regional Director

9(b) Sites Joint Powers Authority

SITES JOINT POWERS AUTHORITY

Dated: 6/17/2015 By: [Redacted Signature]
Board Chairman

Appendix B – Stakeholder Plan

See Section 8 for the stakeholder plan.

Appendix C – Schedule

Table Appendix C. North-of-Delta Offstream Storage Compressed Schedule Ending November 30, 2017 (Note: A new schedule is in development for the Final Feasibility Report in Coordination with the SPA.)

Task Name	Duration	Start	Finish
Federal Feasibility Report	203 days	Mon 6/20/16	Wed 3/29/17
Kickoff Meeting for Feasibility Study (Task 16)	0 days	Thu 7/21/16	Thu 7/21/16
Cost Estimating Tech Memo (Task 11)	48 days	Tue 7/5/16	Thu 9/8/16
Draft Cost Estimating Memo (Task11)	22 days	Tue 7/5/16	Wed 8/3/16
Reclamation Review of Draft Cost Estimating Tech Memo (Task 11)	10 days	Thu 8/4/16	Wed 8/17/16
Cost Estimating Review Meeting (Task 12)	1 day	Thu 8/18/16	Thu 8/18/16
Final Cost Estimating Approach Memo (Task 11)	15 days	Fri 8/19/16	Thu 9/8/16
Economics Tech Memo (Task 10)	50 days	Tue 7/5/16	Mon 9/12/16
Draft Economics Approach Memo (Task 10)	28 days	Tue 7/5/16	Thu 8/11/16
Reclamation Review of Economics Approach Memo (Task 10)	7 days	Fri 8/12/16	Mon 8/22/16
Economics Review Meeting (Task 12)	1 day	Tue 8/23/16	Tue 8/23/16
Final Economics Approach Memo (Task 10)	15 days	Tue 8/23/16	Mon 9/12/16
Geotechnical Investigation Study Plan on Holthouse Reservoir (Task 19)- ON HOLD	0 days	Mon 6/20/16	Mon 6/20/16
Produce Admin Draft Federal Feasibility Report for Mid Pacific Management Review (Task 15)	190 days	Thu 7/7/16	Wed 3/29/17
Graphic Revisions (Task 13)	160 days	Thu 7/7/16	Wed 2/15/17
Executive Summary	20 days	Tue 1/31/17	Mon 2/27/17
Prepare Draft Executive Summary	10 days	Tue 1/31/17	Mon 2/13/17
Reclamation Review	5 days	Tue 2/14/17	Mon 2/20/17
Prepare Revised Executive Summary	5 days	Tue 2/21/17	Mon 2/27/17
Chapter 1: Introduction	60 days	Mon 8/1/16	Fri 10/21/16
Prepare Draft	30 days	Mon 8/1/16	Fri 9/9/16
Reclamation Review	5 days	Mon 9/12/16	Fri 9/16/16
Prepare Revised Chapter 1	25 days	Mon 9/19/16	Fri 10/21/16
Chapter 2: Problems, Needs, and Opportunities	60 days	Mon 8/1/16	Fri 10/21/16
Prepare Draft	35 days	Mon 8/1/16	Fri 9/16/16
Reclamation Review	10 days	Mon 9/19/16	Fri 9/30/16
Prepare Revised Chapter 2	15 days	Mon 10/3/16	Fri 10/21/16

Task Name	Duration	Start	Finish
Chapter 3: Planning Objectives, Constraints, Alt Development Process	60 days	Mon 8/1/16	Fri 10/21/16
Prepare Draft	35 days	Mon 8/1/16	Fri 9/16/16
Reclamation Review	10 days	Mon 9/19/16	Fri 9/30/16
Prepare Revised Chapter 3	15 days	Mon 10/3/16	Fri 10/21/16
Chapter 4: Potential Offstream Storage Locations	60 days	Mon 8/1/16	Fri 10/21/16
Prepare Draft	40 days	Mon 8/1/16	Fri 9/23/16
Reclamation Review	10 days	Mon 9/26/16	Fri 10/7/16
Prepare Revised Chapter 4	10 days	Mon 10/10/16	Fri 10/21/16
Chapter 5: Conveyance Facilities and Reservoir Size	60 days	Mon 8/1/16	Fri 10/21/16
Prepare Draft	40 days	Mon 8/1/16	Fri 9/23/16
Reclamation Review	10 days	Mon 9/26/16	Fri 10/7/16
Prepare Revised Draft Chapter 5	10 days	Mon 10/10/16	Fri 10/21/16
Chapter 6: Alternative Formulation and Evaluation	110 days	Tue 9/13/16	Mon 2/13/17
Establish Benefits Methodology - Alts A, B, and C	64 days	Tue 9/13/16	Fri 12/9/16
Alt A, B, C Economic Benefits Update (Task 15)	34 days	Tue 9/13/16	Fri 10/28/16
Alt A, B, C Allocation (Task 15)	10 days	Mon 10/31/16	Fri 11/11/16
Alt A, B, C Financial Feasibility (Task 15)	5 days	Mon 11/14/16	Fri 11/18/16
Auburn Cost and Yield	1 day	Fri 12/9/16	Fri 12/9/16
Decision on Ownership Scenario as applied to Alt B	1 day	Fri 12/9/16	Fri 12/9/16
Alternative D Economic Analysis	55 days	Tue 11/1/16	Mon 1/16/17
Alt D Effects Analysis (Task 15)	14 days	Tue 11/1/16	Fri 11/18/16
Alt D Economics (Task 15)	20 days	Tue 11/22/16	Mon 12/19/16
Alt D Allocation (Task 15)	15 days	Tue 12/20/16	Mon 1/9/17
Alt D Financial Feasibility (Task 15)	5 days	Tue 1/10/17	Mon 1/16/17
EQ and OSE (Task 15)	45 days	Tue 9/13/16	Mon 11/14/16
Environmental Quality and Other Social Effects Revisions Draft Sections for Review Alts A, B, C (Task 15)	30 days	Tue 9/13/16	Mon 10/24/16
Review by Authority and Reclamation	10 days	Tue 10/25/16	Mon 11/7/16
Environmental Quality and Other Social Effects Draft Incorporating Comment Responses and Alt D (Task 15)	5 days	Tue 11/8/16	Mon 11/14/16
Prepare Draft	6 days	Tue 1/17/17	Tue 1/24/17
Reclamation Review	7 days	Wed 1/25/17	Thu 2/2/17

Task Name	Duration	Start	Finish
Prepare Revised Draft Chapter 6	7 days	Fri 2/3/17	Mon 2/13/17
Chapter 7: Preliminary Proposed Plan	20 days	Tue 1/17/17	Mon 2/13/17
Prepare Draft	10 days	Tue 1/17/17	Mon 1/30/17
Reclamation Review	5 days	Tue 1/31/17	Mon 2/6/17
Prepare Revised Chapter 7	5 days	Tue 2/7/17	Mon 2/13/17
Chapter 8: Implementation Requirements	20 days	Tue 1/17/17	Mon 2/13/17
Prepare Draft	10 days	Tue 1/17/17	Mon 1/30/17
Reclamation Review	5 days	Tue 1/31/17	Mon 2/6/17
Prepare Revised Chapter 8	5 days	Tue 2/7/17	Mon 2/13/17
Chapter 9: Findings and Conclusions	20 days	Tue 1/17/17	Mon 2/13/17
Prepare Draft	10 days	Tue 1/17/17	Mon 1/30/17
Reclamation Review	5 days	Tue 1/31/17	Mon 2/6/17
Prepare Revised Chapter 9	5 days	Tue 2/7/17	Mon 2/13/17
Chapter 10: Recommendations	20 days	Tue 1/31/17	Mon 2/27/17
Prepare Draft	10 days	Tue 1/31/17	Mon 2/13/17
Reclamation Review	5 days	Tue 2/14/17	Mon 2/20/17
Prepare Revised Chapter 10	5 days	Tue 2/21/17	Mon 2/27/17
Chapter 11: Glossary	60 days	Thu 9/1/16	Wed 11/23/16
Prepare Draft	40 days	Thu 9/1/16	Wed 10/26/16
Reclamation Review	10 days	Thu 10/27/16	Wed 11/9/16
Prepare Revised Chapter 11	10 days	Thu 11/10/16	Wed 11/23/16
Chapter 11: References	2 days	Tue 2/28/17	Wed 3/1/17
Appendix A (Task 15)	55 days	Thu 7/21/16	Wed 10/5/16
Draft Plan Formulation Appendix A (Task 15)	30 days	Thu 7/21/16	Wed 8/31/16
Reclamation Review of Appendix A	10 days	Thu 9/1/16	Wed 9/14/16
Final Plan Formulation Appendix A (Task 15)	15 days	Thu 9/15/16	Wed 10/5/16
Appendix B	138 days	Mon 9/19/16	Wed 3/29/17
Alt A, B, C Cost Estimate Update (Task 9)	84 days	Mon 9/19/16	Thu 1/12/17
Prepare Draft Cost Estimate Update (Task 9)	20 days	Mon 9/19/16	Fri 10/14/16
Review by Authority and Reclamation	15 days	Mon 10/31/16	Fri 11/18/16
Develop Revised Cost Estimate Incorporating Comment Responses	38 days	Tue 11/22/16	Thu 1/12/17
Incorporate Alternative D into Engineering Appendix and Cost Estimate for other Alternatives	35 days	Fri 12/23/16	Thu 2/9/17

Task Name	Duration	Start	Finish
Prepare Draft Engineering Appendix B Update Including Alt D (Task 15)	15 days	Fri 12/23/16	Thu 1/12/17
Review by Authority and Reclamation	10 days	Fri 1/13/17	Thu 1/26/17
Prepare Revised Engineering Appendix B (Task 15)	10 days	Fri 1/27/17	Thu 2/9/17
DEC Review of Cost Estimate, Appendix B, and Drawing Package	42 days	Tue 1/31/17	Wed 3/29/17
Risk Assessment Workshop	3 days	Tue 1/31/17	Thu 2/2/17
DEC Review and Comment (Task 9)	5 days	Mon 2/27/17	Fri 3/3/17
DEC Review Comment Response Table (Task 9)	15 days	Thu 3/9/17	Wed 3/29/17
Appendix C (Task 15)	30 days	Tue 1/17/17	Mon 2/27/17
Draft Economics Appendix C - Alts. A, B, C (Task 15)	5 days	Tue 1/17/17	Mon 1/23/17
Reclamation Review of Appendix C - Alts A, B, C	10 days	Tue 1/24/17	Mon 2/6/17
Revised Economics Appendix C Incorporating Comment Responses - Alts A, B, C, and D (Task 15)	15 days	Tue 2/7/17	Mon 2/27/17
Appendix D Real Estate (Task 18)	52 days	Thu 7/21/16	Fri 9/30/16
Draft Real Estate Appendix D 2017 Revisions for Alt A, B, C and D (Task 18)	30 days	Thu 7/21/16	Wed 8/31/16
Reclamation Review (Task 18)	12 days	Thu 9/1/16	Fri 9/16/16
Finalize Real Estate Appendix D (Task 18)	10 days	Mon 9/19/16	Fri 9/30/16
Appendix E: Recreation (Task 17)	70 days	Thu 7/21/16	Wed 10/26/16
Draft Recreation Appendix E (Task 17)	50 days	Thu 7/21/16	Wed 9/28/16
Reclamation Review (Task 17)	10 days	Thu 9/29/16	Wed 10/12/16
Finalize Recreation Appendix E (Task 17)	10 days	Thu 10/13/16	Wed 10/26/16
Appendix F (Task 15)	50 days	Mon 10/31/16	Fri 1/6/17
Draft Fish Effects Appendix F (Task 15)	20 days	Mon 10/31/16	Fri 11/25/16
Reclamation Review of Appendix F	10 days	Mon 11/28/16	Fri 12/9/16
Revised Fish Effects Appendix F (Task 15)	20 days	Mon 12/12/16	Fri 1/6/17
Appendix G (Task 15)	60 days	Mon 10/31/16	Fri 1/20/17
Draft Hydrology and Water Management/Operations Plan Appendix G (Task 15)	30 days	Mon 10/31/16	Fri 12/9/16
Reclamation Review of Appendix G	15 days	Mon 12/12/16	Fri 12/30/16
Revised Hydrology and Water Management/Operations Plan Appendix G (Task 15)	15 days	Mon 1/2/17	Fri 1/20/17
Appendix H (Task 15)	70 days	Mon 10/31/16	Fri 2/3/17
Draft Hydropower Appendix H from PARO	45 days	Mon 10/31/16	Fri 12/30/16
Review of Hydropower Appendix	10 days	Mon 1/2/17	Fri 1/13/17
Revisions to Hydropower Appendix H by PARO/DWR	15 days	Mon 1/16/17	Fri 2/3/17

Task Name	Duration	Start	Finish
Assemble Admin Draft Feasibility Report - Go to Line 146 for Subsequent Review Process	5 days	Tue 2/28/17	Mon 3/6/17
EIR/EIS	377 days	Mon 6/20/16	Tue 11/28/17
Response to Outstanding Comments on 2014 Version	30 days	Mon 6/27/16	Fri 8/5/16
Operations Plan	35 days	Mon 6/20/16	Fri 8/5/16
Review by Authority and Reclamation	20 days	Mon 6/20/16	Fri 7/15/16
Revised Operations Plan Incorporating Authority and Reclamation Comments	15 days	Mon 7/18/16	Fri 8/5/16
CALSIM Operations Modeling for Alt D (EIR/EIS Baseline)	90 days	Mon 6/27/16	Fri 10/28/16
Develop Updated Operations Plan with WSIP Requirements for Application	40 days	Mon 10/31/16	Fri 12/23/16
Develop Project Description and Other Initial Chapters	110 days	Mon 7/11/16	Fri 12/9/16
Develop Draft Chapters 1, 2, 4, 5, 28, and 29	80 days	Mon 7/11/16	Fri 10/28/16
Review by Authority and Reclamation	15 days	Mon 10/31/16	Fri 11/18/16
Develop Revised Initial Chapters Incorporating Comment Responses	15 days	Mon 11/21/16	Fri 12/9/16
Develop Other Chapters Unaffected by Operations	95 days	Tue 8/9/16	Mon 12/19/16
Develop Draft Chapters 3, 16, 17, 19, 21, 23, 24, 26, 27, 30	70 days	Tue 8/9/16	Mon 11/14/16
Develop Preliminary Executive Summary and Preliminary Versions of Chapters 6, 7, 12, and 13	70 days	Tue 8/9/16	Mon 11/14/16
Review by Authority and Reclamation	10 days	Tue 11/15/16	Mon 11/28/16
Develop Revised Chapter Incorporating Comment Responses	15 days	Tue 11/29/16	Mon 12/19/16
Develop Impacts and Mitigation for Chapters Affected by Operations	95 days	Tue 11/1/16	Mon 3/13/17
Develop Draft Chapters 3, 16, 17, 19, 21, 23, 24, 26, 27, 30; Develop Draft Chapters 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 20, 22, 25, 31, 32, 33, 34, 35, 36, 37, 38, 39	70 days	Tue 11/1/16	Mon 2/6/17
Review by Authority and Reclamation	10 days	Tue 2/7/17	Mon 2/20/17
Develop Revised Chapter Incorporating Comment Responses	15 days	Tue 2/21/17	Mon 3/13/17
Develop Executive Summary	90 days	Mon 10/31/16	Fri 3/3/17
Develop Draft Executive Summary	70 days	Mon 10/31/16	Fri 2/3/17
Review of Executive Summary by Authority and Reclamation	10 days	Mon 2/6/17	Fri 2/17/17
Develop Revised Executive Summary Incorporating Comment Responses	10 days	Mon 2/20/17	Fri 3/3/17
Produce Admin Draft EIR/EIS for Mid Pacific Management Review	0 days	Mon 3/13/17	Mon 3/13/17
Specific to the EIR/EIS, the items below are not contracted for and require discussion with Sites JPA	376 days	Mon 6/20/16	Mon 11/27/17
Consolidated Review for EIR/S and FR	377 days	Mon 6/20/16	Tue 11/28/17

Task Name	Duration	Start	Finish
Mid-Pacific Manager, JPA, DWR, and Solicitor (and Technical Team) Review of Admin Draft EIS and Feasibility Report	15 days	Tue 3/14/17	Mon 4/3/17
Respond to Mid-Pacific Manager, JPA, DWR, and Solicitor (and Technical Team) Comments	10 days	Tue 4/4/17	Mon 4/17/17
Prepare Admin Draft Incorporating Responses to DWR and Sites JPA Admin Draft EIS and Feasibility Report Comments	10 days	Fri 4/21/17	Thu 5/4/17
Cooperating Agency Review?	50 days	Fri 5/5/17	Thu 7/13/17
Prepare Draft Feasibility Report and EIS for Public Review and Comment	10 days	Fri 5/5/17	Thu 5/18/17
Post Notice of Availability and Public Meeting Dates for Draft EIS in Federal Register	1 day	Fri 5/19/17	Fri 5/19/17
Posting in the Federal Register	0 days	Mon 5/29/17	Mon 5/29/17
Public Review of Draft Feasibility Report and Draft EIS/EIR	34 days	Tue 5/30/17	Fri 7/14/17
Incorporate Public Comments and Prepare for Regional Director and Denver Policy Review (Technical Team Review Concurrent with Regional Director Review)	26 days	Mon 7/17/17	Mon 8/21/17
Regional Director and Denver Policy Review of Admin Final Feasibility Report and Final EIS	5 days	Tue 8/22/17	Mon 8/28/17
Respond to Regional Director and Denver Policy Comments	5 days	Tue 8/29/17	Mon 9/4/17
Prepare Regional Director's Final Feasibility Report and EIS	5 days	Tue 9/5/17	Mon 9/11/17
Prepare Denver Policy Review Report	5 days	Tue 9/12/17	Mon 9/18/17
Transmit Regional Director's Final Feasibility Report, EIS, and Denver Policy Review Report	5 days	Tue 9/19/17	Mon 9/25/17
Commissioner's Review of Regional Director's Feasibility Report/EIS	5 days	Tue 9/26/17	Mon 10/2/17
Respond to Commissioner's Review Comments	5 days	Tue 10/3/17	Mon 10/9/17
Prepare Commissioner's Final Feasibility Report/EIS	5 days	Tue 10/10/17	Mon 10/16/17
Secretary of Interior Review of Commissioner's Final Feasibility Report/EIS	5 days	Tue 10/17/17	Mon 10/23/17
Respond to Secretary of Interior Review Comments	5 days	Tue 10/24/17	Mon 10/30/17
Prepare Secretary of Interior's Final Feasibility Report/EIS	5 days	Tue 10/31/17	Mon 11/6/17
OMB Review of Secretary's Final Feasibility Report/EIS	5 days	Tue 11/7/17	Mon 11/13/17
Respond to OMB Review Comments	5 days	Tue 11/14/17	Mon 11/20/17
Prepare Final Feasibility Report for Transmission to Congress	5 days	Tue 11/21/17	Mon 11/27/17
OMB Transmission of Final Feasibility Report to Congress	1 day	Tue 11/28/17	Tue 11/28/17

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Appendix D North-of-the-Delta Offstream Storage Budget Estimate

Budget Estimate								
	Budget and Actual expenses for each fiscal since project started							
Entity	FY		FY 2017	FY 2018	FY 2019	Total	Total	WBS
	Estimate	Actual	Estimate	Estimate	Estimate	Estimate	Actual	
Initiation Phase								
Planning Phase								RX.18527906.60000
BOR	\$	14,435,000	\$ 830,000	\$ 674,000	\$ 200,000	\$ 16,139,000		
DWR	\$	39,994,000				\$ 39,994,000		
SPA	\$	1,449,950	\$ 9,841,806	\$ 3,819,124	To Be Determined per	\$ 15,110,880		
Design Phase								
Procurement Phase								
Execution								
Closeout								
Total	\$	-	\$ 55,878,950	\$ 10,671,806	\$ 4,493,124	\$ 200,000	\$ 71,243,880	
		↓	↓	↓	↓	↓		
			Federal Feasibility Report	Final EIS/EIR				

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Appendix E – Change Management Plan

All proposed changes to the project scope, budget, and schedule that are beyond the PM's authority as described below will be requested on the Change Request Form and authorized by the PMT members and/or Project Sponsor.

Scope

A change in scope is defined as any change in work effort or products from that documented in the Scope of Work section of this document. Any change in scope will be submitted to the PMT by the respective PM. The PMT shall review it and present it to the ESC for approval. The PM will provide analysis and recommendations to the PMT using the attached request form.

Budget

A change in budget is defined as any change in work effort or products from that documented in the Project's Baseline Budget. The PMs are authorized to commit up to but not exceed an additional 10 percent of the Project Management Reserve to any task activity in the Baseline Budget without first obtaining approval from the PMT. Any change in budget beyond that requires prior approval of the PMT using the attached request form. The PM will report any changes in the budget during their weekly project updates. No budget reserve is available at this time.

Schedule

A change in schedule is defined as any change in task duration from that documented in the Total Project Baseline Schedule. The PMs are authorized to commit up to but not exceed an additional 2 days of the Free Float to any task activity in the Baseline Schedule without first obtaining approval from the PMT. The PMs are not authorized to commit Total Float without prior approval of the PMT and any change in Free Float beyond 2 days requires prior approval of the PMT using the attached request form. The PM will report any changes in the schedule during their weekly project updates. There is no schedule float at this time.

Re-Baseline the Project

The Project will be re-baselined if the budget exceeds 10 percent variance from baseline or the Schedule exceeds 10 percent variance in any phase from baseline.

Change Request Form

Project: Sites (NODOS) Draft EIS/EIR & Draft Feasibility Report

Request No.: _____

Project Phase & Task Name: _____

Budget: Impact? \$____ Amount of Change in dollars.

Schedule: Impact? ____ Amount of Change in days.

Scope: Impact? Description below.

Description:

Include a description of the change either here or attached; this should also include a revised schedule and budget document.

Appendix F – Quality Management Plan

See Section 9.

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Appendix G – Risk Register

Risk Management Plan														
Date Risk ID'd (last updated)	Risk ID	Description of Risk/Constraint	Initial Qualitative Risk Analysis				Quantitative Impact	Risk Response(s)	Qualitative Risk Analysis w/Response			Status	Date Risk Resolved or Updated	Lessons Learned
		(Include root causes, sources of information, the tolerance of the risk to project constraints, assumptions etc.)	<u>Project Objective(s) Impacted (in order of priority):</u> Schedule Cost Scope	<u>Impact</u> (1 - 4) 1=low 2=moderate 3=high 4=v. high	<u>Probability</u> (1-4) 1=low 2=moderate 3=high 4=v. high	<u>Priority</u> (Impact x probability) 1-3 = Low 4-6 = Medium 8-9 = High 12-16 = Urgent	(Description of Impact)	(Responses to reduce or eliminate the risk. Identify person responsible for mitigating action.)	<u>Impact</u> (1 - 4) 1=low 2=moderate 3=high 4=v. high	<u>Probability</u> (1-4) 1=low 2=moderate 3=high 4=v. high	<u>Priority</u> (Impact x probability) 1-3 = Low 4-6 = Medium 8-9 = High 12-16 = Urgent		Items Resolved will have a date and be filled green	
Initiation Phase														
						0					0			
Planning Phase														
06/29/16	PP-1	Holthouse Dam Geotechnical Investigation	C, Sc	1	4	4	Unresolved Design Estimating Review Comment, Appraisal Level Costs for Holthouse Dam would result in additional discussions with Denver Policy and possibly require a deviation from policy.	Initiate Geotechnical Investigation with right of entry and environmental permitting for investigation. RD to reprioritize drill crews. Technical staff to gain rights of entry and develop environmental permits. Potential exist to get a deviation from policy and use contingencies that are developed in conjunction with Denver Policy and Denver Technical Service Center.	4	3	12	Conduct a Design Engineering Cost Special Assessment to determine level of compliance with 2007 DEC and 2014 DEC.	On-going	

03/08/17	PP-1.1	Engineering Designs and Cost Estimate	S, C, Sc	4	4	<p>Priority (Impact x Probability) 1-3 = Low 4-6 = Medium 8-9 = High 12-16 = Urgent</p>	<p>The 2017 DEC Special Assessment determined that the engineering designs for the investigation for all alternatives were at approximately a 50% Feasibility Design Level. Particular emphasis is on the designs for the Pump Generating Facilities, support facilities such as offices and warehouses, and material borrow pits.</p>	<p>Implement a comprehensive geotechnical investigation for facilities and borrow areas lacking information. Revise designs and cost estimates based on new geotechnical information. Update drawings and cost estimates based on lacking information. Conduct a risk work shop and Monte Carlo simulation to assign cost contingencies. Document high risks in recommendations and finding in the draft feasibility report and conduct work as necessary between draft and final feasibility report.</p>	4	4	16	Coordinating with Sites JPA and PMT to determine course of action.		
06/29/16	PP-2	Receipt of a completed admin draft EIS/EIR from Sites JPA by March 1, 2017	S, C, Sc	4	2	8	<p>If an admin draft EIS/EIR is not received by March 1, 2017 from the JPA we will not be able to meet our November 30, 2017, legislated deadline.</p>	<p>Work with Sites JPA to provide an admin draft EIS. Identify gaps and issue new PR to cover gaps. No additional funding has been provided to issue PR. Gaps include lack of information for analysis and use of out dated information.</p>	4	3	12	Coordinating with Sites JPA	Ongoing	Clearly define Reclamation and local roles in delivering products required by legislation and policy

06/29/16	PP-3	Receipt of Locally Preferred Alternative by November 1, 2016	S, C, Sc	4	2	8	Feasibility Report will not include a locally preferred alternative (no longer a risk, SPA has provided locally preferred alternative.	Work with Sites JPA to provide a locally preferred alternative by Nov 1, 2016, or issue feasibility report with DWR produced EIS/EIR as posted on website for public review.	4	3	12	Coordinating with Sites JPA	Ongoing
06/29/16	PP-4	Environmental Permits deferred to Design and Development Phase (Environmental Feasibility)	S, C, Sc	2	4	8	Feasibility Report will not include environmental permits only National Environmental Policy Act compliance for Congressional authorization. This will result in scope, schedule, and cost creep while not ensuring construction.	Clearly communicate this in the Feasibility Report, EIS, Briefing Papers, and public discussions.	4	4	16	Clearly communicate this in the Feasibility Report, EIS, Briefing Papers, and public discussions.	Ongoing
06/29/16	PP-4	Operations Agreement Deferred to Design and Development Phase (Technical Feasibility)	S, C, Sc	4	4	16	Sites Reservoir cannot begin filling and releases until the Coordinated Operating Agreement is modified to include Sites Reservoir. This will require a new biological opinion from NMFS and USFWS for operation of the Central Valley Project and State Water Project	Develop a new system wide model for the addition of new reservoirs and begin planning for formal consultation on reservoir additions including Sites, Temperance Flat, Shasta Enlargement, and Los Vaqueros Enlargement.	4	4	16	On-going discussion between MP-700, Central Valley Operations, California Department of Water Resources, and Sites JPA	Ongoing
06/29/16	PP-5	Cost Allocation (Financial Feasibility)	S, C, Sc	4	4	16	Federal/State/Sites JPA cost sharing and allocation for construction and operation is undetermined	Identify and recommend cost sharing and allocation in coordination with Denver Policy, Sites JPA, and California Water Commission for Draft Feasibility Report. Adjust	4	4	16	On-going development of cost allocation with initial multi-agency discussions in August 2017	Ongoing

								cost sharing and cost allocation for Final Feasibility Report.					
06/29/16	PP-6	Compliance with new Principles, Requirements and Guidelines	C, Sc	1	1	1	Additional detail and analyses may be required by reviewers that believe the investigation must comply with the 2015 Principles, Requirements, and Guidelines for Water Resource Projects	Communicate with reviewers and the public that we are following the 1983 Principles and Guidelines for Water Resource Projects. Include determination and finding letter if in existence. If not in existence work with Denver Policy to develop determination and finding documentation.	2	2	4	Raise as a topic for discussion with Denver Policy. Issue resolved Denver has stated use of 1983 Principles and Guidelines is appropriate. Issue may resurface as staff turns over.	Ongoing
06/29/16	PP-7	Technical, Management, and Legal Review	S, C, Sc	3	3	9	Review may cause additional scope in revising documents to respond to review comments.	Include time in schedule to respond to comments	3	2	6	Three months have been included in the schedule for this review	Ongoing
06/29/16	PP-8	Sites JPA and DWR Review	S, C, Sc	3	3	9	Review may cause additional scope in revising documents to respond to review comments.	Include time in schedule to respond to comments	3	2	6	Two months have been included in the schedule for this review	Ongoing
06/29/16	PP-8	Agency, California Water Commission, and Public Review	S, C, Sc	4	4	16	Review may cause additional scope in revising documents to respond to review comments. Sites JPA does intend to do concurrent CEQA public review and comment. The result will be that Reclamation may have to release the draft twice or issue a supplemental EIS	Include time in schedule to respond to comments. Include time for supplemental environmental documents during design and construction.	4	4	16	Two months have been included in the schedule for this review. This is not sufficient time if additional analysis is required.	Ongoing

							post authorization. It can be anticipated that one or multiple supplemental EISs will be necessary during design and construction.						
06/29/16	PP-9	RD Review (5 days)	S, C, Sc	4	4	16	Review may cause unfunded and unplanned scope creep in revising documents to respond to review comments. This is comment dependent, for example a commenter may reasonably suggest an additional model run that would require a contract change and additional time.	Include time in schedule to respond to comments. Develop contract vehicle to address and use option items.	4	4	16	Insufficient time is included in the schedule for RD Review	Ongoing
06/29/16	PP-10	Denver Policy Review (5 days)	S, C, Sc	4	4	16	Review may cause unfunded and unplanned scope creep in revising documents to respond to review comments. This is comment dependent, for example a commenter may reasonably suggest an additional model run that would require a contract change and additional time.	Include time in schedule to respond to comments. Develop contract vehicle to address and use option items.	4	4	16	Insufficient time is included in the schedule for RD Review	Ongoing
06/29/16	PP-11	Commissioner Review (5 days)	S,C,S	4	4	16	Review may cause unfunded and unplanned scope creep in revising documents to respond to review comments. This is comment	Include time in schedule to respond to comments. Develop contract vehicle to address and use option items.	4	4	16	Insufficient time is included in the schedule for RD Review	Ongoing

							dependent, for example a commenter may reasonably suggest an additional model run that would require a contract change and additional time.						
06/29/16	PP-12	Secretary Review (5 days)	S, C, Sc	4	4	16	Review may cause unfunded and unplanned scope creep in revising documents to respond to review comments. This is comment dependent, for example a commenter may reasonably suggest an additional model run that would require a contract change and additional time.	Include time in schedule to respond to comments. Develop contract vehicle to address and use option items.	4	4	16	Insufficient time is included in the schedule for RD Review	Ongoing
06/29/16	PP-13	OMB Review	S, C, Sc	4	4	16	Review may cause unfunded and unplanned scope creep in revising documents to respond to review comments. This is comment dependent, for example a commenter may reasonably suggest an additional model run that would require a contract change and additional time.	Include time in schedule to respond to comments. Develop contract vehicle to address and use option items.	4	4	16	Insufficient time is included in the schedule for RD Review	Ongoing
7/19/2016	PP-14	Climate Change Analysis is out of date. Current plan is to use existing information from the 2014 EIS/EIR. This is not consistent with the Basin Study and Policy	S, C, Sc	3	4	12	Using old climate change data would not be consistent with Reclamation Policy or other planning feasibility reports such as Upper San	Develop MP position and contract for support to include climate change modeling consistent with the Sacramento				Working with SPA on climate change. Use of old data for NEPA/CEQA analysis will	

Joaquin, San Luis, and San Joaquin Basin Study. No additional funding has been provided. Significant schedule delay if item is not added

be used. SPA developed new analysis for WSIP application for Alternative D.

Design & Development Phase										
DDP-1					0				0	
DDP-2					0				0	
Procurement Phase										
ACQ-1					0				0	
ACQ-2					0				0	
Execution Phase										
EP-1					0				0	
EP-2					0				0	
Closeout Phase										
CP-1					0				0	
CP-2					0				0	
Miscellaneous Issues (things that affect 2 or more Project Phases or are not otherwise covered)										
MI-4					0				0	
MI-5					0				0	
MI-6					0				0	

Probability Definitions				
Schedule	Non-Critical Path delays that will not impact critical path	Non-Critical Path delays that may affect Critical Path & Critical Path delays <2 weeks	2-4 week delay to critical path	>4 week delay to critical path
Scope	N/A	N/A	Additional work that will not affect the Critical Path	Any additional work that will affect the Critical Path
Probability Defined	Low= Unlikely (<25%)	Moderate= Possible (25-75%)	High= Likely (75-90%)	V. High= Probable (90%+)

Defined Conditions for Impact Scales of a Risk on Major Project Objectives				
Project Objectives	Low	Moderate	High	Very High
	1	2	3	4
Cost	<10% Cost Increase	10 - 20% cost increase	20 - 40% cost increase	>40% cost increase

Schedule	Non-critical path delays that will not impact critical path	Non-Critical Path delays that may affect Critical Path & Critical Path delays <2 weeks	2-4 week delay to critical path	>4 week delay to critical path
Scope	N/A	N/A	Additional work that will not affect the Critical Path	Any additional work that will affect the Critical Path
Probability Defined	Low= Unlikely (<25%)	Moderate= Possible (25-75%)	High= Likely (75-90%)	V. High= Probable (90%+)



BUREAU OF
RECLAMATION

SUBSET OF DRAFT PMP (PRE-CONSTRUCTION)

Project Title: North of Delta Offstream Storage
(NODOS)/Sites Reservoir Project



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SCOPE OF WORK

Reclamation and Sites Project Authority are planning to complete the following key pre-construction activities:

Definite Plan Report

Prior to physical construction the Authority and Reclamation will develop a Definite Plan Report consistent with the final design, Final EIR/EIS, permits, operations requirements, and other Project agreements. The Definite Plan Report will define the final Federal participation, benefits, operations plan, and use of Federal facilities. The cost assignment will be re-evaluated in the Definite Plan Report, including funding for OM&R Modification of various Federally owned facilities.

Engineering Design

The Authority is leading the development of the engineering design. The Project would be constructed in phases. Final designs and cost estimates for early construction activities (primarily associated with providing access to the major facilities for construction) would begin in 2021. A Design, Estimating, and Constructability (DEC) review will be conducted prior to completion of a Definite Plan Report to ensure project meets Reclamation standards of technical feasibility.

Site Investigations and Mapping

Geotechnical investigations will be conducted in support of Definite Plan Report and final designs.

Operations Plan

Operations will be reviewed using the requirements of COA for adding a locally owned, State, or Federal facility to the CVP and SWP system, per Article XIV and Article XVI of COA. In accordance with the COA review findings, an Operations Plan would be developed to address the long-term planning and integration processes, and how the additional water supply provided by Sites Reservoir and associated infrastructure would be managed, in coordination with existing water supplies and system features.

All contractual goals, including those that are not currently CVP/SWP land-based, would need an amended or new contract for delivery of water to service areas. The recognition of water rights will be accomplished through integration into a new Operations Framework (similar to COA). The following list contains specific components that need to be addressed.

- Coordination of Sites water deliveries with Reclamation's operation of the CVP
- Exchanges with Shasta and Folsom reservoirs (Within Year and Real-time)
- Sites water accounting in the context of the Coordinated Operations Agreement for the CVP and State Water Project (SWP)
- Conveyance and operational losses
- Exchanges and transfers from Sites-participants to non-Sites CVP contractors
- Water rights and point of delivery considerations

- Need to determine if this agreement will also cover Warren Act contract, modifications to Federal Facilities (Funks, turnout for Dunnigan pipeline, etc.), and land license/lease of lands (for any facilities located of Federal lands).
- Coordination of Sites water deliveries with DWR's operation of the SWP
- Exchanges with Oroville reservoir
- Exchanges and transfers from Sites-participants to non-Sites SWP contractors
- Water rights and point of delivery considerations

Hydropower

Additional evaluation of retiming of Shasta hydropower would be undertaken to understand what, if any, impacts or benefits to CVP power and CVP power preference customers may occur. Evaluation of Sites Reservoir as a net power consumer and quantify impact, if any, to CVP power.

Project Partnership Agreement

Reclamation will enter into a new cost share MOU with the local non-federal project sponsor for total project costs pursuant to the WIIN Act. An Agreement in Principal and Project Partnership Agreement between Reclamation and the Authority will be developed to define various roles, responsibilities, and obligations for the construction of the Project for both parties.

Environmental Compliance and Regulatory Requirements

The Authority is leading the development of the Final EIR/EIS. All Federal, State, and local agencies with permitting or approval authority over any aspect of project implementation are expected to use the information contained in the Final EIR/EIS to make decisions and/or issue permits if a project is authorized. The ROD would not be issued until congressional appropriations for construction funding and until the pre-construction permits and approvals have been acquired.

Permits and Approvals

The lead agencies would need to obtain various permits and regulatory authorizations before beginning Project construction (physical construction, not pre-construction activities). Water rights at Funks Reservoir would be addressed in the Authority's Water Rights Strategy. Modifications within existing Reclamation water rights may be necessary and Reclamation would participate in making such requests to the SWRCB.

Coordination and Outreach

Efforts to engage the public, federally-recognized Indian tribes, Native American groups, NGOs, public agencies, impacted landowners, and other stakeholders in decisions affecting the implementation of the Sites Reservoir Project would continue as an important aspect in the investigation. Key elements of forthcoming agency coordination activities are described in the REIR/SDEIS, the Planning Aid Memorandum and Coordination Act Report, and documents to be issued by USACE under CWA Section 404. Upcoming coordination will also include working with the SWRCB and CVRWQCB on the CWA 401 permit. Upcoming coordination will also include working with cooperating agencies under the NEPA process.

Mitigation

After the approval of all required permits, the implementation of mitigation measures may proceed before—or concurrent with—other Project facilities, in compliance with NEPA/CEQA and standard practices.

Land Acquisition

The Authority will coordinate all land acquisition activities, including acquiring lands for Project facilities and for mitigation purposes.

ASSUMPTIONS

Federal Role

- Additional WIIN funding will be appropriated each fiscal year.
- Reclamation would support the design investigations and engineering, and coordinate Project management and all aspects of the Project with the Authority and the State.
- Reclamation would support the Authority to secure Federal regulatory compliance and permitting for the Project (including ecosystem and water quality benefits identified by the Authority and the State and water rights modifications), as authorized, through a sequenced process.
- Reclamation, the Authority, and the State would implement the Operating Plan.
- Reclamation would validate the feasibility results during the pre-construction phase, and document any changes in a Definite Plan report, as needed.
- Reclamation would pursue a cost-share agreement and secure a signed MOU for construction.

Non-Federal Role

- The Authority would lead Project implementation and develop the Final EIR/EIS.
- The Authority would lead the construction effort, including the environmental commitments and mitigation measures identified in the Final EIR/EIS.
- The Authority would enter into agreements with all investors for the construction, operation, and maintenance of the Sites Reservoir Project.
- The Authority would be the owner and operator and would maintain the Sites Reservoir Project.

CONSTRAINTS

Funding

WIIN Act funding has not yet been appropriated towards pre-construction activities. Additional Federal funding is required for preconstruction activities; this amount has been included in Reclamation's FY2021 WIIN Act funding request.

Constrained Schedule

Schedule to meet the requirements set to meet the start of WIIN construction deadline of December 16, 2021.

KNOWN RISKS

Funding

- Further appropriations may not be available before the deliverables are due

Schedule

- The ROD would not be issued until congressional appropriations for construction funding and until the pre-construction permits and approvals have been acquired.
- Initiating formal consultation with the Services will not occur until after construction funding appropriated.
- Reclamation may not consult Section 7 for operations, Section 10 process much longer.

Scope

- Colusa-Basin Drain capacity limited in some months

PERMITS & EASEMENTS

- Water Right Permit issued by the State Water Resources Control Board
- Agreements with owners of existing facilities (TCCA, GCID, CBDA)
- Temporary rights of entry
- Remaining permits
 - Key environmental permits listed below:
 - Federal Endangered Species Act (ESA) compliance document (Biological Opinion)
 - California Endangered Species Act (CESA) Incidental Take Permit applications
 - National Historic Preservation Act compliance: Section 106 Programmatic Agreement final submitted for signatures
 - State and Federal Clean Water Act (CWA) permit application packets (404 and 401)
 - Public benefit agreements (Prop 1 (WSIP) term sheets)
 - Construction focused environmental permits (Caltrans encroachment; waste discharge requirements; Streambed Alteration Agreements; air pollution, public works encroachments, and building permits)
 - Final construction technical permits (DSOD and Cal OSHA)
 - Operational agreements to comply with Prop 1 (WSIP)
 - Operations with Reclamation
 - Operations with DWR
 - Operations with CDFW
 - Recreation and flood benefits with DWR
 - Funding agreement with CWC
 - Water Service Contracts
 - Warren Act Contracts
 - Federal facility modification agreements

Additional lands needed for project purposes and mitigation areas (road relocations and recreation mitigation areas, etc.)

- Lands needed to maintain or improve public access
- Lands needed to reduce potential encroachments
- Lands necessary to manage shoreline erosion or other water quality impacts
- Lands necessary to protect wildlife habitat and/or visual resources

HUMAN RESOURCE PLAN

The management of the Project will be carried out by the following groups:

- **Executive Steering Committee (ESC)** – Executive Management Level for Policy & Oversight
- **Project Management Group (PMG)** – Reclamation and Sites Staff Level Coordination
- **Reclamation Project Management Team (RPMT)** – Project Management, Staff & Service Provider Coordination
- **Sites Authority Project Management Team (SPMT)** – Project Management, Staff & Service Provider Coordination
- **Reservoir Operations Team (ROT)** – Reclamation, DWR, and Sites Project Authority

EXECUTIVE STEERING COMMITTEE (ESC)

The ESC consists of Executive Level Managers from Reclamation and Sites Project Authority who can provide sponsor-level decision-making authority. The ESC is intended to promote cooperation and collaboration and to resolve issues that cannot be solved at lower levels of the project structure.

Decisions by the ESC will be made by consensus and documented in writing. If there is a dispute that cannot be resolved by the ESC, it will be to the Reclamation Regional Director (or their designee), and the Sites Project Authority Chairman of the Board (or their designee).

The ESC will meet on a bi-weekly basis, unless otherwise agreed to. Commonly known as the Bi-Weekly USBR-Sites Coordination Call. PMT members may be added or deleted to the ESC meeting as needed during the duration of the project.

Name	Organization	Responsibility
Richard Welsh	Reclamation	Principal Regional Deputy Director
Jerry Brown	Sites Project Authority	Executive Director

PROJECT MANAGEMENT GROUP

The PMG is a staff-level working group that carries out and/or coordinates or manages the Project. Members may be added or deleted to the PMG as needed during the duration of the project. The Authority and their consulting team will lead the PMG meetings, including preparation of the agenda, facilitation, and note taking. The purpose of these meetings is to review the risk register, track project progress and identify and answer questions as they arise.

The PMG will meet on a bi-weekly or more frequent as needed basis through the duration of the project. The purpose of the PMG meetings is to provide coordination between the Project Teams and ensure issues are addressed at the lowest possible level prior to elevation, if necessary.

Below is a detailed list of initial PMG members, roles and contact information.

Org	Name	Role	Phone #	E-Mail
Reclamation Team	Ryan Davis	Project Manager	916-978-5083	rdavis@usbr.gov
	Melissa Dekar	Environmental Compliance Lead	916-978-6153	mdekar@usbr.gov
	Dan Cordova	Biological Assessment Lead	916-978-5483	dcordova@usbr.gov
Still thinking through who all should regularly attend on our side				
Sites Integration Team	Laurie Warner-Herson	CEQA/NEPA Lead	916-201-3935	laurie.warner.herson@phenixenv.com
	Henry Luu	Engineering Lead	916-679-8857	henry.luu@hdrinc.com
	John Sparanza	Permitting and Agreements Lead	916-679-8858	John.sparanza@hdrinc.com
	Erin Heydinger	Operations and Modeling Lead	916-679-8863	<u>Erin.Heydinger@hdrinc.com</u>

RECLAMATION PROJECT MANAGEMENT TEAM

The RPMT is a subset of the PMG and includes multi-disciplinary members who provide technical advice and review on engineering, environmental, operational, and other topic areas. Members may be added or deleted to the PMG as needed during the duration of the project. The RPMT members will be expected to maintain project familiarity within their core discipline, and to review and comment on work products of the consulting team periodically.

Below is a detailed list of RPMT members, roles and contact information.

Org	Name	Role	Phone #	E-Mail
CGB-100 Regional Directors Office	Richard Welsh	Principal Deputy Regional Director	916-978-5013	RWelsh@usbr.gov
	Scott Taylor	DC Regional Liaison	916-206-8079	STaylor@usbr.gov
CGB-700 Division of Planning	Michael Mosley	Acting Regional Planning Officer	916-978-5119	mmosley@usbr.gov
	Jobaid Kabir	Decision Analysis Branch Chief	916-978-5091	jkabir@usbr.gov
	Dan Deeds	Acting Water Supply Branch Chief (Water Quality Lead)	916-978-4467	ddeeds@usbr.gov
	Ryan Davis	Project Manager, Alternative Contracting Officer Representative, Grants Officer Representative	916-978-5083	rdavis@usbr.gov
	Chris Ryan	Budget Analyst	916-978-	cryan@usbr.gov
	Vincent Barbara	Economist	916-978-5072	vbarbara@usbr.gov
	Austin Olah	Economist	916-978-5074	aolah@usbr.gov
	Derya Sumer	Lead Modeler	916-979-2363	dsumer@usbr.gov
	Junaid As- Salek	Lead Contracting Officer Representative	916-978-5099	JAsSalek@usbr.gov
CGB-140 Public Affairs	Christi Kalkowski	Deputy Chief, Public Affairs	916-978-5102	ckalkowski@usbr.gov
	Brionna Ruff	Public Affairs Specialist	916-978-5108	bruff@usbr.gov
CGB-150 Environmental Affairs	Stacey Leigh	Regional Environmental Officer	916-978-5568	ALeigh@usbr.gov
	Melissa Dekar	Environmental Compliance Lead	916-978-6153	mdekar@usbr.gov
	Dan Cordova	Biological Assessment Lead	916-978-5483	dcordova@usbr.gov
	Mark Carper	Section 106 Lead	916-978-5552	mcarper@usbr.gov
CGB-200 Design & Construction		Acting Division Manager	916-978-5306	MMorberg@usbr.gov
	Darryl Good	Lead Civil Engineer	916-978-5320	DGood@usbr.gov
	Greg Mongano	Lead Geologist	916-978-5331	GMongano@usbr.gov

CGB-400 Resource Management	Lisa Holms	Contracts and Water Rights Branch Chief	916-978-5250	lholm@usbr.gov
	Ray Sahlberg	Regional Water Rights Officer	916-978-5249	RSahlberg@usbr.gov
	Bob Colella	Water Rights Specialist	916-978-5256	RColella@usbr.gov
	Travis Buttelman	Repayment Specialist	916-978-5247	JButtelman@usbr.gov
CGB-3800 Acquisitions	Steven Larson	Financial Assistance Branch Chief	916-978-5693	salarson@usbr.gov
	Leanne Henderson	Grants Management Officer	916-978-4372	lhenderson@usbr.gov
Central Valley Office (CVO)	Kristin White	Operations Manager	916-979-2199	knwhite@usbr.gov
	Allision Febbo	Deputy Operations Manager	916-979-3000	afebbo@usbr.gov
	Donna Garcia	Project Manager - Operations	916-979-0264	dcgarcia@usbr.gov
	Steve Melavic	Chief Power Operations Division	916-979-3001	SMelavic@usbr.gov
	Richard Sanchez	Public Utilities Specialist	916-979-2947	rsanchez@usbr.gov
	John Harrison	Public Utilities Specialist	916-979-2448	JHarrison@usbr.gov
Northern California Area Office (NCAO)	Donald Bader	Area Manager	530-247-8501	DBader@usbr.gov
	Natalie Wolder	Repayment Specialist	530-892-6275	NWolder@usbr.gov
Bay Delta Office (BDO)	Heather Casillas	CVPIA Program Manager	916-223-0028	hcasillas@usbr.gov
	Sonya Nechanicky	Refuge Water Conveyance Project Manager	916-414-5559	SNechanicky@usbr.gov
	Linda Colella	Water Acquisition Specialist (Refuge)	916-978-5203	LColella@usbr.gov
Lahontan Basin Area Office (LBAO)	Jack Worsley	Area Engineer	775-884-8356	jworsley@usbr.gov
Mid-Pacific Construction Office (MPCO)	Eric Simmen	Construction Engineer	530-892-6274	ESimmen@usbr.gov
	Brian Wagner	Deputy Construction Engineer	530-892-6262	BWagner@usbr.gov
Technical Service Center (TSC)	Chris Duke	Water Conveyance Group Lead	303-445-3120	WDuke@usbr.gov
	Andy Marner	Civil Engineer	303-445-2240	amarner@usbr.gov
	David Gillette	Geotechnical Engineering	303-445-2994	DGillette@usbr.gov

	Bryan Simpson	Geology and Geological Investigations	303-445-3094	bksimpson@usbr.gov
	Shanna Durham	Mechanical Engineering	303-445-2876	SDurham@usbr.gov
	Jay Boggess	Electrical Engineering	303-445-2933	jboggess@usbr.gov
	Brian Mcleod	Cost Estimating	303-445-3485	bmcleod@usbr.gov
	Rodney Barthal	Structural Engineering	303-445-3221	rbarthel@usbr.gov
DOI Solicitor	Kevin Tanaka	General Attorney	916- 978-6134	Kevin.Tanaka@sol.doi.gov

SITES PROJECT MANAGEMENT TEAM

The SPMT is a subset of the PMG and includes the PM's and multi-disciplinary members who provide technical advice and review on engineering, environmental, operational, and other topic areas. Members may be added or deleted to the PMG as needed during the duration of the project. The SPMT members will be expected to maintain project familiarity within their core discipline, and to review and comment on work products of the consulting team periodically.

Below is a detailed list of SPMT members, roles and contact information.

Org	Name	Role	Phone #	E-Mail
Authority Agents	Jerry Brown	Executive Director	(925) 260-7417	jbrown@sitesproject.org
	Alicia Forsythe	Environmental Planning and Permitting Manager		aforsythe@sitesproject.org
	Kevin Spesert	External Affairs Manager		kspesert@sitesproject.org
	Joe Trapasso	Program Operations Manager		jtrapasso@sitesproject.org
Sites Integration Team	Laurie Warner-Herson	CEQA/NEPA Lead	(916) 201-3935	laurie.warner.herson@phenixenv.com
	Linda Fisher	Planning Senior Staff	(916) 817-4962	Linda.Fisher@hdrinc.com
	Henry Luu	Engineering Lead	(916) 679-8857	henry.luu@hdrinc.com
	John Sparanza	Permitting and Agreements Lead	(916) 679-8858	John.sparanza@hdrinc.com
	Jelica Arsenijevic	Permitting Senior Staff	(916) 679-8854	Jelica.Arsenijevic@hdrinc.com
	Erin Heydinger	Operations and Modeling Lead	(916) 679-8863	Erin.Heydinger@hdrinc.com
	Connor McDonald	Real Estate Lead		

ICF (Environmental Planning)	Monique Briard	CEQA/NEPA and Permitting Technical Team Lead	(916) 231-9551	monique.briard@icf.com
	Ellen Unsworth	CEQA/NEPA Technical Lead	(916) 231-9619	Ellen.Unsworth@icf.com
	Jim Lecky	Fishery Technical Lead	(206) 801-2805	Jim.Lecky@icf.com
	Ellen Berryman	Biological Technical Lead	(916) 231-9750	Ellen.Berryman@icf.com
CH2M / Jacobs Engineering Group (Engineering – Conveyance Facilities)	Rob Tull	Technical Lead	(916) 286-0310	Robert.Tull@jacobs.com
	Rob Leaf	Modeling Lead	(916) 286-0393	Robert.Lead@jacobs.com
	Peter Rude	HC Conveyance Lead	(530) 229-3396	pete.rude@jacobs.com
	Jeff Smith	Pipeline & PGP Lead	(916) 286-0306	Jeff.smith1@jacobs.com
	Derek Morley	TRR & Funks Reservoir Lead	(916) 213-4622	DMorley@Geosyntec.com
	Garen Demirchian	Transmission Line & Switchyard Lead	(617) 956-4479	GDemirchian@Vanderweil.com
	Bill Fox	Mapping Lead	(530) 229-3239	Bill.Fox@jacobs.com
MBK Engineers (Water Rights)	Marc Van Camp	Water Rights Lead	(916) 456-4400	Vancamp@mbkengineers.com
	Anne Williams	Water Rights	(916) 456-4400	Williams@mbkengineers.com
AECOM (Engineering – Dams)	Mike Forrest	Project Manager	(510) 874-3012	Michael.Forrest@aecom.com
	Mike Smith	Deputy Project Manager	(714) 567-2791	Michael.G.Smith@aecom.com
	Jeff Herrin	Coordination Liaison	(916) 679-2084 (916) 432-0956	Jeff.Herrin@aecom.com
	Howard Michael	Roads and Bridges	(916) 266-4938	Howard.Michael@aecom.com

RESERVOIR OPERATIONS TEAM

The purpose of the Reservoir Operations Team (ROT) is to develop an operating plan for the Project that identifies proposed reservoir operations, affects to the Central Valley Project and State Water Project, and effects to any other party not a signatory to this MOU. Participation in the ROT is not limited to the Parties. Non-party stakeholders may participate in and be a member of the ROT if it is agreed upon by the Parties and the non-party stakeholder has special expertise with respect to any operational impact involved in the Project. The ROT is expected to meet bi-weekly to maintain the progress of the Project. Below is a detailed list of members, roles and contact information.

Org	Name	Role	Phone #	E-Mail
Bureau of Reclamation				
Sites Project Authority	Jerry Brown	Executive Director	925-260-7417	jbrown@sitesproject.org
	Ali Forsythe	Environmental Planning and Permitting Manager	916-201-3935	laurie.warner.herson@phenixenv.com
	Erin Heydinger	Operations and Modeling Lead	916-679-8863	Erin.Heydinger@hdrinc.com
	Cindy Kao	Santa Clara Valley Water District – Imported Water Manager		ckao@valleywater.org
	Rob Kunde	Wheeler Ridge-Maricopa Water Storage District		rkunde@wrmwdsd.com
	Randall Neudeck	Metropolitan Water District – Program Manager		rneudeck@mwadh2o.com
	Dan Ruiz	Westside Water District		druiz@westsidewd.com
	Jeff Sutton	Tehama Colusa Canal Authority – General Manager		jsutton@tccanal.com
Department of Water Resources				

From: Herrin, Jeff [jeff.herrin@aecom.com]
Sent: 10/20/2020 8:27:44 AM
To: Heydinger, Erin [erin.heydinger@hdrinc.com]
CC: Spranza, John [John.Spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: CDFW Benefits and CCWD

Erin,

Just a thought. We should try to find out what commitments Contra Costa Water District is making to CDFW regarding water for refugees. I suspect we will be held to the same standard.

Jeff

From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Wednesday, October 14, 2020 8:36 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: [EXTERNAL] RE: Prop 1 Application vs. CDFW Benefits Table

Thanks, Jeff. Do you have time to meet briefly to discuss this tomorrow afternoon?

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Monday, October 12, 2020 11:23 AM
To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Prop 1 Application vs. CDFW Benefits Table

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Erin,

I provided some comments. We may need a follow-up call to walk through items. My major comments are:

- Some of the items in the left column are consistent with the application (but maybe they shouldn't be due to reduced benefit funding) and some of the information in the column comes from policies that were not developed until months after the application was submitted.
- There are a lot of rows with redundant information. It would be much easier to follow if we can streamline the table to eliminate the redundancy. I could try to rework this and simplify it, but didn't budget for it and would need Henry to confirm if he is comfortable that it is in our SOW.
- CDFW confuses benefits and costs. WSIP could not increase award amounts to cover contingency costs because this was NOT included in Prop 1 funding. Monetized benefits are higher in areas where conveyance is required; however, no additional cost was assigned to the State to cover O&M in the cost allocation appendix. This was not possible under WSIP.

- I think it is in the Authorities best interest to try to get Reclamation's Refuge Water Program to manage and track deliveries to the refuges to the extent possible.
- I assume the Salinity Gates CDFW is talking about need to be opened to release water from the Yolo Bypass into the Delta. If this is the case, there would be no benefit to smelt unless these gates were opened. The Authority would likely need to work an agreement with DWR and Reclamation. Note that RD108 is already working with DWR on smelt and should be able to help coordinate this.
- We made no commitment to releasing water for salmon to the Yolo Bypass and received no funding for this benefit. I don't think Sites has enough water to make a significant dent in this. The only source with sufficient water to meet the salmonid need is the Sacramento River. There is not enough water in storage to provide sufficient volume to move the needle.
- Many of the items identified are associated with impacts and will need to be addressed in the EIR and permitting process. In my mind they are independent of the WSIP contract for water supply. There may be benefit in splitting these out into a separate list.

Let me know if you want a follow-up call.

Jeff Herrin

Water Resources Planner, Water Business Unit, Sacramento, CA
D +1-916-679-2084 IPT 264-679-2084
M +1-916-432-0956
Jeff.Herrin@aecom.com

AECOM

2020 L Street
Suite 400
Sacramento, CA 95811, United States
T +1-916-414-5800
aecom.com

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From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Thursday, October 08, 2020 4:07 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: [EXTERNAL] Prop 1 Application vs. CDFW Benefits Table

Hi Jeff,

We're working on a table comparing CDFW's understanding of the Prop 1 ecosystem benefits versus what was included in our application. Would you be able to take a look at the table and provide your comments or edits sometime next week?

You should be able to access it using this link, but let me know if not:

https://sitesreservoirproject.sharepoint.com/:w:/g/envpermitting/EQOP9eGH8YVDsRvM-bd5h1MBUmmgj4temMI4Sr_fKtp4Q?e=91C90r

John – FYI I also reviewed and added some comments in there. I uploaded the worksheets to that folder as well.

Thanks!
Erin

Erin Heydinger, PE, PMP
Asst. Project Manager
Water/Wastewater

HDR
2379 Gateway Oaks Dr, #200
Sacramento, CA 95833
D 916.679.8863 M 651.307.9758

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MEMORANDUM

Date: 19 October 2020

From: Steven Zeug, Cramer Fish Sciences

Subject: Comparison of NAA and AltA2 using updated IOS model

An updated version of the IOS winter run Chinook salmon lifecycle model was used to evaluate effects of Sites Reservoir Project AltA2 relative to the no action alternative (NAA). Updates to this version of the IOS model include:

- Spawn timing is now a function of water temperatures in April and May
- Stock-recruit function updated with ≈ 10 years of additional data
- Flow-survival relationship established between Red Bluff and Fremont Weir using JSATS releases of winter run juveniles
- Delta Passage survival model updated with ≈ 7 years of JSAT release in and above the Delta

Five outputs from the model are included below including 1) egg survival, 2) fry survival, 3) river survival, 4) Delta survival, and 5) female escapement. Results for each output were aggregated by water year-type and displayed as box plots where the horizontal line is the median value, the box defines the interquartile range and the vertical lines define the largest value within 1.5 times the interquartile range.

In general, there was little variation in ecological outcomes between the two scenarios. Examination of the flow and temperature data for each alternative indicated that differences between the scenarios were smaller than the resolution of the biological relationships in most cases.

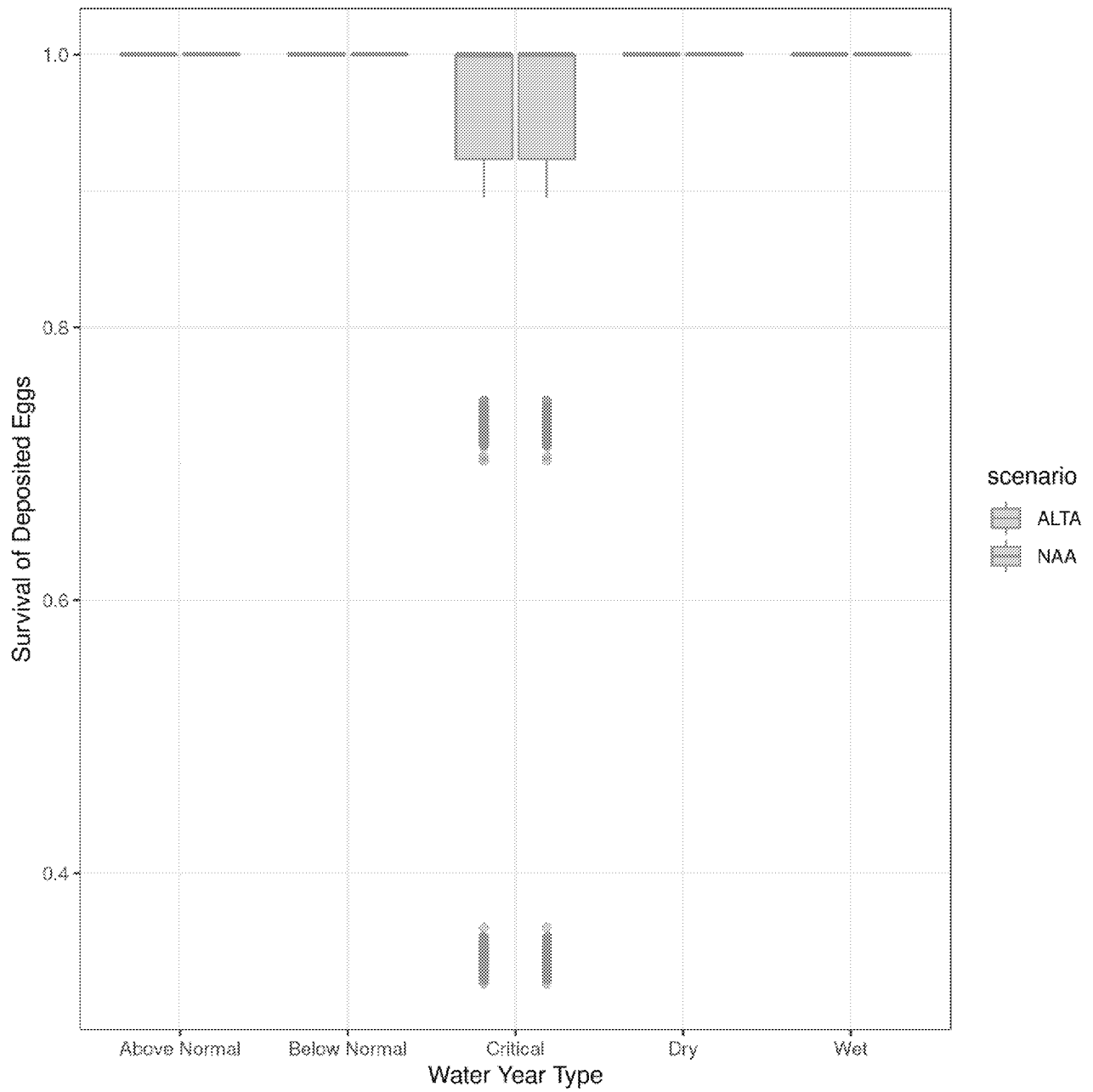


Fig 1) Egg survival by water year type for the AltA and NAA scenarios.

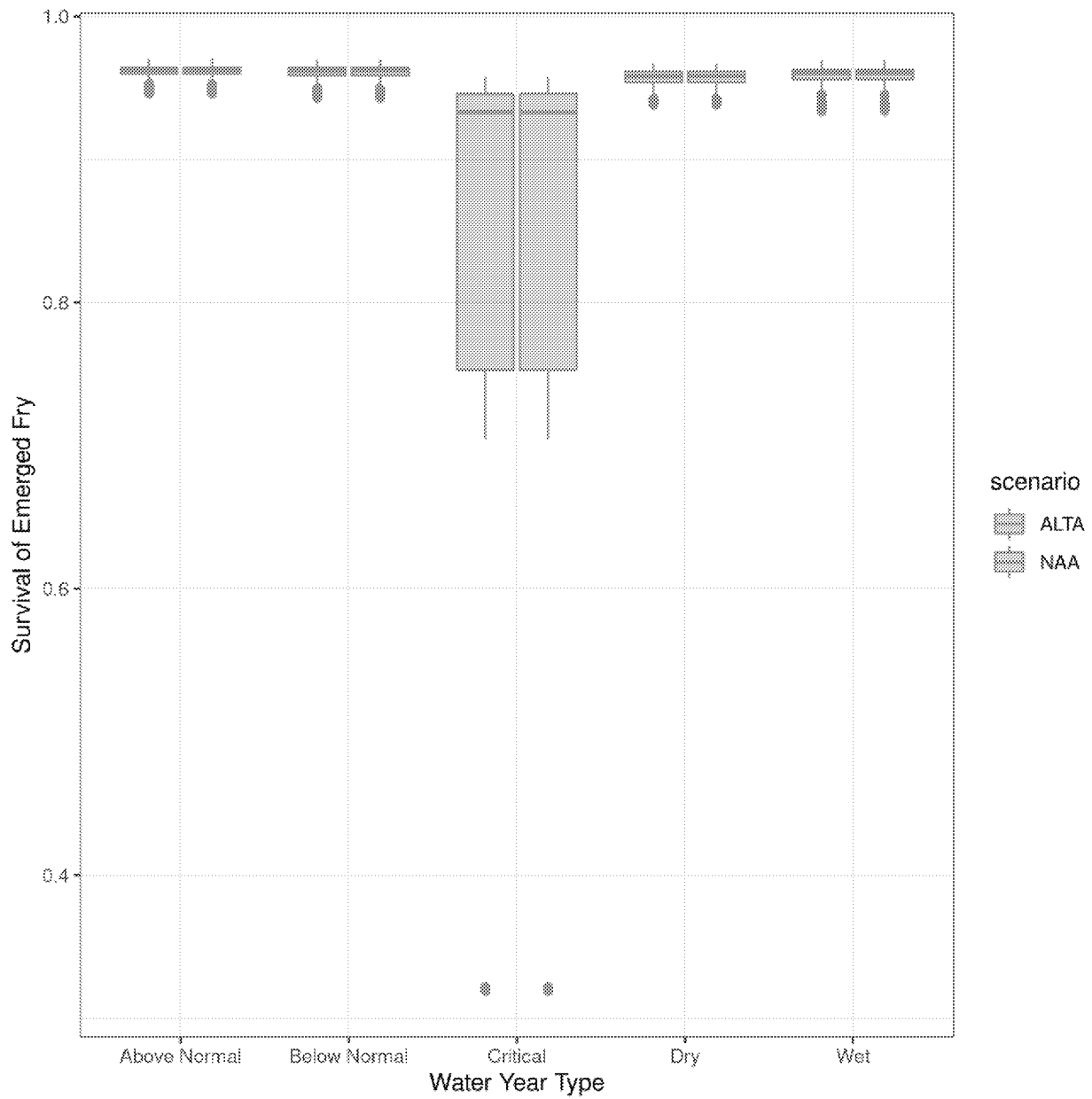


Fig 2) Fry survival by water year type for the Alta and NAA scenarios.

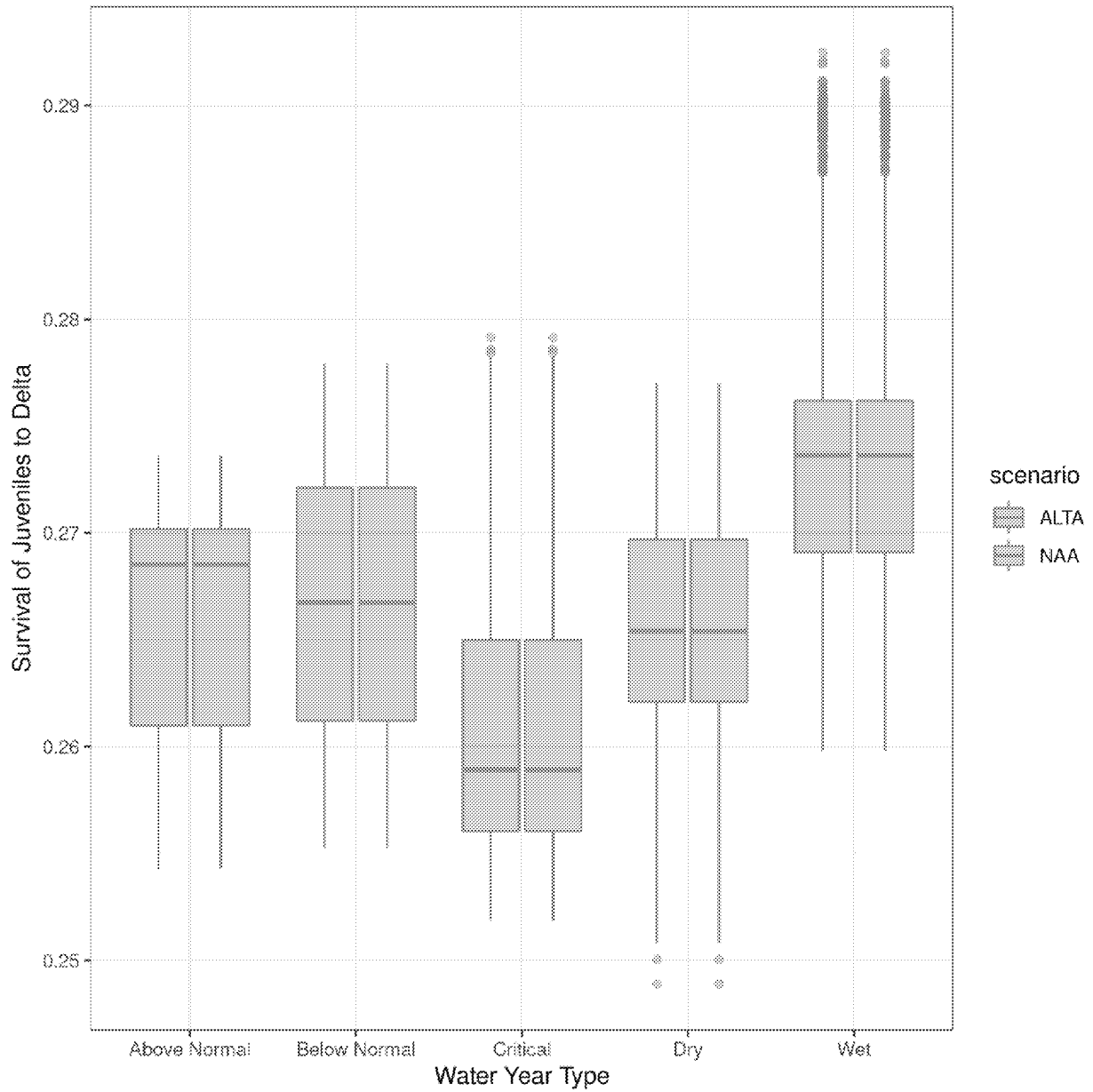


Fig 3) River survival (Red Bluff to Fremont Weir) by water year type for the AltA and NAA scenarios.

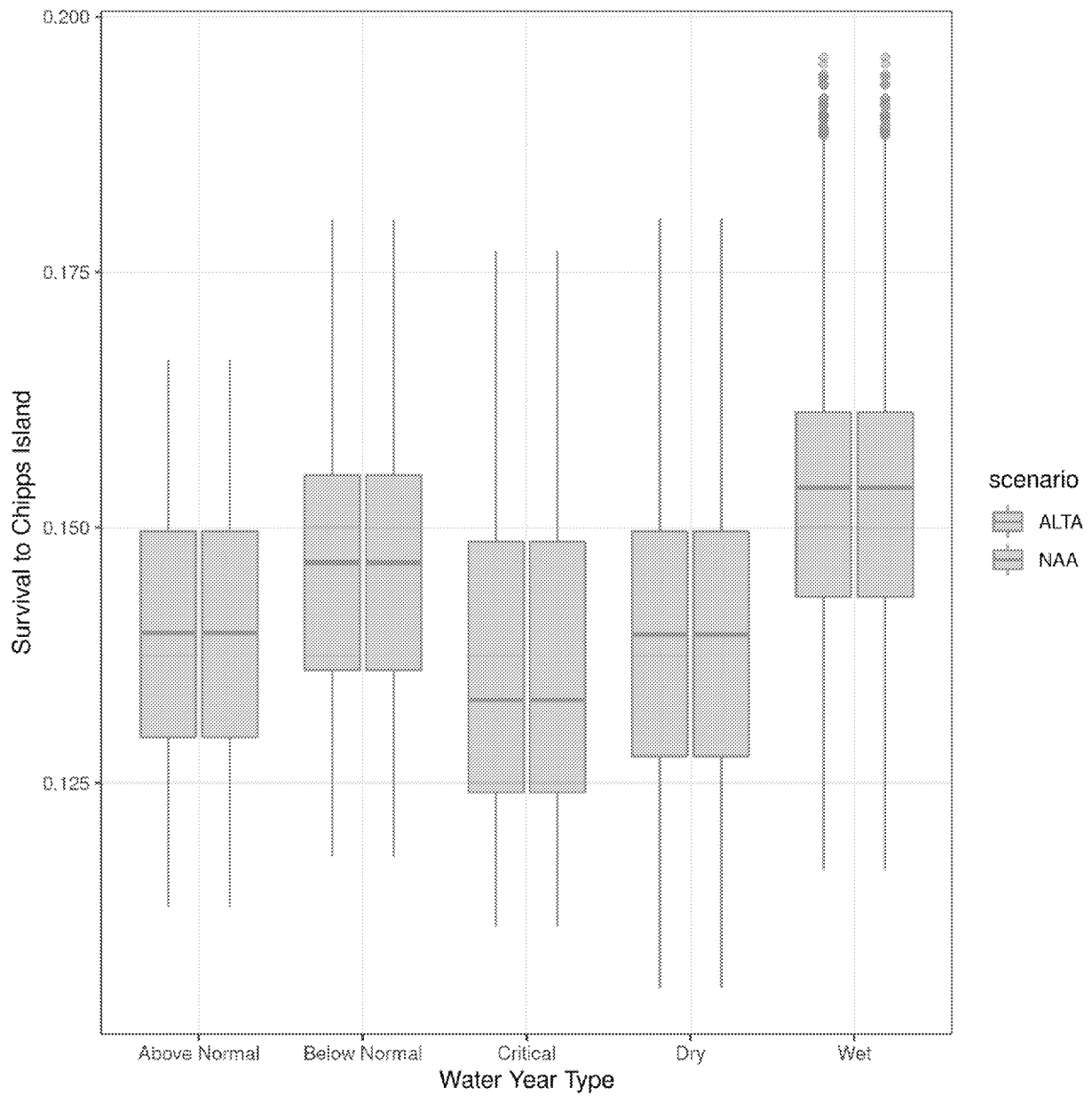


Fig 4) Delta survival by water year type for the AltA and NAA scenarios.

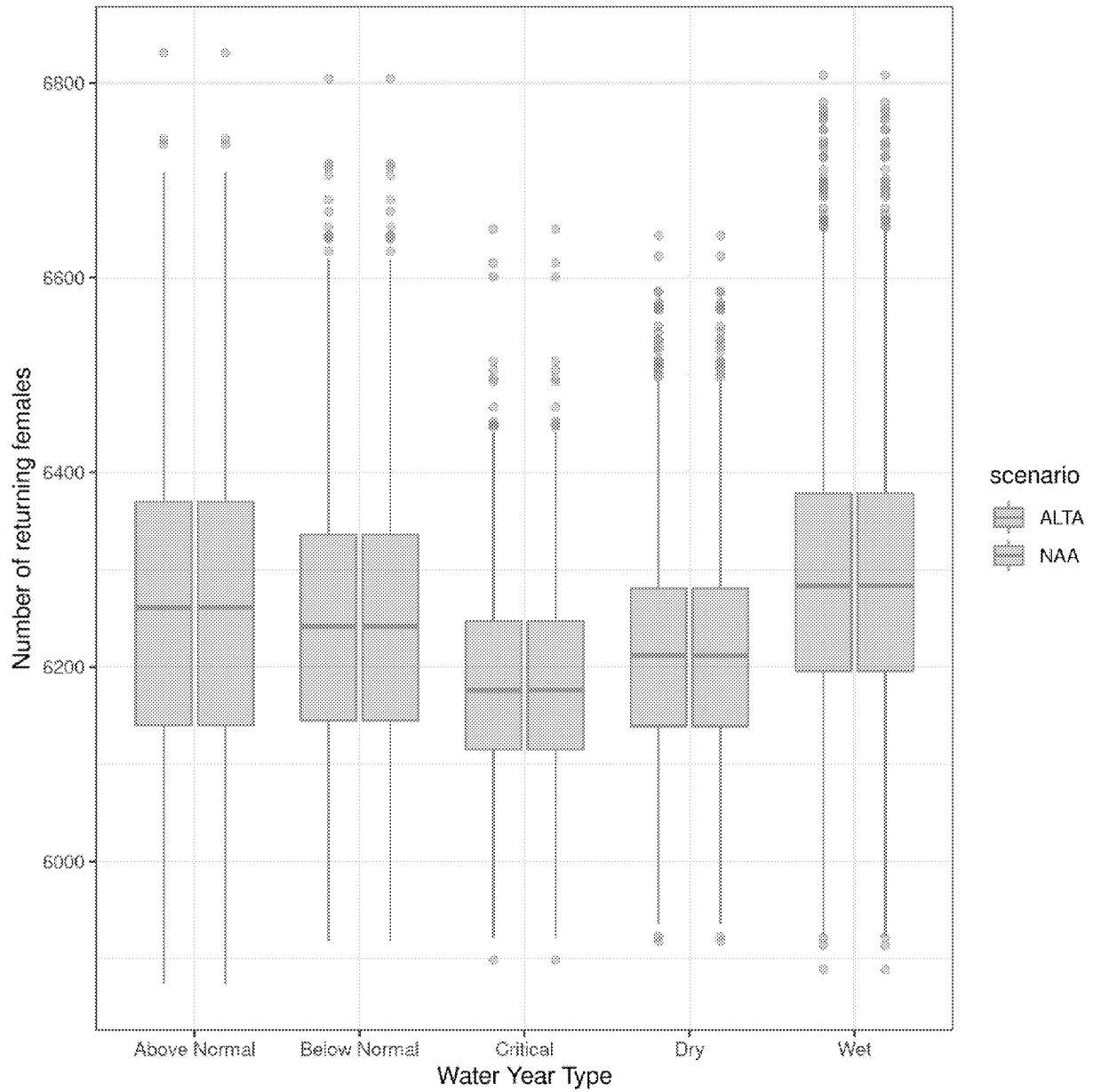


Fig 5) Female escapement by water year type for the AltA and NAA scenarios.

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/21/2020 7:45:56 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]
CC: Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: RE: EIR/EIS Chapter 2 -Best Management Practices

Thanks Ali !

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Tuesday, October 20, 2020 10:55 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert <kspesert@sitesproject.org>
Cc: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: RE: EIR/EIS Chapter 2 -Best Management Practices

Laurie – I started reviewing this tonight and made it about 1/3 of the way thru. I will finish tomorrow.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Friday, October 16, 2020 9:55 AM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: RE: EIR/EIS Chapter 2 -Best Management Practices

By the way, I have placed the WORD version on SharePoint if you do make text edits. You can find the file here:

https://sitesreservoirproject.sharepoint.com/:w:/r/EnvPlanning/Shared%20Documents/RDEIR_SEIS%20Ch%202%20PPD/Ch2_AltsDescription_BMPs.docx?d=wdab8c5ea453b4aebb17c88fd526f9a82&csf=1&web=1&e=qj21qT

From: Laurie Warner Herson
Sent: Thursday, October 15, 2020 4:36 PM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: EIR/EIS Chapter 2 -Best Management Practices

Hi Kevin and Ali -

When we met on October 1st to address outstanding information items and direction needed from the Authority on the EIR/EIS project description, we discussed needing your review of Table PD2-25 (see attached). This is the list of BMPs and environmental commitments that are included as part of the project description and therefore would be considered commitments and assumed to be in place when evaluating project effects.

In addition to the PDF version previously shared, I am attaching a WORD version should you prefer to provide direct edits to text. Please let me know if you have any questions.

Thank you,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935

laurie.warner.herson@phenixenv.com

State of California Small Business (#1796182)

Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/21/2020 9:02:34 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Funks and Stone 5937 Memo-Latest Version

I'll get this over to ICF and pass your direction along.

You are correct in this still being more a design parameters memo and not a flow regime memo (I hear the hydrologist in you wanting the specifics ☺). It will however lead to a flow regime component as that is the logical conclusion of this process. We are starting with the existing conditions and the suggested volume range to design to (0-80 CFS) to establish the general flow regime once we have the agencies on board. After that, we can add in the flood flow specifics that you referenced as well as refine the general flow components to be more specific on a seasonal basis, including ensuring any downstream water rights are not infringed upon. This then will be packaged into the complete tech memo and included in permit apps and the EIR/EIS. Later, we will need to perform gauging and field work to establish the exact H&H and resulting volume and timing of flows to maintain the fish in good condition.

If this approach still does not resolve your concerns, let's talk and I'll revise accordingly.

Thanks.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Tuesday, October 20, 2020 9:55 PM
To: Spranza, John <John.Spranza@hdrinc.com>
Subject: RE: Funks and Stone 5937 Memo-Latest Version

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

John – This memo is very much improved. Thank you and the team for this! I have only 2 comments in the attached that I've highlighted in yellow so they are super easy to pick out.

I do still see this as providing design parameters. At least for me, its not recommending a flow scenario. I sort of see a recommendation on a flow scenario more along the lines of gage upstream of the reservoir and what comes in goes out on a 5 day rolling average, with releases out no more than X cfs for flood control reasons. I think a flow scenario could be as simple as this – with us having to figure out the upper bound in the future. This is something we can operate to, its simple, its easy.

I think this is really getting close though and is far enough along to share with CDFW. Can we have ICF format the document into their template before sharing? Once we share it with CDFW, its subject to PRA and if someone gets it, I want it to look a little more polished / professional. Still include the Working Draft – For Internal Review – Predecisional in the footer.

Looks like we have our 5937 meeting with CDFW on 11/5. Would we want to try to get this out to them by end of this week so they can review, confer internally and come to the meeting prepared for more detailed discussion? I think the longer lead time we can give them, the more they would be prepared for details in the meeting.

Thanks!

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Monday, October 19, 2020 11:39 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Funks and Stone 5937 Memo-Latest Version

Hey Ali,

Jim and I worked through your comments and I think we have made changes that address them. Although ICF did not send over a tracked changes version for their 9-9-20 version, I have included a "Version Comparison" document that shows most of the changes that they made in response to your comments. There are also a few tracked changes in the latest document (20201019) that were from the last round of edits I had ICF do.

I was thinking that we may be able to send this out to CDFW prior to our meeting with them, it could help get us moving to a quick solution if we establish that the existing stream is intermittent.

Lastly, I have also been thinking about our saddle dams and wondering if some of them would also block flows to Hunter's Creek, I am checking into it.

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
hdrinc.com/follow-us

TECHNICAL MEMORANDUM

TO: STEVE MICKO, JACOBS
FROM: NOBLE HENDRIX, QEDA CONSULTING
DATE: 21 OCTOBER 21, 2020
**SUBJECT: DRAFT RESULTS OF OBAN ANALYSIS OF SITES ALTERNATIVE
ALTA2_092220_PEA AND NAA_091720**

This technical memorandum describes preliminary results from running the OBAN model for a baseline alternative (NAA_091720) and a Sites proposed action (ALTA2_092220_PEA).

Model Details:

The OBAN model was modified to be able to run for the full Calsim period of hydrologic outputs. Two modifications were made to the OBAN model. The first was the inclusion of a harvest control rule for calculating harvest rates as a function of spawning abundance. The harvest control rule is consistent with the rule used in the NMFS winter-run life cycle model (WRLCM) and has a maximum harvest rate of 0.2 when the three-year geometric average is greater than 3500 spawners. The second modification was the need to resample from the ocean productivity indices in each Monte Carlo iteration of the model. The historical 1967 – 2014 ocean productivity indices were resampled in each iteration with replacement to provide variability in ocean productivity across Monte Carlo simulations.

Model Results:

The ALTA2 tended to have slightly higher abundances relative to the NAA, with notable increases in the median difference in spawners in model years 1927, 1928, and 1962 (Figure 1). Variability in the difference in abundance was substantial across Monte Carlo simulations (gray area in Figure 1) although some periods indicated higher probability of increased abundance under ALTA2 compared to NAA (e.g., 1980 – 2002).

The probability of quasi-extinction was (probability that spawner abundance < 100) showed similar temporal patterns across the 1922 to 2002 time series (Figure 2 left). Still, the probability of quasi-extinction was consistently lower for the PA compared to the NAA (Figure 2 right).

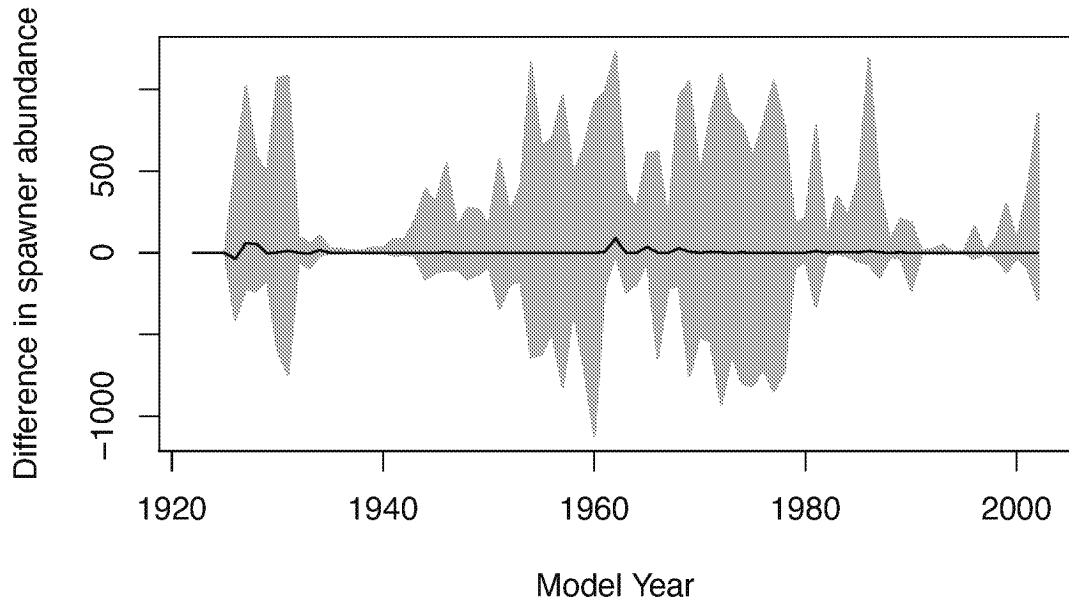


Figure 1. Difference (ALT2A – NAA) in spawner abundance for model years 1922 – 2002. Positive values indicate higher abundances under ALT2A relative to NAA. Median (line) and 80% intervals (gray) across 1000 Monte Carlo simulations are presented.

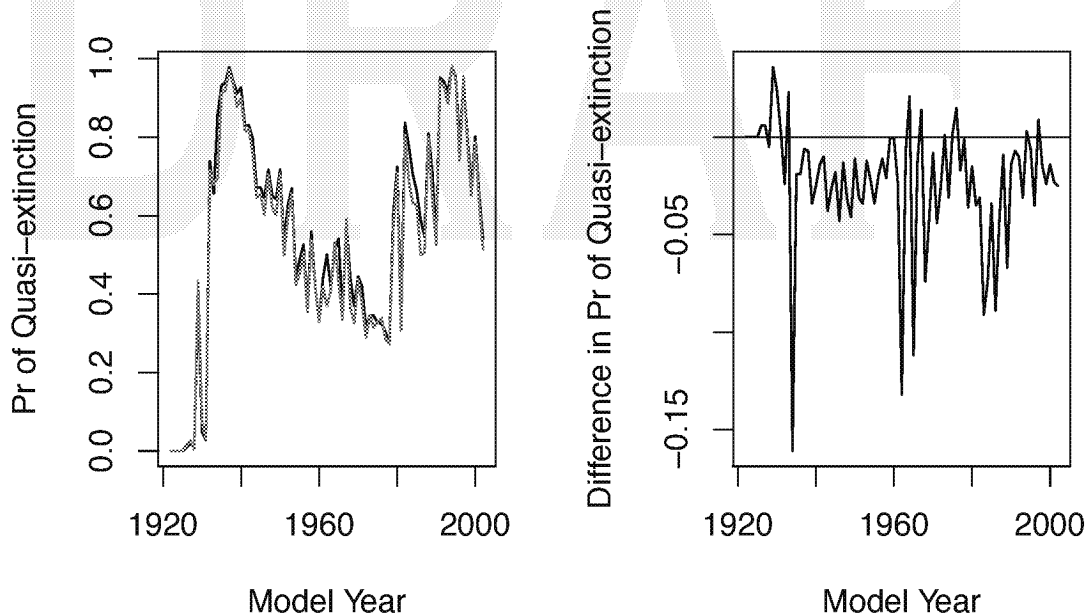


Figure 2. Probability of quasi-extinction (spawner abundance < 100) (left) showing the NAA (black) and ALT2A (red). (Right) difference (ALT2A – NAA) in the probability of quasi-extinction.

We also evaluated the difference in survival rates in the egg through fry stages and in the delta stage to understand where the two alternatives may differ and in what model years those differences may be occurring. The survival differences in the alevin stage indicated periods of

substantial improvement in alevin survival under ALT2A, in particular model years 1959, 1966, and 1978 in which median differences in survival were greater than 0.10 (Figure 3). In contrast, there was little difference in the delta survival estimates from the OBAN model between alternatives (Figure 4).

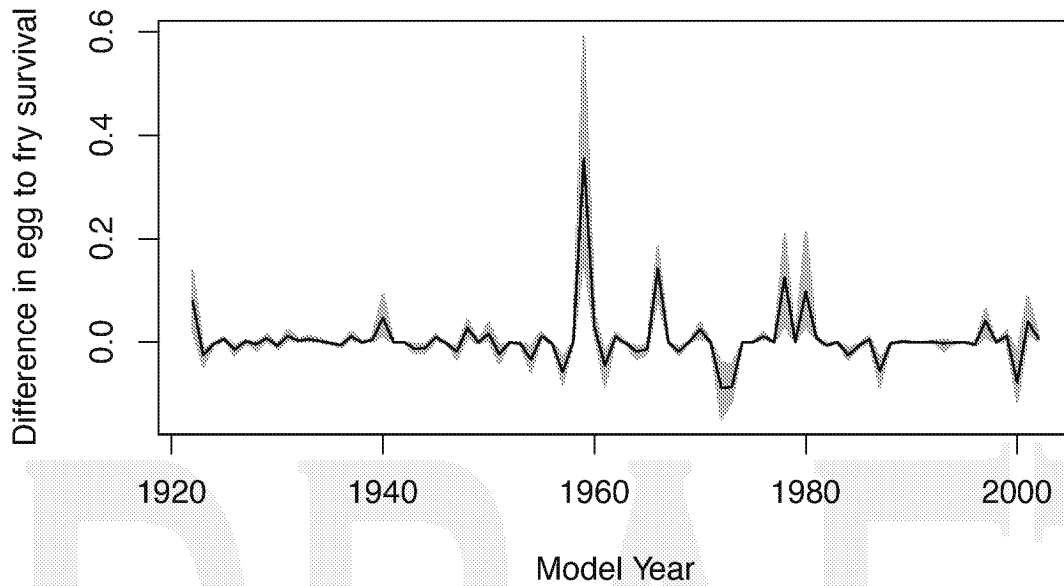


Figure 3. Difference (ALT2A – NAA) in survival of the egg through fry stages which includes thermal mortality and Bend Bridge flow effects. Median (line) and 80% intervals (gray) across 1000 Monte Carlo simulations are presented.

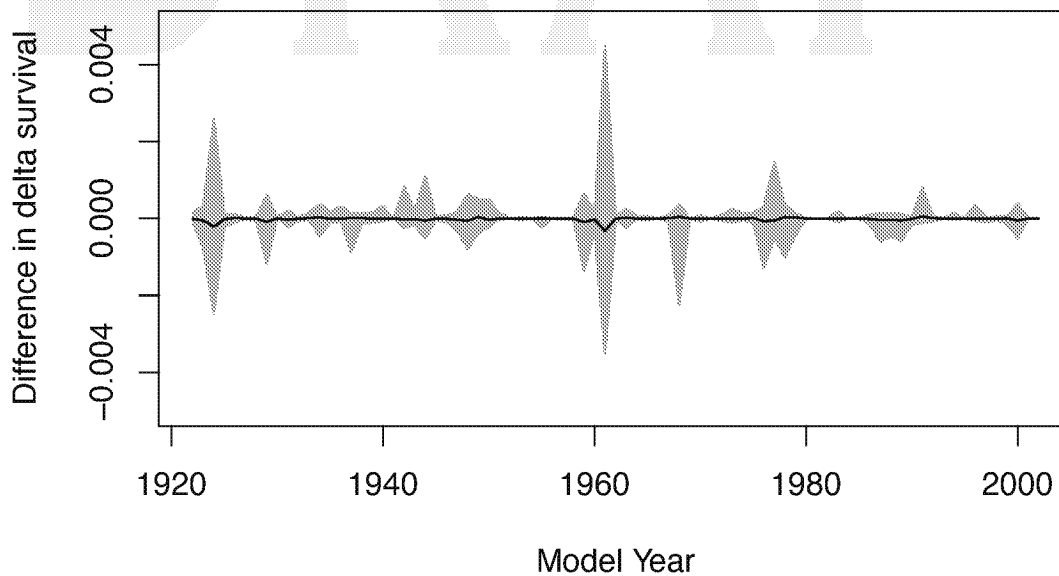


Figure 4. Figure 3. Difference (ALT2A – NAA) in survival of the delta stage which includes access to Yolo bypass and export effects. Median (line) and 80% intervals (gray) across 1000 Monte Carlo simulations are presented.

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/21/2020 1:55:43 PM
To: Janis Offermann [janis@horizonh2o.com]; Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

Thanks Janis – I sent the draft letter to Kevin and Ali for review. Hopefully we can get comments back this week ?

From: Janis Offermann [mailto:janis@horizonh2o.com]
Sent: Wednesday, October 21, 2020 1:35 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

It looks good to me, Laurie. Do we know the status of the letter to re-introduce the project to the tribes for the revised EIR?

Thanks
janis

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 21, 2020 1:06 PM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Janis Offermann (Janis@Horizonh2o.com) <Janis@Horizonh2o.com>
Subject: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

All, I have prepared the attached draft agenda for tomorrow's meeting. It is essentially the same agenda we used with the first Yoche Dehe meeting. Let me know if you have any edits. I will place on SharePoint and send to the Colusa representatives once you confirm its ready for circulation.

Thank you,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/21/2020 2:07:47 PM
To: Kevin Spesert [kspesert@sitesproject.org]; Janis Offermann [janis@horizonh2o.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

Will do. And we will be looking forward to getting your comments on the AB 52 letter so we can get that out – thanks Kevin!!

From: Kevin Spesert [mailto:kspesert@sitesproject.org]
Sent: Wednesday, October 21, 2020 1:56 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Janis Offermann <janis@horizonh2o.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

I am pretty sure I will not be able to make it...might be better to drop me from it...and just say that I had a conflict when the meeting date changed...or something to that affect...

Kevin

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 21, 2020 1:54 PM
To: Kevin Spesert <kspesert@sitesproject.org>; Janis Offermann <janis@horizonh2o.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

Yes, I remember but included you just in case your schedule changes ☺ I can drop you from the Agenda.

From: Kevin Spesert [mailto:kspesert@sitesproject.org]
Sent: Wednesday, October 21, 2020 1:42 PM
To: Janis Offermann <janis@horizonh2o.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

Just a reminder...I will not be able to attend the call tomorrow.

Kevin

From: Janis Offermann <janis@horizonh2o.com>
Sent: Wednesday, October 21, 2020 1:35 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

It looks good to me, Laurie. Do we know the status of the letter to re-introduce the project to the tribes for the revised EIR?

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janis

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Thank you,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/21/2020 3:16:03 PM
To: Janis Offermann [janis@horizonh2o.com]
CC: Kevin Spesert [kspesert@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm
Attachments: 20201022_Sites-CICC_Mtg-AGN.docx

Hi Janis,

I have attached the revised agenda (dropping Kevin). Have you sent the Colusa representatives any additional information like we did the Yoche Dehe? If not, I suggest we send it out now with the Agenda. I think we sent a link to the Project Description Summary from the September 17 Board Agenda as well as the Alt 1 and 2 figures.

Thanks,

Laurie

From: Janis Offermann [mailto:janis@horizonh2o.com]
Sent: Wednesday, October 21, 2020 1:35 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Agenda for CICC Meeting tomorrow 10/22 @ 3pm

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Thanks

janis

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 21, 2020 1:06 PM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Janis Offermann (Janis@Horizonh2o.com) <Janis@Horizonh2o.com>
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Thank you,

Laurie

Laurie Warner Herson
Principal/Owner



Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)

Draft_0004387

Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

Sites Reservoir Benefits Considerations

One of the items we need to address in the feasibility report is updating our benefits to correspond to the right-sized project. The talking points below reflect the pros and cons and uncertainties associated with the various benefit categories.

Benefit	Considerations
Participant Benefits	
Authority Water Supply	Updated deliveries will be part of Jacob's modeling effort
CVP Water Supply	Discussions are ongoing. We need to decide whether to include any discussion/reference to potential CVP/Reclamation water in the WSIP Feasibility Report
SWP Water Supply	I'm aware of prior discussions, but as far as I know we do NOT plan to include anything in the WSIP Feasibility Report
WSIP Benefits	
Refuge Supply ^a	<p>The conveyance of refuge supply benefits is expensive and requires the use of facilities outside the direct control of the Authority. Agreements for use of SWP and CVP facilities to deliver water would be required. Delivery of water to refuges south of the Delta is more expensive, but also supported by the environmental community.</p> <ul style="list-style-type: none"> • It may be advantageous to reduce the refuge supply and increase some other benefit • It may be advantageous to place refuge water in a blended account that may be used by the Authority to meet refuge commitments and pay for O&M • The optimal allocation of water to NOD and SOD refuges needs to be determined
Delta Habitat (Smelt) ^a	
Anadromous Fish ^a	<p>It is rumored that recent lifecycle models for the right-sized project may show no net benefit to anadromous fish. These benefits are dependent on the amount of water storage increase in Shasta.</p> <ul style="list-style-type: none"> • Is there a way to provide data to demonstrate a net benefit to anadromous fish? • Do we need to modify operations to achieve this benefit?
Delta Water Quality	Was not monetized or selected as a benefit in the WSIP application. Introduces a new party (SWRCB) to negotiations. Likely challenging as we do not provide a net increase in Delta outflow; however, we may provide an increase in critical years. Agency may argue that this is required for mitigation regardless and, therefore, ineligible.
Emergency Water Supply	Not currently included in the project or WSIP application. LVE is providing a dedicated source of water (a maximum of 160,000 AF for non-drought emergencies and a maximum of 42,000 AF during drought emergencies). This water would likely need to be reserved in Sites Reservoir, thereby decreasing the releases for other purposes.
Flood	Currently valued at \$45M. The County believes it should be higher. Might be a difficult negotiation, but it might be possible to increase. The original request was based on \$134M in benefits.
Recreation	Currently valued at \$197M. No foreseeable justification for increasing further.

^a – WSIP requires that ecosystem benefits be greater than 50% of the total benefits.

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/22/2020 6:42:59 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Kevin Spesert [kspesert@sitesproject.org]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: Re: EIR/EIS Chapter 2 -Best Management Practices

Thank you for your review. I think I had commented to ICF that some of the BMPs read more like mitigation measures than BMPs. I will read your comments and discuss with Nicole.

On Oct 21, 2020, at 9:59 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Hi Laurie – I finished my review of the BMPs and my comments are in the file on SharePoint.

In general, I think we really need to remember that we have a massive construction site here. So things like watering all roads twice daily just seems totally unrealistic. Covering all stock piles is totally unrealistic. While these things work great for a subdivision, then aren't going to work for a site spread over literally thousands of acres. I tried to catch most of these, but we need to look carefully at these BMPs again in the next version of the document.

I also removed anything on daily reporting or even weekly reporting. TMI. Lets frame these as reporting as agreed upon in some future plan or something. We'll have to hire someone just to manage and file all of these reports if we get daily reporting from all of our construction sites. And it will be worthless as no one will look at it all. So we need to think carefully in the future about the reporting frequency we want. I'd like to leave the reporting frequency more open so we can make this call on a case by case basis in the future.

All in all I think these are good – we just need to be super careful and considerate of the massive site we have and ask ourselves – can we really do this, is this necessary, and what is this going to cost our members? Caveats of , as appropriate, or similar should be used liberally as some of these things may be appropriate in some areas / at some construction sites, but not in other areas.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Friday, October 16, 2020 9:55 AM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: RE: EIR/EIS Chapter 2 -Best Management Practices

By the way, I have placed the WORD version on SharePoint if you do make text edits. You can find the file here:

https://sitesreservoirproject.sharepoint.com/:w:/r/EnvPlanning/Shared%20Documents/RDEIR_SEIS%20Ch%20%20PPD/Ch2_AltDescription_BMPs.docx?d=wdab8c5ea453b4aebb17c88fd526f9a82&csf=1&web=1&e=gj21qT

From: Laurie Warner Herson
Sent: Thursday, October 15, 2020 4:36 PM
To: Kevin Spesert <kspesert@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: EIR/EIS Chapter 2 -Best Management Practices

Hi Kevin and Ali -

When we met on October 1st to address outstanding information items and direction needed from the Authority on the EIR/EIS project description, we discussed needing your review of Table PD2-25 (see attached). This is the list of BMPs and environmental commitments that are included as part of the project description and therefore would be considered commitments and assumed to be in place when evaluating project effects.

In addition to the PDF version previously shared, I am attaching a WORD version should you prefer to provide direct edits to text. Please let me know if you have any questions.

Thank you,

Laurie

Laurie Warner Herson
Principal/Owner
<image001.png>
Environmental Planning

916.201.3935
laurie.warner.herson@phenixenv.com
State of California Small Business (#1796182)
Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Sent: 10/22/2020 9:12:22 AM
To: Williams, Nicole [Nicole.Williams@icf.com]; Berryman, Ellen [Ellen.Berryman@icf.com]; Duncan, David [David.Duncan@icf.com]
CC: Briard, Monique [Monique.Briard@icf.com]; Spranza, John [John.Spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Fisher, Linda [Linda.Fisher@hdrinc.com]; Luu, Henry [Henry.Luu@hdrinc.com]
Subject: FW: Environmental Disturbance Areas - 1.3 MAF (Alternative 2)
Attachments: AEC_SitesReservoirEnviroDists_Alternative2_13MAF Exhibit 03.pdf

Importance: High

Good morning

Attached is information regarding Alternative 2. GIS files have also been uploaded. Per their message their GIS can speak directly to David.

If David does speak to them (or HC in the future) at any time, please summarize your discussions and email us so we are all on the same page.

Jelica Arsenijevic
Environmental Project Manager

Due to COVID-19, I will be working from home. Please contact me via cell # listed below. Be safe out there!



2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916-679-8854
M 209-329-6897

Jelica.Arsenijevic@hdrinc.com

hdrinc.com/follow-us

From: Forrest, Michael [mailto:michael.forrest@aecom.com]
Sent: Wednesday, October 21, 2020 8:38 AM
To: Remar, Alexander <Alexander.Remar@aecom.com>; Nanduri, Rekha <Rekha.Nanduri1@aecom.com>; Herrin, Jeff <jeff.herrin@aecom.com>; Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Smith, Michael (orange) <michael.g.smith@aecom.com>; Doctolero, Vanessa <vanessa.doctolero@aecom.com>; L'Ecluse, Rion <rion.lecluse@aecom.com>
Subject: RE: Environmental Disturbance Areas - 1.3 MAF (Alternative 2)

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Henry,

The GIS files for the 1.3 MAF (Alternative 2) GIS data deliverable were downloaded onto the SharePoint site.

Thanks,

Mike

From: Remar, Alexander <Alexander.Remar@aecom.com>

Sent: Tuesday, October 20, 2020 5:55 PM

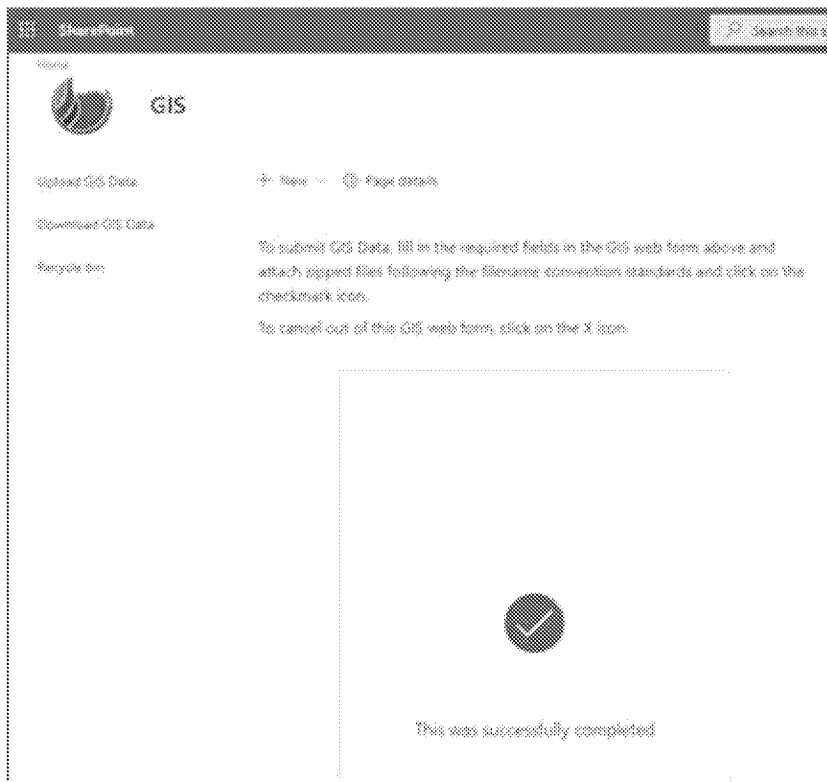
To: Nanduri, Rekha <Rekha.Nanduri1@aecom.com>; Forrest, Michael <michael.forrest@aecom.com>; Herrin, Jeff <jeff.herrin@aecom.com>

Cc: Smith, Michael (orange) <michael.g.smith@aecom.com>; Doctolero, Vanessa <vanessa.doctolero@aecom.com>; L'Ecluse, Rion <rion.lecluse@aecom.com>

Subject: RE: Environmental Disturbance Areas - 1.3 MAF (Alternative 2)

Mike,

I have successfully submitted the 1.3 MAF (Alternative 2) GIS data deliverable onto the SharePoint site (see Rekha's email below for linework details). As Rekha noted below, I think it would be most helpful/efficient if I speak directly with ICF's GIS lead to help clarify any questions they may have regarding our Alternative 1 and Alternative 2 GIS submittals, so feel free to pass along my contact info.



Cheers,

Alex Remar

GIS Manager

Office 510-874-1793 | Cell 510-499-9023

AECOM

From: Nanduri, Rekha <Rekha.Nanduri1@aecom.com>

Sent: Tuesday, October 20, 2020 5:31 PM

To: Forrest, Michael <michael.forrest@aecom.com>; Herrin, Jeff <jeff.herrin@aecom.com>

Cc: Smith, Michael (orange) <michael.g.smith@aecom.com>; Remar, Alexander <Alexander.Remar@aecom.com>;

Doctolero, Vanessa <vanessa.doctolero@aecom.com>; L'Ecluse, Rion <rion.lecluse@aecom.com>

Subject: Environmental Disturbance Areas - 1.3 MAF (Alternative 2)

Mike,

Please see attached for 1.3 MAF (Alternative 2) environmental disturbance areas. Alex will be uploading the files to sharepoint shortly. When you speak with the client, please suggest opening direct communication between Alex and Dave Duncan (their GIS rep).

The following files will be uploaded to sharepoint:

One GIS shapefile for **Alternative 2** – consisting of following:

- 1.3 MAF NMWS
- Permanent disturbance area (inside the reservoir)
- Permanent and temporary disturbance are (outside the reservoir)
- Main Dams, Saddle Dams, and Saddle Dike footprints
- Haul routes (inside and outside the reservoir)
- Quarries (inside and outside the reservoir)
- Rock Processing Areas (inside and outside the reservoir)
- Disposal Areas (inside the reservoir)
- Staging Areas (inside the reservoir)
- Roads (recreational area roads, comm roads, saddle dam access road, South road, Huffmaster road etc.,)

Vanessa and Mike Smith have QC'd the exhibit. Both Mike Smith and I QC'd the GIS attribute table.

Thanks
Rekha

Rekha Nanduri
Project Geotechnical Engineer
D 1-916-679-2250
rekha.nanduri1@aecom.com

AECOM
2020 L Street, Suite 400
Sacramento, CA 95811, USA
T +1-916-414-5800
aecom.com

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To:	Sites Authority
From:	ICF
Date:	October 21, 2020
Re:	WORKING DRAFT – For Internal Review – Predecisional: California Fish and Game Code 5937 and Funks and Stone Corral Creeks

Key Points

1. The purpose of this memorandum is to recommend to the Sites Authority and its engineering team release parameters for flows into Stone Corral and Funks creeks for design purposes that would likely comply with California Fish and Game Code section 5937¹. Our recommendation is to evaluate the technological and economic feasibility of a scenario that preserves 80 percent of the historical hydrograph for these streams based on a US Geological Survey (USGS) stream gage data for Stone Corral Creek that operated from 1958 to 1985 and to include design elements into the project that would allow the release of that flow as seasonally appropriate.
2. Sites Dam and Golden Gate Dam will be impassable barriers, designed to store diversions from the Sacramento River and retain flows from Stone Corral and Funks creeks. The alternatives in the 2017 Draft Environmental Impact Report/Statement (Draft EIR/EIS) proposed “releasing stream maintenance flows of up to 10 cubic feet per second (cfs) from October through May into Stone Corral and Funks creeks after construction is completed to mimic the ephemeral² nature of these streams.”
3. In their comments on the Sites Reservoir Project DEIR/EIS, the California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board (SWRCB) questioned the basis for and adequacy of a 10 cfs base flow for maintaining fish below Sites Dam and Golden Gate Dam in good condition.

¹ California Fish and Game Code requires the owner of any dam to allow sufficient water to pass over, around, or through the dam to keep any fish that may exist below the dam in good condition

² These streams are referred to as ephemeral in the Draft EIR/EIS. However, based on the hydrological record for Stone Corral Creek they flow persistently during the winter-months in most years and should be considered intermittent.

4. Based on CDFW surveys conducted in these streams in 1998 and 1999, there is a community of 10 warm water species of fish in Stone Corral and Funks creeks, which may persist after construction. None are listed as threatened or endangered, or are considered species of special concern, but they are subject to the requirements of California Fish and Game Code section 5937. This list of fishes, recommended flow scenarios, and an adaptive management approach for maintaining fish in good condition should be confirmed with CDFW *before* it is incorporated in the revised project description for the Sites Reservoir Project.

Background

The two major dams of the Sites Reservoir Project, Sites Dam and Golden Gate Dam, will impound Stone Corral and Funks creeks. The project description in the Draft EIR/EIS (USBR and Sites Project Authority, 2017) includes a provision to release stream maintenance flows of up to 10 cfs from October through May into Stone Corral and Funks creeks after construction is completed to mimic the ephemeral nature of those streams. In their comments on the Draft EIR/EIS, CDFW and the SWRCB questioned the rationale for and adequacy of that provision.

CDFW commented that maintaining flows of up to 10 cfs from October through May, as proposed in the Draft EIR/EIS, will not sufficiently mimic the variability of the current hydrograph for Stone Corral and Funks creeks and will not provide the same amount of aquatic habitat to maintain fish in good condition. CDFW also suggested base flows outside of the “October through May” period below the reservoirs may need to have a perennial regime to support fishes downstream of the dams, and that the impacts of the dams on fluvial geomorphology and riparian habitat in the streams affected by the project should be addressed.

Similarly, the SWRCB questioned the rationale for a 10 cfs base flow and pointed out inconsistencies in the description of how releases to Stone Corral and Funks creeks would be managed:

- The Draft EIR/EIS states that the base flows would be provided from October to May. Elsewhere, it states that base flows would be provided year-round.
- The Draft EIR/EIS state that the base flows would be limited to 10 cfs, but also states that the dams would be operated to match pre-project flows (other than flood flows), which can be higher than 10 cfs.

The SWRCB also commented that the impacts of dam operations on fluvial geomorphological process below the dams should be analyzed.

Environmental Setting for Stone Corral and Funks Creeks

Both Stone Corral and Funks creeks are small watersheds originating in the eastside foothills of the California Coast Range at elevations of 700 to 850 feet and flow intermittently, mostly in winter and early spring months. From their origins, both creeks flow through low foothills, across Antelope Valley (the site of the Proposed Sites Reservoir), through a series of ridges, and onto the Sacramento Valley floor (Figure 1). For much of their course on the valley floor, they are confined to narrow channels between berms along agricultural fields and road prisms³. While the stream channels of these creeks are not actively managed, their straight channels and angular turns around some agricultural fields and along some roads indicate that they were modified from their natural channels at some point in the past. In the upper parts of the watersheds just below the dam locations, these streams are largely devoid of riparian cover due to cattle grazing activity (USBR and DWR 2008). In the lower reaches where the streams run through and around agricultural fields, riparian habitat is sparse and consists mostly of low shrubs, grasses, and occasional oak and cottonwood trees.

Stone Corral Creek

Stone Corral Creek has a drainage area of 32.8 square miles. From the proposed location of the Sites Dam, Stone Corral Creek meanders through a shallow canyon onto the valley floor, where it flows through an incised channel across grazing lands. At 4.6 miles from the Sites Dam location, Stone Corral Creek crosses over a siphon in the Tehama-Colusa Canal Authority (TCCA) canal and begins to travel through agricultural lands. About 3 miles below the TCCA canal siphon, Stone Corral Creek crosses the Glenn-Colusa Irrigation District (GCID) canal siphon. Although most of the water in the canal passes under Stone Corral Creek in the siphon, GCID releases water from the canal to Stone Corral Creek for delivery to agricultural fields downstream. About 5.5 miles below GCID, Stone Corral Creek merges with Funks Creek and then flows an additional 5.7 miles to the Colusa Basin Drain (CBD).

Funks Creek

Funks Creek, a tributary to Stone Corral Creek, has a drainage area of 43 square miles. From the proposed location of Golden Gate Dam, Funks Creek meanders through a series of low ridges and grazing lands for about 1.8 miles to Funks Reservoir. Funks Reservoir is a re-regulating reservoir on the TCCA canal and is created by a low dam on Funks Creek. Funks Dam is operated by TCCA mostly for flood control purposes. The Funks Dam gates are opened during large storm events to pass flood waters through the reservoir and downstream to avoid compromising the TCCA canal and its operations. There are no requirements to maintain flows in Funks Creek below Funks Reservoir, but seepage through the dam gates allow a few cfs, which maintains flow in Funks Creek.

Below Funks Dam, Funks Creek travels 3.9 miles through agricultural fields in a combination of natural and straightened channels to where it crosses the GCID canal. While the GCID canal passes

³ Characterization of stream channels is based on desktop review of streams using Google Earth.

under Funks Creek in a siphon, GCID releases water from the canal to Funks Creek, and like Stone Corral Creek, GCID uses the downstream portions of Funks Creek as part of its conveyance system to deliver water to agricultural fields. Approximately 2 miles northeast of Maxwell and 1 mile east of Interstate 5, Funks Creek flows into Stone Corral Creek.

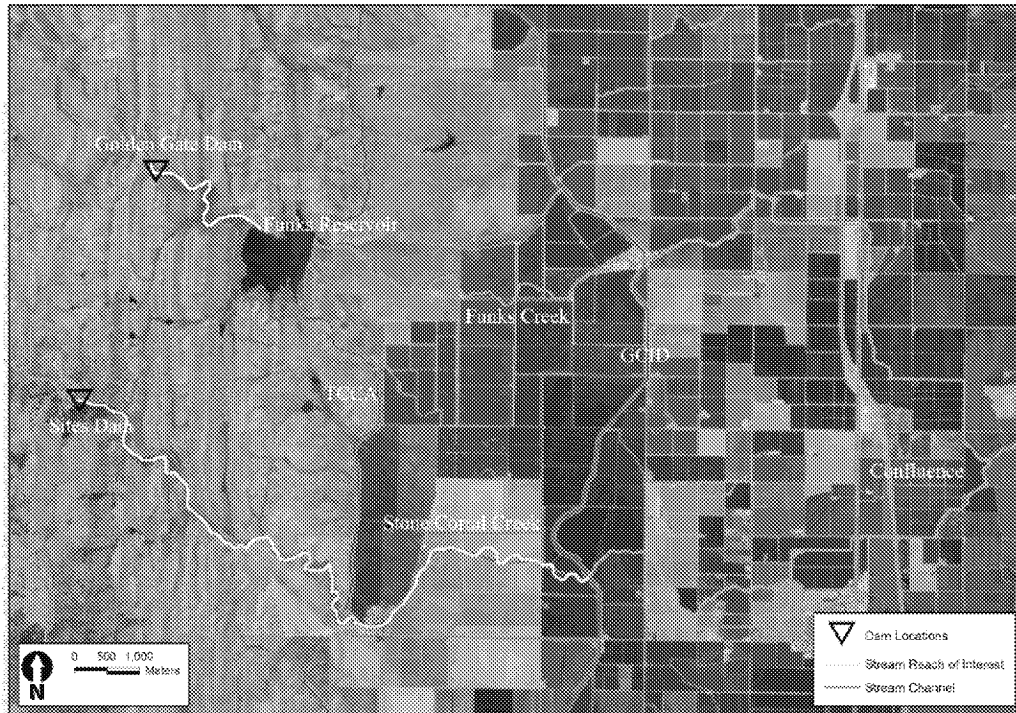


Figure 1. Stone Corral and Funks Creeks

Water Quality

Stone Corral Creek is listed under section 303(d) as an impaired water body for low dissolved oxygen levels (SWRCB 2017). The creek was originally listed in 2010 and is scheduled to have a Total Maximum Daily Load plan by 2027. This designation is based on samples collected at a sampling site located where Stone Corral Creek crosses 4-mile Road. This location is downstream of the confluence between Funks and Stone Corral creeks, at the western edge of the Delevan National Wildlife Refuge. The source of the oxygen depletion is listed as unknown (SWRCB 2017) but, given the amount of algae visible in Google Earth photos, nutrient loading from the cattle grazing lands and agricultural fields is a likely source in both watersheds. During fish surveys in 1998 and 1999, CDFW noted that water quality was poor and high in dissolved minerals. They reported that the total dissolved solids in the water were so high that it precluded electrofishing as a means of sampling (CDFG 2003).

SWRCB (2017) did not report on water quality in Funks Creek but given similar size, geology, and land use between the two watersheds, the water quality in Funks Creek is likely comparable to Stone Corral Creek.

Hydrology

Both streams originate at low elevations below the snow line of the Coast Range and consequently do not receive cold snowmelt water. Rather, they respond rapidly to significant rainfall events and flash flooding and substantial overland flow has been observed (USBR and DWR 2013).

The USGS collected 25 years of discharge measurements in Stone Corral Creek near the town of Sites from 1958 through 1985. During that time, there were 3 years of zero flow: 1972, 1976, and 1977. Yates (1989) estimated the recurrence interval of a winter without flow at 12 to 14 years. The maximum mean daily flow of 2,230 cfs occurred on December 24, 1983. The instantaneous peak flow was 5,700 cfs on January 26, 1983. The 100-year discharge was established in a 1987 Colusa Basin flood flow frequency analysis as 7,870 cfs (DWR 1987, cited in USBR and DWR 2008).

There is no comparable data set for Funks Creek. However, given the comparable size, geology, and topography of the two watersheds and their proximity to each other upstream of their confluence, Stone Corral Creek hydrology is likely representative of Funks Creek hydrology in terms of amount and seasonality of flow. The daily mean hydrology for Stone Corral Creek was presented in the Draft EIR/EIS and is included in Table 1. It shows the variability of flow over the period of record differs considerably from a static flow of 10 cfs.

Table 1. Stone Corral Creek Daily and Monthly Flows Near Sites, USGS 11390672

Period of Record 4/1/1958 – 9/30/1964 and 10/1/1965 – 9/30/1985
 Drainage Area = 38.2 Square Miles

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Daily Flows (cfs) for Period of Record												
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	74	2,230	1,910	2,150	1,980	619	45	9	1	0	0
Avg	0	1	11	32	39	21	8	1	0	0	0	0
Monthly Flows (AF) for Period of Record												
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	427	11,432	8,825	11,137	15,227	4,451	740	146	19	0	0
Avg	0	37	660	1,946	2,190	1,300	484	83	13	1	0	0

Source: Sites Authority and USBR 2017.

Fishery Resources

As part of the CALFED North of Delta Offstream Storage Investigations, CDFW conducted fish surveys in the Sites Reservoir inundation area in 1998 and 1999 (CDFG 2003). Ten species of fishes were caught in the Sites and Colusa study areas; six were native and four were introduced, of which, three are considered game fish (Table 2). Sacramento hitch (hitch) was the most common species

sampled during these studies. Hitch were found in all the creeks in the Sites and Colusa study area. Hitch were also present in the greatest numbers. Stone Corral Creek had the greatest diversity of fish throughout the year in the Sites and Colusa study areas. However, fish densities were lower in Stone Corral Creek, particularly for hitch, than in other creeks. Funks Creek was the next most diverse creek with five species of fish. These surveys also documented all these species downstream in the CBD, so they are likely present throughout these watersheds.

Table 2. Fishes Caught in the Sites Study Area in 1998 and 1999

Common Name	Scientific Name	Stream	Native (N) or Introduced (I)
California roach	<i>Hesperoleucus symmetricus</i>	Stone Corral	N
Sacramento hitch	<i>Lavinia exilicauda</i>	Funks, Stone Corral	N
Sacramento blackfish	<i>Orthodon microlepidotus</i>	Stone Corral	N
Sacramento pikeminnow	<i>Ptychocheilus grandis</i>	Funks, Stone Corral	N
Sacramento sucker	<i>Catostomus occidentalis</i>	Funks, Stone Corral	N
Sculpin	<i>Cottus sp.</i>	Funks	N
Bluegill*	<i>Lepomis macrochirus</i>	Stone Corral	I
Green sunfish*	<i>Lepomis cyanellus</i>	Stone Corral	I
Largemouth bass*	<i>Micropterus salmoides</i>	Funks	I
Mosquitofish	<i>Gambusia affinis</i>	Stone Coral	I

* game fish

Below is a summary of the life history and habitat preferences for each of these species. These summaries are taken from “California Fish Website” maintained by University at California Davis⁴. Table 3 presents a summary of temperature tolerances, spawning seasons, and spawning substrates used by each species. This information demonstrates that this is a complex of warm water species that spawn in the spring and summer months over a diversity of substrates.

California Roach are a small fish usually less than 100 mm long. They can adapt to varying habitats from coastal streams to mountain foothill streams. They are predominately found in small warm streams but can thrive in larger colder streams with diverse conditions. They may occupy several different habitat types within a single drainage. Extreme tolerance includes temperatures ranging from 30-35°C and dissolved oxygen levels as low as 1-2 ppm. In-stream location may vary depending on geography and predators. California Roach are omnivorous, and diet may depend on stream size and food availability. In smaller rivers Roach feed mostly on filamentous algae, supplementing their diet with crustaceans and insects. Generally, California roach reach sexual maturity at age 2-3 and rarely live beyond three years total. Spawning occurs in March through early July, and timing is temperature dependent. California Roach breed in gravel beds or riffles where

⁴ <http://calfish.ucdavis.edu/species/>

groups of females lay eggs on and into the substrate. Eggs hatch in 2-3 days after spawning. Larvae remain in the protection of the gravel substrate before emerging to swim.

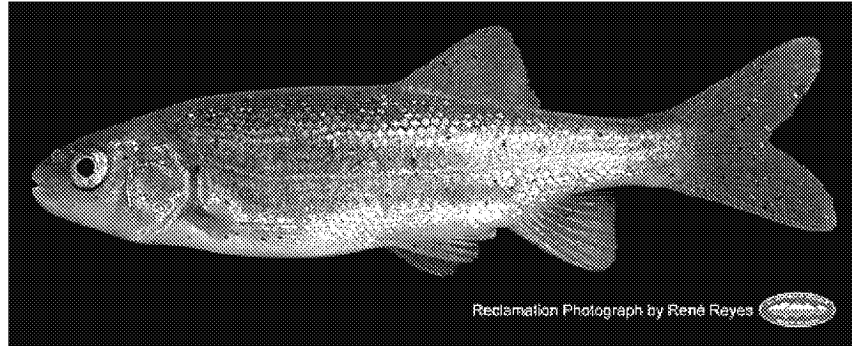


Figure 2. California Roach, *Hesperoleucus symmetricus* (Source R. Reyes, US Bureau of Reclamation).

Hitch grow to about 35 cm in length. Hitch are most often found in slow warm water, including lakes and quiet stretches of rivers. They are the most heat tolerant of the native Central Valley fishes and can withstand water temperatures greater than 30°C under some conditions. They have also been found living in brackish water with salinities as high as 9 ppt. Generally, females reach sexual maturity in 2-3 years, while males may reach sexual maturity in years 1-3. Spawning may begin as early as February and end as late as July. Females release their eggs into the current and the males immediately fertilize the eggs. The eggs then settle into the gravel substrate where the size of the ova will increase and help lodge it into the rock particles. In 3-7 days, the embryos hatch, and 3-4 days after the hatch the embryos begin to swim freely. The young Hitch may swim downstream to a lake or slough or reside within the stream under the cover of aquatic plants. Hitch generally live for a total of 4-6 years.



Figure 3. Hitch, *Lavinia exilicauda* (Source R. Reyes, US Bureau of Reclamation).

Sacramento Blackfish grow up to 50 cm in length. They are native to the Sacramento and San Joaquin drainages as well as to Clear Lake. Sacramento Blackfish prefer warm turbid waters in small to large streams, and often share habitat with an array of non-natives. Sacramento Blackfish prefer

water temperatures in the range of 22-28°C. They have shown a great ability to adapt to extreme environments including water temperatures exceeding 30°C and salinities in excess of 9 ppt. Blackfish are typically suspension feeders with a diet of planktonic algae and zooplankton, including copepods, insect larvae, rotifers, cladocerans, and detritus. Sacramento Blackfish may become sexually mature from ages 1 to 4 years, depending upon their growth rate. Spawning generally occurs in spring but may happen anytime between March and July when water temperatures are in the range of 12-24°C. Spawning beds are usually found in areas of thick vegetation and shallow water. The eggs will cling to the local substrate till the larvae emerge and begin foraging in the same region.

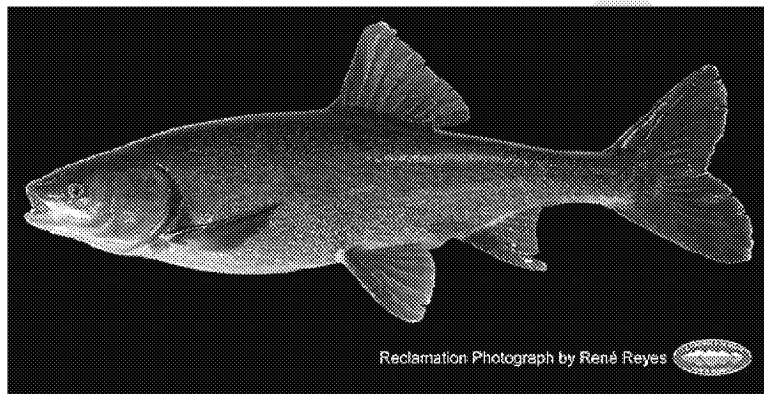


Figure 4. Sacramento Blackfish, *Orthodon microlepidotus* (Source R. Reyes, US Bureau of Reclamation).

Sacramento Pikeminnow are a larger fish growing to 115 cm in length. They are typically found in clear low to mid-elevation streams and rivers. Pikeminnows favor streams with deep pools and slow runs that have cover in the form of undercut banks or aquatic vegetation. They are found where water temperatures are usually in the range of 18-28°C, although they are capable of withstanding extremes up to 38°C and salinities as high as 8 ppt. Juveniles may feed on aquatic insects and change the focus of their diet to crustaceans and fish as they grow bigger. Large adults are voracious opportunistic predators. Pikeminnow become sexually mature at age 3-4 and begin spawning in April – May. Ideal spawning grounds are riffles and pool tails with gravel substrate. Pikeminnow may live up to 16 years.

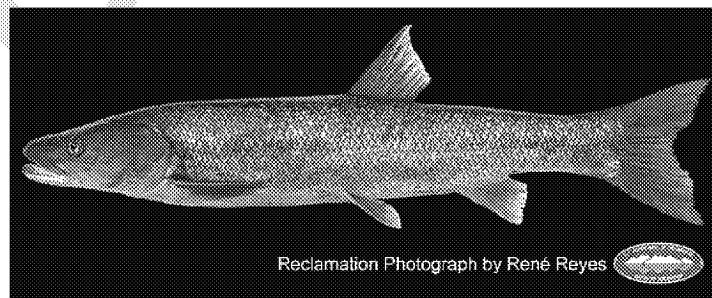


Figure 5. Sacramento Pikeminnow, *Ptychocheilus grandis* (Source R. Reyes, US Bureau of Reclamation).

Sacramento Suckers grow up to 56 cm in length. They live and forage in warm protected streams and forage on algae, invertebrates, and detritus. Young fish may stay in this warm water for several years before moving into lakes or larger rivers. Adult fish typically rest or hold in the deeper water during the day and feed during the first and last hours of the day. The larger fish may occupy pools, runs, or riffles in area where vegetation or rocks provide cover from birds and other predators. At age 4-6 Sacramento Suckers become sexually mature and begin a spawning ritual that may involve a migration to a warmer and smaller stream. Spawning is triggered by the onset of warmer water temperatures and usually occurs between February and June. Suckers spawn in groups, sending fertilized eggs down into the substrate and out into the current. The eggs settle in gravel and slackwater areas, hatching after 2-4 weeks.

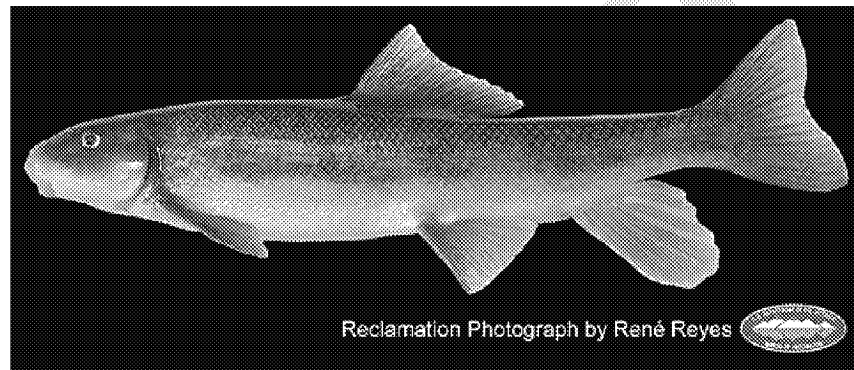


Figure 6. Sacramento Sucker, *Catostomus occidentalis* (Source R. Reyes, US Bureau of Reclamation).

Sculpin sp. (likely prickly sculpin) grow up to 20 cm. Prickly Sculpin are adaptable to environments ranging from fresh to saltwater, and from small cool stream to large warm rivers and lakes. The Prickly Sculpin has a variety of forms as some are coastal, others live in the valley, and some are limited to Clear Lake proper where they are adapted to life in a warm shallow water reaching temperatures of 25-28°C. In the Central Valley of California these fish inhabit low elevation waters. The limitation to the spread of these fish seems to be water quality, as the Prickly Sculpin is not found in highly polluted waters. In streams these fish use a variety of habitats though good cover or overhanging vegetation is a common requirement. Both adults and juveniles consume invertebrates, aquatic insects, and mollusks. Adult sculpins may supplement their diet with small fish and amphibians as well. Prickly Sculpins reach sexual maturity between 2, and 4 years of age. Most spawning occurs between February and June.

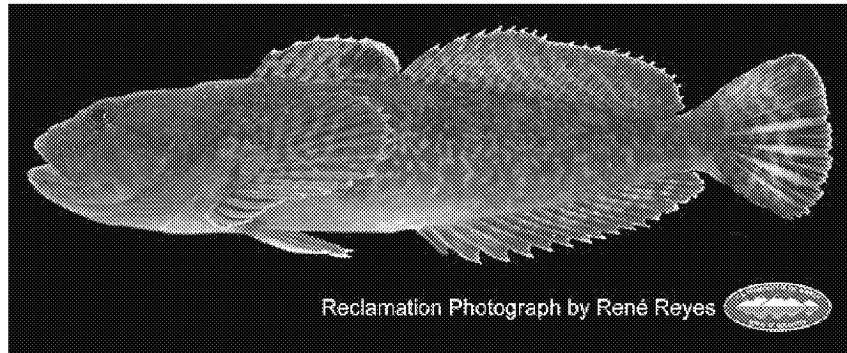


Figure 7. Prickly Sculpin, *Cottus asper* (Source R. Reyes, US Bureau of Reclamation).

Bluegill are most common in warm, shallow lakes, reservoirs, ponds, streams, and sloughs at low elevations. They prefer temperatures between 27°C and 32°C but can live in waters as cold as 2-5°C and as warm as 40-41°C. They are more limited by salinity levels however, occasionally being found in areas of 5 ppt but suffering from arrested development at 8 ppt and die at 12 ppt. They grow best in areas with dissolved oxygen levels between 4 ppm and 8 ppm. Aquatic insect larvae are preferred food but planktonic crustaceans, flying insects, and snails are common food items and small fish, fish eggs, and crayfish can be taken when available. Spawning occurs in summer when temperatures reach 18-21°C and may continue through to September. They construct nest that are 20-30 cm wide and 5-15 cm deep out of the gravel, sand, or mud substrate in shallow water.



Figure 8. Bluegill, *Lepomis macrochirus* (Source R. Reyes, US Bureau of Reclamation).

Green Sunfish may grow to 30 cm. They are most common in small, warm streams with turbid, mud-bottom pools and aquatic vegetation, and are especially prevalent in streams that are intermittent in summer. They can tolerance temperatures greater than 38°C, dissolved oxygen levels

less than 1 ppm. They are opportunistic predators, feeding primarily on invertebrates and small fish. Young of the year feed mainly on zooplankton, small benthic invertebrates, and the larvae of other fish, but, as they grow, the focus of their diet switches towards large aquatic and terrestrial insects, crayfish, and other fish. Green Sunfish mature at the beginning of their third year. Spawning occurs between May and August. Preferred spawning areas are 4-50 cm deep with fine gravel bottoms near overhanging bushes or other cover. Green Sunfish can live to be 10 years old.

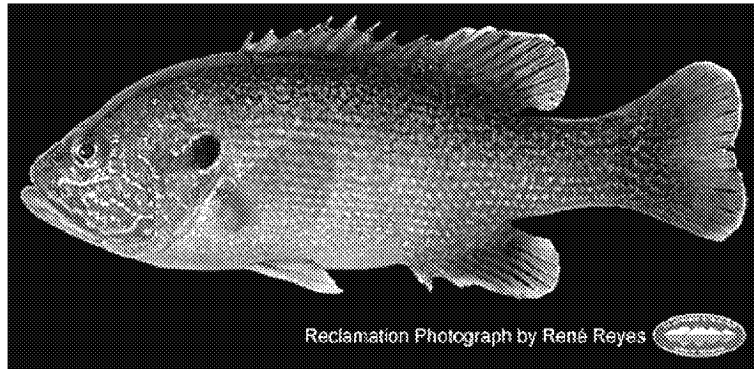


Figure 9. Green sunfish, *Lepomis cyanellus* (Source R. Reyes, US Bureau of Reclamation).

Largemouth Bass may grow to sizes of 76 cm in length. They occur commonly in warm shallow waters with moderate clarity and beds of aquatic plants. Largemouth Bass can survive temperatures up to 36-37°C but 27°C is preferred. They can also survive in water with dissolved oxygen levels as low as 1 ppm but will avoid areas with salinities higher than 3 ppt. In general, fry feed on crustaceans and rotifers before taking on insects and fish fry at 50-60 mm in length. They become primarily piscivorous at 100-125 mm in length. Crayfish, tadpoles, or frogs may also be consumed once a Largemouth Bass has grown large enough to digest them. Spawning starts in March or April when temperatures reach 15-16°C and continues through June in temperatures up to 24°C. Males build nests by brushing out shallow depressions, up to 1 m in diameter, into sand, gravel, or debris-littered bottoms.

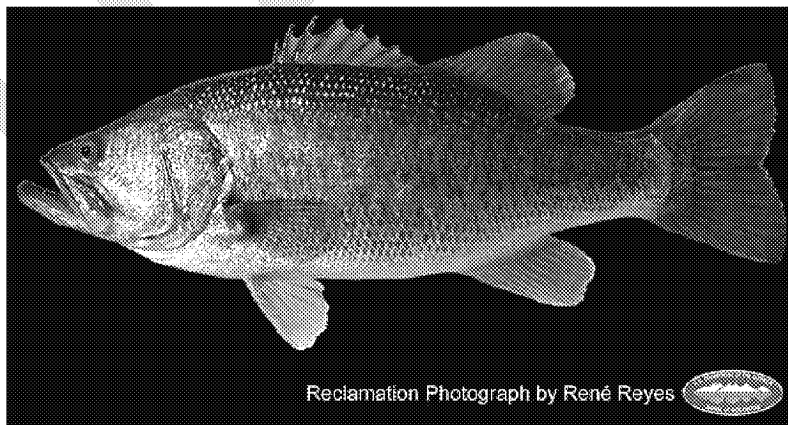


Figure 10. Largemouth bass, *Micropterus salmoides* (Source R. Reyes, US Bureau of Reclamation).

Western Mosquitofish are small fish; females reach lengths of 7 cm while male reach lengths of only 4 cm. They are extremely adaptable and can survive in habitats from brackish sloughs and salt marshes to warm ponds, lakes, and streams. They can tolerate temperatures of 42°C, pH levels of 4.7 to 10.2, and salinities as high as 58 ppt but prefer areas at 25-30°C, 7-9 pH, and salinities under 25 ppt. Due to their unique head shape Western Mosquitofish can push their mouth to the absolute edge of the water’s surface where oxygen is just being dissolved. This allows them to live in bodies of water with extraordinarily low oxygen levels, as low as 0.2 ppm. They are opportunistic diurnal feeders, their diet includes mosquito larvae, algae, zooplankton, terrestrial insects, and various other invertebrates. In California, the breeding season is usually April through September. They are an ovoviviparous species with females giving birth to live young. Most fish breed only once, and few survive longer than 15 months.

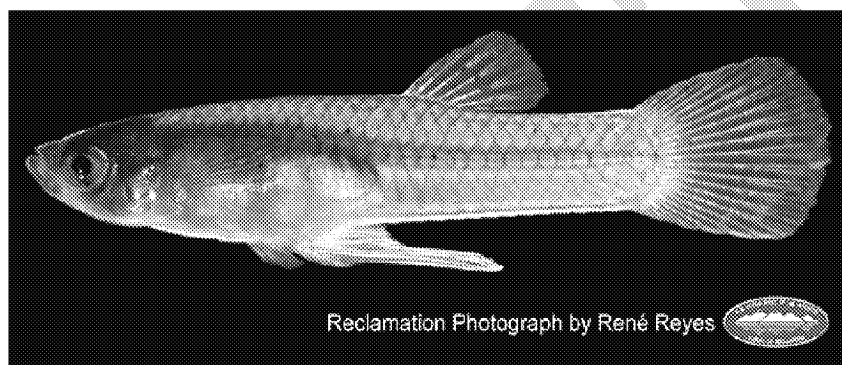


Figure 11. Western mosquitofish (male), *Gambusia affinis* (Source R. Reyes, US Bureau of Reclamation).

Table 3. Temperature, Spawning Seasons, and Substrates for Species in Project Area

Common Name	Temperature preference	Spawning season	Spawning substrate
California roach	30-35°C	Mar - Jul	Gravel
Sacramento hitch	> 30°C	Feb - Jul	Broadcast spawners over gravel
Sacramento blackfish	22-28°C	Feb - Jul	Think vegetation
Sacramento pikeminnow	18-28°C	Apr - May	Riffle and pool tails with gravel
Sacramento sucker	20-25°C	Feb - Jun	Riffles over gravel
Sculpin	25-28°C	Feb - Jun	Sandy area with overhanging vegetation
Bluegill	27-32°C	Jun - Sep	Gravel, sand, or mud
Green sunfish	< 38 °C	May - Aug	Fine gravel near overhanging vegetation
Largemouth bass	27-37 °C	Mar- Jun	Sand, gravel, or debris littered bottom
Mosquitofish	25-32 °C	Apr - Sep	Live bearing near cover

We note that the UC Davis California Fish Website/fish by location for Stone Corral and Funks creeks lists all these species plus several other species (see the attached appendix), including additional warm water species and cold water/anadromous species. We opted to not include these additional species in this memo because the original sources of information for including them on the UC Davis Fish Website were not readily available and some of the listing appear outdated or dubious. For example, some species were included based on historical records (for example, Thickettail Chub, *Gila crassicauda*, are now extinct) and are no longer present. Some are included based on expert opinion rather than documented observations, and some appear to have been included by reference to higher level watersheds (8 digit hydrologic unit code (HUC) instead of a 12 digit HUC)⁵, which include portions of the Sacramento River and sloughs. The warm water species on the UC Davis fish website but described in detail are all tolerant of a wide spectrum of temperatures, salinities, and dissolved oxygen levels and would likely be affected by the Sites Reservoir project just as the species that were documented as present in the CDFW studies.

The anadromous/cold water species in the UC Davis list may have been incorporated by reference to 8-digit HUC that the National Marine Fisheries Service (NMFS) used to identify critical habitat for spring-run Chinook salmon and Steelhead. That 8-digit HUC (the Sacramento-Stone Corral sub-basin) includes the Sacramento River mainstem from the confluence of the Feather River to the confluence with Stone Creek and therefore includes all the anadromous species in the Sacramento River. However, those anadromous/cold water species are unlikely to occur in the smaller 12-digit HUCs of Stone Corral and Funks creeks because the habitat in Stone Corral and Funks creek is unlikely to support anadromous/cold water species.

CDFW investigators did observe one adult Chinook salmon (later confirmed to be a spring-run Chinook Salmon) in Antelope Creek. Antelope Creek is a tributary that flows into Stone Corral Creek in the inundation area of the proposed reservoir. This was likely an out-of-habitat stray that wandered from the Sacramento River through the CBD and Stone Corral Creek to Antelope Creek. Like Stone Corral Creek, Antelope Creek receives no cold snowmelt water, is flashy in nature, frequently dries in summer months, and otherwise is too warm to support cold water species of anadromous fish. Consequently, the CDFW investigators did not include Chinook salmon as a species present in the Stone Corral or Funks creeks in their report (CDFG 2003).

In addition, the only access to Stone Corral and Funks creeks from the Sacramento River is through the CBD. State and federal fish agencies have been working with local water districts to exclude anadromous fish from the CBD (NMFS 2014). Salmon and sturgeon migrating upstream through the Yolo Bypass can be attracted to flows in Knights Landing Ridge Cut and the CBD, particularly if diverted water carries olfactory cues from the upstream Sacramento River. In the CBD, a combination of warm temperatures, poor water quality, limited habitat, and a lack of access upstream for returning to the Sacramento River leaves anadromous fish stranded where they perish without spawning (ICF 2016).

⁵ USGS delineates watersheds using a nationwide system based on surface hydrologic features. This system divides the country into 21 regions (2-digit), 222 subregions (4-digit), 370 basins (6-digit), 2,270 sub-basins (8-digit), ~20,000 watersheds (10-digit), and ~100,000 sub-watersheds (12-digit). Each division is assigned a hydrologic unit code beginning at the regional level with 2 digits. Each level is subsequently divided into smaller units down to the smallest units, the 12-digit HUC. Each higher units contains all the smaller units within its boundaries.

In 2016, Reclamation District (RD) 108 completed construction of the Wallace Weir Fish Rescue Facility, which is designed to exclude fish migrating upstream in the Yolo Bypass from entering Knights Landing Ridge Cut and the CBD (NMFS 2019). RD 108 and the resource agencies are also working to preclude fish from entering the CBD via the Knights Landing Outfall Gates. Additionally, the NMFS recovery plan for salmonids in the Central Valley calls for identifying other potential entry points into the CBD and installing fish exclusion devices to reduce migration of listed adult salmonids into the CBD complex (NMFS 2014).

Effects of Sites Reservoir Project on Stone Corral Creek and Funks Creek

The Sites Reservoir Project is an offstream storage project designed to store and manage water diverted from the Sacramento River. To create the reservoir, Sites Dam and Golden Gate Dam will be built across Stone Corral Creek and Funks Creek along with several saddle dams to raise low points in the rim around the proposed reservoir site. The dams across Stone Corral and Funks creeks will retain the flow from these creeks. The project description in the Draft EIR/EIS included low-level outlet works in the two dams capable of releasing stream maintenance flows of up to 10 cfs into Stone Corral and Funks creeks to mimic the intermittent nature of these streams (Chapter 3 of the Draft EIR/EIS). Flow into the low-level outlets would be from low in the reservoir. To the extent the reservoir stratifies in the late spring and summer, these outlets would release cold water into the streams, which are currently populated with species more typically adapted to warm water environments. Releases of 10 cfs would likely warm quickly below the dams due to the lack of riparian cover and high ambient temperatures that occur in late spring, summer, and early fall in the Sacramento Valley. In addition, flow from Funks Creek into Funks Reservoir would likely be warmed in the shallow reservoir and would not affect temperatures below Funks Dam. The effect of this temperature shift on the warm water community below the dams is anticipated to be minimal due to the potential for solar warming on the valley floor.

Given that construction plans do not include fish passage facilities, fish will be precluded from moving above the dams in search of refugia during late spring and summer dry periods, and information on the availability of refugia habitat below the reservoir location is lacking so there is a potential for stranding of fish below the dams as winter flows diminish. CDFW's recommendation for a perennial flow would address this issue. However, absent a perennial flow, fish could continue to move downstream to wetted habitat given GCID's use of the stream channels for conveyance.

High flood flows in the historical hydrograph will be retained in the reservoir to achieve the flood control benefits recognized by the California Water Commission in its review of the Sites Authority request for funding from the Water Storage Investment Program (WSIP). Consideration should be given to when and how those flows will be released, whether a portion of these flows are needed to maintain fluvial geomorphic processes, and what level of variability in base flows will satisfy California Fish and Game Code section 5937 goals consistent with the goals and objectives of the Sites Reservoir Project.

Recommendations for Consideration

The CDFW fish investigation referenced above was conducted upstream of the Sites Dam and Golden Gate Dam locations. The assemblage of fish identified in those studies is reasonably representative of the fish species that occur below the dam locations because the same species have been documented in the CBD. For reasons discussed above, Stone Corral and Funks creeks are unlikely to support populations of any special-status fish species. To the extent special-status species occur in the CBD, cooperative efforts are underway to exclude them. Nevertheless, the Sites Authority should confirm with CDFW that the appropriate list of fish likely to be affected in Stone Corral and Funks creeks is the warm water community documented in the 1998 and 1999 CDFW studies.

The Sites Authority should also meet with CDFW to discuss CDFW's expectation for flows that would maintain fishes in good condition in Stone Corral and Funks creeks. CDFW input on whether hydrologic studies are needed to define the hydrology of these watersheds under current conditions would be useful, and if so, their input on the design of those studies. The recommendation presented below was developed to provide a rationale for a reasonable approach the engineering team could use for preliminary design of facilities to be incorporated in the project description for the environmental review being conducted by the Sites Authority. While we think this recommendation is sufficient for planning purposes, we have no way of knowing whether it will satisfy CDFW concerns without their review.

Given that the dams associated with Sites Reservoir will retain the flows from these streams in the proposed reservoir, the project should be modified to provide a flow representative of the variability in pre-project flows for the purpose of maintaining fish in good condition. The critical question is: what is the appropriate level of variability in flows? There has not been a flow investigation to develop a recommended hydrograph for releases from Sites Dam or Golden Gate Dam and the WSIP schedule for environmental review precludes a detailed study. Richter et al. (2011) have proposed a "presumptive standard" for stream flows that would likely sustain fishery resources in the affected streams. They proposed implementation of this standard when time and resources are not available to undertake the extensive hydrological studies that are required to develop values for sustaining fishery resources. Their presumptive standard is based on characterizing unimpaired flow and protecting a percentage of those flows to protect the ecological function of a waterway, similar to SWRCB's proposed percent of unimpaired flow approach for its update of the Bay Delta Plan for flows in the San Joaquin and Sacramento Rivers (SWRCB 2018).

Richter et al. (2011) suggest that protecting 80 percent of daily flow will maintain ecological integrity in most rivers and streams. While they suggest a reduction in flows of 20 percent may result in some structural change, they expect it would result in only minimal changes in ecosystem function.

While other approaches exist to estimate minimum stream flows to maintain ecosystem and geomorphic function, such as "the functional flow" approach suggested by Yarnell et al. (2015), they require information that is not currently available. In addition, the Yarnell et al. (2015) approach was developed for consideration in highly developed streams and rivers where societal demands are well established and mimicking the full natural flow regime is not likely to be implemented. This situation does not appear to apply to Funks and Stone Corral creeks.

For the Sites Project, the reaches of stream likely to be most modified by the two proposed dams are the reaches from below the dams to where they have been modified by historical water management practices (reaches of interest, Fig. 1). On Stone Corral Creek, the reach of interest is from the downstream face of the Sites Dam to just above the GCID canal; on Funks Creek, it is from the downstream face of Golden Gate Dam to the upper end of Funks Reservoir. While these reaches have been modified by cattle grazing and minor diversions for domestic use and stock watering, they still experience much of their natural hydrograph and fluvial geomorphic processes. As such, the Richter et al. (2011) approach is a reasonable starting point for addressing CDFG Code Section 5937.

Table 4 presents the 80th percentile of mean daily values of water years for the period of record for the USGS stream gage which was located on Stone Corral Creek. There is only one day that exceeded 78 cfs. Therefore, we recommend that the Sites Authority ask its engineering team to consider designing facilities capable of releasing up to 80 cfs to the reaches of interest in Stone Corral and Funks creeks. Given the erosive nature of the soils in the Stone Corral and Funks watersheds and the current constraints of their respective stream channels (i.e., deep channels and shallow ravines) in the reaches of interest, a variable flow up to 80 cfs may be enough to maintain geomorphic processes (e.g. mobilization of bedload, and erosion of stream banks) that support the fish assemblage and other aquatic species below the dams.

The project description in the Draft EIS/EIR included a base flow of 10 cfs. However, it was equivocal whether the base flow would be provided year-round or from October to May. Since Stone Corral and Funks Creeks are intermittent streams, which did not flow in summer months of average years and in dry years did not flow at all (Table 1). While CDFW code section requires maintaining fish in good condition, it's not clear that it requires conversion of intermittent streams to perennial streams, and while fish will be precluded from migrating to the upper reaches of Stone Corral and Funks Creek they will be able to move downstream to reaches maintained by agricultural diversions into the stream channels. Therefore, we recommend a flow regime that maintains the intermittent nature of these streams and protects the 80th percentile of the documented hydrology.

Finally, for reasons stated above, we recommend the engineering team consider facilities in the project design capable of delivering 0 to 80 cfs to the stream channels below Sites Dam and Golden Gate Dam. Also, consideration should be given to a mechanism that will provide higher flows on an infrequent basis, consistent with the project's flood control benefit for maintenance of fluvial geomorphic processes, such as channel forming flows (perhaps flows of several hundred cfs).

If necessary, the Richter et al. (2011) approach could be adaptively managed to incorporate some of the more flexible processes suggested by a functional flow approach. This would likely require installation of stream gages to record the hydrograph in these streams over several years and water year types to determine flow variability. Fish surveys to confirm species presence, distribution and habitat use. Also monitoring programs to confirm the frequency and magnitude of flows to mobilize the bedload, freeing embedded gravel, clearing sandy and muddy areas of vegetation, and eroding stream banks are all elements that may be required to maintain the diversity of spawning habitats used by the assemblage of fish documented to be present in these streams. In addition, whether the 80th percentile of the historical hydrograph is sufficient for channel forming flow needed maintain

ecological function of the reaches below the dams needs to be determined. These studies would need to document habitat availability and habitat use. Such information would provide important information for determining whether these reaches will provide habitat necessary for the fish present to complete their life cycles after the dams are constructed and perennial flow is provided.

Development of an adaptive management approach for compliance with California Fish and Game Code 5937 is another subject for which input from CDFW would be valuable. Absent CDFW input, the Sites Authority risks over-designing this aspect of the project which would result in unnecessary cost. Under-designing this aspect of the project could lead to costly re-engineering late in the design or permitting processes.

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Table 4. 80th percentile of daily mean values for each day for water year of record (calculation period of record 1957-10-01 to 1985-09-30)

Day of the Month	Discharge, Cubic Feet per Second											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1.9	21	26	13	3.3	0.34	0.04	0	0	0	0	0.72
2	2.7	19	17	12	2.9	0.26	0.04	0	0	0	0	2.3
3	2.5	19	29	10	3	0.18	0.04	0	0	0	0	2.1
4	4.8	15	42	9.5	3.2	0.25	0.04	0	0	0	0	1.1
5	4.7	17	47	11	3	0.32	0.04	0	0	0	0	1
6	5.4	13	39	11	3	0.28	0	0	0	0	0	0.6
7	4.2	13	40	11	3	0.24	0	0	0	0	0	0.42
8	4.8	26	29	8	2.6	0.23	0	0	0	0	0	0.48
9	20	32	24	7.4	2.4	0.23	0	0	0	0	0	0.57
10	9.4	44	23	7.5	2.2	0.15	0	0	0	0	0	0.52
11	15	11	20	7.3	2.1	0.19	0	0	0	0	0	0.47
12	19	49	18	7.1	1.8	0.19	0	0	0	0	0	0.47
13	29	76	17	6.9	1.6	0.23	0	0	0	0	0	0.47
14	24	58	16	9.5	1.5	0.17	0	0	0	0	0.01	0.47
15	38	78	15	9	1.3	0.18	0	0	0	0	0.01	0.51
16	191	69	18	8.5	1.1	0.1	0	0	0	0	0	0.62
17	50	55	16	6.9	0.84	0.1	0	0	0	0	0	0.82
18	33	46	16	5.6	0.7	0.1	0	0	0	0	0.04	0.89
19	24	28	18	5.2	0.66	0.07	0	0	0	0	0.26	6.2
20	29	31	15	4.9	0.63	0.06	0	0	0	0	0.07	2.8
21	34	31	37	4.7	0.57	0.06	0	0	0	0	0.02	15
22	23	23	24	4.6	0.5	0.07	0	0	0	0	0	9.8
23	19	18	17	4.7	0.52	0.06	0	0	0	0	0.06	6
24	17	16	13	4.9	0.44	0.05	0	0	0	0	0	7.2
25	18	16	13	4.6	0.44	0.04	0	0	0	0	0	4.4
26	15	15	9.2	5.2	0.44	0.04	0	0	0	0	0.02	4
27	28	15	15	4.6	0.34	0.03	0	0	0	0	0.09	3.2
28	20	15	15	4.3	0.29	0.03	0	0	0	0	1.9	3.8
29	44	18	11	3.7	0.27	0.04	0	0	0	0	1.1	4.7
30	34		14	3.6	0.24	0.04	0	0	0	0	0.68	2.6
31	29		12		0.18		0	0		0		1.5

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Appendix

Species Lists Funks and Stone Corral Creeks: University of California Agriculture and Natural Resources - California Fish Website - Fish Species by Watersheds

Funks Creek-180201040602'	Stone Corral Creek-180201040604'
Native species	Native species
Western Brook - <i>LampreyLampetra richardsoni</i>	Western Brook - <i>LampreyLampetra richardsoni</i>
Thick tail Chub - <i>Siphatales carssicauda</i>	Thick tail Chub - <i>Siphatales carssicauda</i>
Riffle Sculpin - <i>Cottus gulosus</i>	Riffle Sculpin - <i>Cottus gulosus</i>
Sacramento Blackfish - <i>Orthodon microlepidotus</i>	Sacramento Blackfish - <i>Orthodon microlepidotus</i>
Sacramento Perch - <i>Archoplites interruptus</i>	Sacramento Perch - <i>Archoplites interruptus</i>
Sacramento Pikeminnow - <i>Ptychocheilus grandis</i>	Sacramento Pikeminnow - <i>Ptychocheilus grandis</i>
Sacramento Speckled Dace - <i>Rhinichthys osculls</i>	Sacramento Speckled Dace - <i>Rhinichthys osculls</i>
Sacramento Splitttail - <i>Pogonichthys macrolepidotus</i>	Sacramento Splitttail - <i>Pogonichthys macrolepidotus</i>
Sacramento Sucker - <i>Catostomus occidentalis occidentalis</i>	Sacramento Sucker - <i>Catostomus occidentalis occidentalis</i>
Pacific Lamprey - <i>Entosphenus tridentate</i>	Pacific Lamprey - <i>Entosphenus tridentate</i>
Prickly Sculpin - <i>Cottus asper</i> subspecies	Prickly Sculpin - <i>Cottus asper</i> subspecies
Hardhead - <i>Mylopharodon conocephalus</i>	Hardhead - <i>Mylopharodon conocephalus</i>
Inland Treespine Stickelback - <i>Gasterosteus aculeatus</i>	Inland Treespine Stickelback - <i>Gasterosteus aculeatus</i>
Central California Roach - <i>Lavinia symmetricus</i>	Central California Roach - <i>Lavinia symmetricus</i>
Central Valley Steelhead - <i>Oncorhynchus mykiss</i>	Central Valley Steelhead - <i>Oncorhynchus mykiss</i>
Coastal Rainbow Trout - <i>Oncorhynchus mykiss irideus</i>	Central Valley Spring Chinook <i>Oncorhynchus tshawytscha</i>
Introduced species	Introduced species
Black Bullhead - <i>Ameiurus melas</i>	Common Carp - <i>Cyprinus carpio</i>
Bluegill - <i>Loponis macrochirus</i>	Goldfish - <i>Carassius auratus</i>
Brown Bullhead - <i>Ameiurus nebulosus</i>	Readear Sunfish - <i>Leponis microlophus</i>
Common Carp - <i>Cyprinus carpio</i>	Samllmouth Bass - <i>Micropterus dolomieu</i>
Golden Shiner - <i>Notemigonus crysoleucas</i>	White Crappie - <i>Pomoxis annularis</i>
Goldfish - <i>Carassius auratus</i>	Spotted Bass - <i>Micropterus punctulatus</i>
Green Sunfish - <i>Lepomis cyanellus</i>	
Largemouth Bass - <i>Micropterus salmonoides</i>	
Readear Sunfish - <i>Leponis microlophus</i>	
Samllmouth Bass - <i>Micropterus dolomieu</i>	
Western Mosquitofish - <i>Gambusia affinis</i>	
White Crappie - <i>Pomoxis annularis</i>	
http://calfish.ucdavis.edu/location/?ds=697&reportnumber=1294&catcol=4703&categorysearch=Colusa	

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/23/2020 11:04:45 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Luu, Henry [Henry.Luu@hdrinc.com]
Subject: RE: FERC Licensing Requirements

I have had an opportunity to run this to ground with HDR and Jacob's sub Wayne Dyok. Please see my responses below.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Wednesday, October 14, 2020 8:46 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: FW: FERC Licensing Requirements

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Henry and John –

On our call with NRDC last week, Ron Stork with Friends of the River asked about our FERC license. I explained that we were going to keep our facilities below that which would require a FERC license. He mentioned two things:

1. Can we confirm the size of our facilities and that we would qualify for an exemption? Henry, can you let me know where we are in discussions with FERC as I know this is an active question out there?

- JJS: The current plan is to install between 70 and 75 MW of capacity that would be split between Funks and TRR, and would be considered 2 separate projects by FERC as the maximum capacity covered by the exemption for any one "Qualifying Conduit Hydropower Facility" is 40 MW. Wayne is waiting to hear back from FERC on their decision on the one vs two projects. If FERC does not allow the 2 project approach, then the capacity would be lowered to no more than 40MW to qualify for the exemption.

2. We have to get approval for an exemption / like there is some application and granting of an exemption – it's not just automatic. John, can you check into this with your FERC team. This was news to me, but I confess that I know very little about the FERC process. Is there approval for an exemption? If so, what does this process look like? And if so, we should add this into our schedule so we keep it on our radar screen.

- The "exemption" for a Qualifying Conduit Hydropower Facility is actually more like an exemption to the exemption process that was established by the Hydropower Regulatory Efficiency Act of 2013, as amended by America's Water Infrastructure Act of 2018. The 2013 rule streamlines the FERC review/approval process for a qualifying facility to a 30 day public review period of any project's exemption packet with an approval/denial within 45 days.

- JJS: The 30 day public review period does allow opportunities for agencies, NGOs and the public to provide comments on the exemption packet. Wayne stressed that this commenting process is relatively routine as the project either qualifies or it doesn't, and FERC would not circulate an application they did not feel meets the requirements of the exemption for a Qualifying Conduit Hydropower Facility.

- The general thought would be to file for the exemption(s) once the EIR/EIS goes final, but it could be sooner if so desired as the level of design we will have in 2021 would be sufficient for the application packet.

- Wayne has worked with Ron on several occasions and has a good relationship with him. He offered to help in coordinating with him or the NGO's on the FERC component.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Jerry Brown <jbrown@sitesproject.org>
Sent: Wednesday, October 14, 2020 8:21 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: FERC Licensing Requirements

Do you think we should send this note to Ron Stork as a follow-up to his question last week?

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Monday, June 1, 2020 12:02 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>;
Williams, Nicole <Nicole.Williams@icf.com>
Subject: RE: Sites - Project Description Team - Revised PMP and Updated Schedule

After discussions with HDR's FERC practice regulatory staff there is a general consensus that the project would not need a FERC license for the reservoir as it does not propose to generate power. With respect to the conduit hydro-electric facility, we also believe that the project would likely be a, "Qualifying Conduit Hydropower Facility" under the Hydropower Regulatory Efficiency Act of 2013, as amended by America's Water Infrastructure Act of 2018. A project that is deemed a Qualifying Conduit Hydropower Facility is not required to be licensed or exempted by FERC provided it meets the following conditions:

1. The conduit is any tunnel, canal, pipeline, aqueduct, flume, ditch, or similar manmade water conveyance that is operated for the distribution of water for agricultural, municipal, or industrial consumption, and is not primarily for the generation of electricity.
2. The facility generates electric power using only the hydroelectric potential of a non-federally owned conduit (the US does not hold fee title).
3. The facility has an installed capacity that does not exceed 40 megawatts (MW).
4. The facility was not licensed or exempted from the licensing requirements of Part I of the FPA on or before August 9, 2013

This process is extremely streamlined and is a 45 day review and processing of the NOI by FERC staff. More information is at the link below.

<https://www.ferc.gov/industries/hydropower/indus-act/efficiency-act/qua-conduit.asp>

John Spranza

D 916.679.8858 M 818.640.2487

From: Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]
Sent: 10/23/2020 5:57:11 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Grover, Joshua@Wildlife [Joshua.Grover@wildlife.ca.gov]
Subject: RE: Sites - Prop 1 Understanding

Hi Ali,

I appreciate you sending me this table and giving me the opportunity to provide input in order to work towards aligning our understanding of the requirements for WSIP ecosystem benefits. Instead of making edits to the table, I think it will be more clear if I lay out some general thoughts.

- In the Sites application there are many references to the potential to develop an ecosystem enhancement storage account (EESA) that could be managed by the State. While this concept was included in the application, it is not the ecosystem benefit that was quantified, monetized, and ultimately accepted by the CA Water Commission.
- The attached table includes some references to the regulations and technical reference (TR), which was incorporated into the regulations. Here are some additional sections from the regulations that more clearly demonstrate what constitutes an ecosystem benefit and the responsibility of a project:
 - TR Section 4.12.2 – Each proposed project will need appropriate conveyance and distribution systems to provide the water supply to users. Applicants must demonstrate that the project is physically capable of providing the water supply to the users, whether using existing facilities, new facilities that are part of the project, or exchange agreements.
 - TR Section 4.3 describes surface water operations analysis and how this is foundational for analyzing public benefits. Projects affect a physical change (e.g. more flow in the river) and the physical change can have a corresponding ecosystem improvement. It is the ecosystem improvement that is the public benefit, not the physical change in of itself. This section also describes requirements for considering constraints in conveyance, need for agreements that demonstrate ability to store and convey water, and analyses at the adequate spatial and temporal resolution to quantify the benefits claimed.
 - TR Section 4.5 Riverine Hydrologic/Hydraulic Analysis – The physical changes analyzed through riverine hydrology and hydraulics provide a necessary link between water storage project operations and resulting benefits.
 - TR Section 4.7 describes concepts and methods for quantifying ecosystem improvements that could result from water storage projects. Ecosystem benefits are expected if physical changes are provided at locations and times, and of sufficient quality, where habitats and species would benefit from such changes. Species criteria must be well understood and explained to achieve targeted ecosystem improvements, as species and habitats are likely to have unique, and sometimes precise, requirements for water quality, timing, and pattern of flow (TR 4.7.4.1).
 - TR Section 4.7.2.4 – Project proposals should describe specific information such as number, magnitude, mix, location, duration, and timing of benefits. Project proposals should also include clearly stated goals and objectives for ecosystem improvements, including programs for monitoring and adaptive management and strategies for resilience to climate change.
 - Section 4.7.5 describes metrics that may be used to assess targeted ecosystem improvements (benefits). Within this section, Table 4-10 lists examples of Ecosystem Priorities, physical changes and their metrics, and the associated targeted outcome and their metrics. For example, Ecosystem Priority 7 (increased Delta outflow for longfin smelt and Delta smelt) has a physical metric of increased water flow (in cfs) at appropriate timing (within- and among-year) and targeted outcome metric of a change in the extent of low salinity habitat (in acres or % change). Ecosystem Priority 14 (water to wetland and refuges) has a physical metric of flows delivered at managed lands at appropriate times.
- Having specificity on the ecosystem benefit is necessary because the regulations require the following in the public benefit contract:
 - An adaptive management plan for the public benefit funded under the Program. The adaptive management plan shall contain:
 - Public benefit monitoring metrics;
 - Monitoring locations, frequencies, and timing;

- Metric evaluation methodology and associated threshold or trigger levels based on best available science that initiate adaptive management actions;
- Decision making process including the administering agencies role and the adaptive management actions that would be taken when a trigger is reached;
- Funding sources and financial commitments to implement the adaptive management plan.
- During the technical review, Sites received a score of 3 out of 5 for financial feasibility, which was part of the overall Implementation Risk score. Part of reasoning was because no explicit funding source was identified for some of the capital and O&M costs required to operate the project, including O&M costs associated with public benefits. CA Water Commission staff found that the funding sources were not substantiated for some future O&M costs.

Please let me know if you would like to discuss any of these items further.

Kristal

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, October 22, 2020 12:58 PM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>
Subject: Sites - Prop 1 Understanding

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Hi Kristal – Thanks for the great discussion today. Attached is the table that I mentioned on the phone.

Jerry, Thad and Fritz have a meeting with Chuck on Tuesday, 10/27. Sites would like to talk with Chuck a bit about the differences we are seeing in our respective approach to environmental benefits. We've developed the attached table to try to simply lay out the facts/ our understanding of the facts. We realize that our respective approaches are foundational to any benefits discussion, so we'd like to make sure we are communicating well on these and working to align our approach going forward. I realize and appreciate that we have a common goal in bridging these gaps and aligning the benefits with the statute/regulations.

It would be fantastic if you could take a look at the attached table. Please feel free to provide any corrections / additions / edits as you see fit. And if you'd rather not provide changes, we completely understand also.

Thanks Kristal!

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/24/2020 2:36:57 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: Talking points and PPT for Jerry
Attachments: Sites Project Update- PD and Aquatics Modeling_For Jerry 20201024.pptx

Hi,
Disregard the 2 previous version and use the text below. I have also included a few high-level slides for you to review/revise for Jerry.

- Model refinements are close to complete
- Team is working through various iterations to understand possible project impacts
- Initial results indicate slightly lower releases than were assumed in value planning, but it is expected numbers will come up for dry and critically dry years before model is finalized (estimated to increase by 10%) and will likely hit VP targets, with wet year numbers staying below VP estimates.
- Initial results showing minimal environmental impacts, if any. Coldwater pool benefits expected to increase slightly once model is finalized – full Shasta exchanges not yet included.
- Two multi-agency meetings to brief staff are planned for Monday 10/26:
 - The first is a general/high-level discussion of the 2020 CalSim II model updates and initial diversions, releases, Sacramento River flows and Delta Outflow results for any interested Reclamation, USFWS, NMFS and CDFW staff.
 - The second is a workshop for state and federal regulatory staff to review and discuss additional model results with the Site's aquatics team. The focus will be on assessing effects from the revised project, working through agency concerns and refining diversion criteria.

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
hdrinc.com/follow-us

Joint Agency Meetings

- USFWS, NMFS and Reclamation attending
- Two meetings on 10/26:
 1. General Meeting – Larger diverse group
 - Revised project description
 - 2020 model update
 2. Aquatics Workshop – Smaller regulatory group
 - Working with Agency permitting staff and ICF aquatics team
 - Focus on modeling, initial effects of revised project and refining diversion criteria

Preliminary Draft – Subject to Change – Not for Public Distribution



Speaker: Ali

Draft - Predecisional Working Document - For Discussion Purposes Only

General Meeting: Topics

- Updates to Sites Project sizing and facilities
- Updates to CalSim II model
- Preliminary Effects Analysis (PEA)
- Discussion of modeling assumptions
- Results: Diversions and Releases

Preliminary Draft -- Subject to Change -- Not for Public Distribution



Draft - Predecisional Working Document - For Discussion Purposes Only

Workshop Topics

- Discuss additional modeling results
 - Detailed CalSim, temperature, mortality, NDOI, survival,
- Discussion of analytical tools and initial review of modeling
- Science review panel
 - Russ Perry and Cyril Michel discuss their recent research and applicability to project
- Group development of model refinements
 - Diversion criteria
 - Bypass flows
 - Other Agency concerns

Preliminary Draft -- Subject to Change -- Not for Public Distribution



Draft - Predecisional Working Document - For Discussion Purposes Only

General Results

- Model refinements are close to complete
- Initial results indicate:
 - Slightly lower releases than were assumed in value planning,
 - Expected to increase for dry and critical years before model is finalized
 - Expected to hit dry and critical VP targets, with wet year numbers staying below VP estimates.
 - Minimal environmental impacts, if any.
- Coldwater pool benefits expected to increase slightly once model is finalized – full Shasta exchanges not yet included

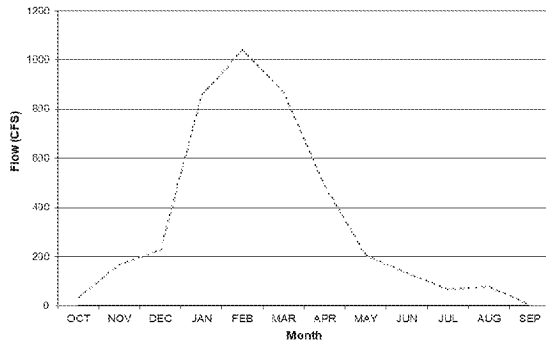
Preliminary Draft -- Subject to Change -- Not for Public Distribution



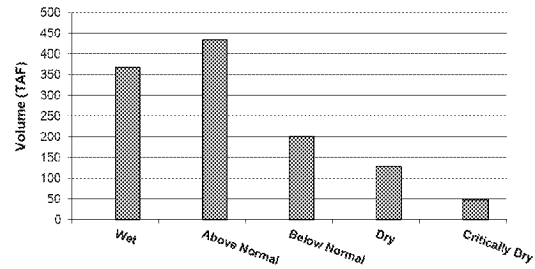
Draft - Predecisional Working Document - For Discussion Purposes Only

Initial Results: Sites Diversions

Total Sites Diversion to Fill (PRELIMINARY) Averages



October-September: Total Sites Diversion to Fill (PRELIMINARY) Water-year Type Averages



Output Parameter	Long-term Average (TAF)	Dry and Critical Average (TAF)
Diversions	244	57

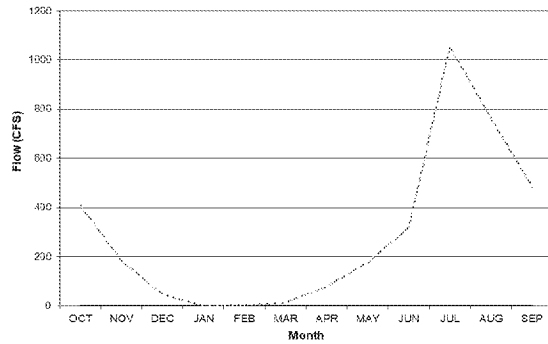


Preliminary Draft -- Subject to Change -- Not for Public Distribution

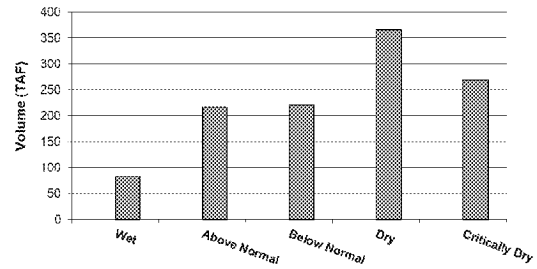
Draft - Predecisional Working Document - For Discussion Purposes Only

Initial Results: Sites Releases

Total Sites Release (PRELIMINARY) Averages



October-September Total Sites Release (PRELIMINARY) Water-year Type Averages



Output Parameter	Long-term Average (TAF)	Dry and Critical Average (TAF) ¹
Releases	216	307

¹Dry and Critically Dry releases are preliminary and subject to increase



Preliminary Draft -- Subject to Change -- Not for Public Distribution

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/24/2020 4:06:14 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]; Briard, Monique [Monique.Briard@icf.com]; Williams, Nicole [Nicole.Williams@icf.com]
Subject: Biweekly EIR/EIS meeting -Agenda/Topics
Attachments: 20201026_EIR_EIS-AGN.docx; PMPB04 - IT Plan - Attachment 1 GIS Plan (1).docx; GIS Process and Standards

Hi All --

Nicole has suggested a fairly extensive list of topics for our meeting on Monday. Nicole and I may have a pre- or post-meeting call to go over some of these items in more detail but I have included all on the current draft agenda. The agenda and GIS guidance referenced in the agenda are attached. The draft agenda is also on SharePoint:

https://sitesreservoirproject.sharepoint.com/:w:/r/EnvPlanning/Meetings/Bi-weekly%20EIR_EIS%20meetings/20201026_EIR_EIS-AGN.docx?d=w0300cbfe0d334036b795e7c25f0cea2e&csf=1&web=1&e=IEwRD8

Please edit as needed before our meeting on Monday.

Thank you,

Laurie

From: Williams, Nicole [mailto:Nicole.Williams@icf.com]
Sent: Friday, October 23, 2020 3:35 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Briard, Monique <Monique.Briard@icf.com>
Subject: Biweekly EIR/EIS meeting - thoughts on discussion topics

Hi Laurie, Below are some topics we'd like to address on Monday. If the resource topics are too in the weeds, maybe you and I can set up a separate call either earlier on Monday or first thing on Tuesday. For agenda item #1 we have been discussing internally about how to successfully meet the December Batch 1 deliverable based on the schedule shared with Reclamation this week and want to talk through several ideas with you.

Agenda items:

- 1. December Deliverable & Reclamation schedule**
 - a. Chapter 2 Operations Description (12/28) & Calsim modeling with CDFW diversion criteria (11/23)
 - b. Batch 1 (12/10): not all impacts are construction related; outstanding issues table given delays in Chapter 2 resolutions/Alt 1 and Alt 2 footprints/Means&Methods
 - c. Chapter 2 Resolutions Role
- 2. Baseline memo status**
- 3. Appendix 2B**
 - a. Status of information on CDFW 2019 60 day Process (Ali was looking/has that been uploaded to sharepoint?)
 - b. WSIP materials for inclusion in Appendix 2B
- 4. List of Information received on 11/4 and any follow up needed on AQ tables**
 - a. Smartsheet noted only employee trips would be generated for HR by 11/4
- 5. Traffic methodology**
 - a. CEQA checklist question a: LOS & CEQA checklist question B: qualitative VMT
- 6. TCR**
 - a. Process and what information we may have when
- 7. Agriculture**

- a. Operations and releases into the CBD/Yolo Bypass
- 8. Socioeconomics**
- a. Water Supply Economics Modeling and Water Quality Economics Modeling lines in Reclamation schedule
- 9. Timing for resource specific meetings**
- 10. Map Guidance from PMP (confirm attached is the latest)**

Batch 1 Chapters

Chapter 1, Introduction
Chapter 2, Alternatives Description
Chapter 3, Environmental Analysis
Chapter 4, Regulatory and Environmental Compliance
Chapter 12, Geology and Soils (includes Faults and Seismicity and Paleo)
Chapter 13, Minerals
Chapter 14, Land Use
Chapter 15, Agriculture and Forestry Resources
Chapter 16, Recreation Resources
Chapter 19, Noise
Chapter 23, Tribal Cultural Resources
Chapter 24, Visual Resources
Chapter 25, Population and Housing
Chapter 26, Public Services and Utilities
Chapter 27, Public Health and Environmental Hazards (includes hazards and hazardous materials and wildfires)
Chapter 29, Indian Trust Assets
Chapter 30, Environmental Justice and Socioeconomics
Chapter 32, Other Required Analyses (includes Growth Inducing, Relationship Between Short-term Uses and Long-term Productivity and Irreversible or Irrecoverable Resource Commitments)
Chapter 33, Consultation and Coordination and List of Preparers
Chapter 34, EIR/EIS Document Distribution

Batch 1 Appendices

- 2A, (formerly 2A), *Alternatives Screening and Evaluation (No Change)*
- 2B, *Additional Alternatives Screening and Evaluation*
- 2C, (new), *Construction Means, Methods, and Assumptions*
- 4A, (formerly 4A), *Regulatory Requirements*
- Appendix 27A (formerly 28C), *Environmental Records Search*
- Appendix 30A (formerly 22C), *Regional Economics Modeling (No change)*

NICOLE L. WILLIAMS | Senior Environmental Planner | (o) 916.231.9614 | (m) 530.867.0470 | nicole.williams@icf.com | icf.com
 ICF | 980 9th Street Suite 1200 Sacramento CA 95814 |



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EIR/EIS Biweekly Meeting Agenda



Date: October 26, 2020

Location: WebEx Link included in Outlook Invitation

Time: 3:30 PM to 4:30 PM

Leader: Sites Integration

Recorder: Sites Integration

Purpose: Ongoing EIR/EIS Coordination

Attendees:

Monique Briard, ICF

Ali Forsythe, Sites EPP

Laurie Warner Herson, Sites Integration

Linda Fisher, Sites Integration

Nicole Williams, ICF

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Roll Call	Laurie	2 min
1. December Deliverables & Schedule (see list below)	Nicole/ Monique	15 min
a. Chapter 2 Operations Description (12/28) & Calsim modeling with CDFW diversion criteria (11/23)		
b. Batch 1 (12/10): not all impacts are construction related; outstanding issues table given delays in Chapter 2 resolutions/Alt 1 and Alt 2 footprints/Means&Methods		
c. Chapter 2 Resolutions Role		
2. Status of Baseline Memo	Ali	5 min
3. Appendix 2B (Alternatives)	Nicole	10 min
a. Status of information on CDFW 2019 60 day Process		
a. WSIP materials for inclusion in Appendix 2B		
4. List of Information to be received on 11/4 and any follow up on AQ tables	Nicole/Laurie	5 min
a. Smartsheet noted only employee trips would be generated for HR by 11/4		
5. Specific Resource Topics/Issues (May be deferred to focused call/meeting)	Nicole	10 min
a. Traffic methodology - CEQA checklist question a: LOS & CEQA checklist question B: qualitative VMT		
b. Tribal Cultural Resources - AB 52 Process status and schedule		
c. Socioeconomics - Water Supply Economics Modeling and Water Quality Economics Modeling (lines in Reclamation schedule)		
d. Timing for resource specific meetings		
6. Map Guidance from PMP and 2019 GIS Process and Standards (included as attachment to agenda) – need to confirm current standards	Laurie	5 min
7. Schedule Refinements	Linda	5 min
8. Action Items	All	3 min

Batch 1 Chapters	Batch 1 Appendices
<ul style="list-style-type: none"> • Chapter 1, Introduction • Chapter 2, Alternatives Description • Chapter 3, Environmental Analysis • Chapter 4, Regulatory and Environmental Compliance • Chapter 12, Geology and Soils (includes Faults and Seismicity and Paleo) • Chapter 13, Minerals • Chapter 14, Land Use • Chapter 15, Agriculture and Forestry Resources • Chapter 16, Recreation Resources • Chapter 19, Noise • Chapter 23, Tribal Cultural Resources • Chapter 24, Visual Resources • Chapter 25, Population and Housing • Chapter 26, Public Services and Utilities • Chapter 27, Public Health and Environmental Hazards (includes hazards and hazardous materials and wildfires) • Chapter 29, Indian Trust Assets • Chapter 30, Environmental Justice and Socioeconomics • Chapter 32, Other Required Analyses (includes Growth Inducing, Relationship Between Short-term Uses and Long-term Productivity and Irreversible or Irretrievable Resource Commitments) • Chapter 33, Consultation and Coordination and List of Preparers • Chapter 34, EIR/EIS Document Distribution 	<ul style="list-style-type: none"> • 2A, (formerly 2A), <i>Alternatives Screening and Evaluation (No Change)</i> • 2B, <i>Additional Alternatives Screening and Evaluation</i> • 2C, (new), <i>Construction Means, Methods, and Assumptions</i> • 4A, (formerly 4A), <i>Regulatory Requirements</i> • Appendix 27A (formerly 28C), <i>Environmental Records Search</i> • Appendix 30A (formerly 22C), <i>Regional Economics Modeling (No change)</i>

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/24/2020 5:50:25 PM
To: Leaf, Rob/SAC (Rob.Leaf@jacobs.com) [Rob.Leaf@jacobs.com]; Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Davis, Ryan A [rdavis@usbr.gov]; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) [Kenneth.Kundargi@wildlife.ca.gov]; Williams, Jonathan@Wildlife [Jonathan.Williams@wildlife.ca.gov]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Jerry Brown [jbrown@sitesproject.org]; Melissa Dekar (mdekar@usbr.gov) [mdekar@usbr.gov]; Cordova, Daniel (dcordova@usbr.gov) [dcordova@usbr.gov]; Wilder, Rick [Rick.Wilder@icf.com]; La Luz, Felipe@Wildlife [felipe.laluz@wildlife.ca.gov]; Chris Fitzer (CFitzer@esassoc.com) [CFitzer@esassoc.com]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; noblehendrix@gmail.com; Greenwood, Marin [Marin.Greenwood@icf.com]; Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; Alicia Forsythe [ali@forsythe-group.com]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Perry, Russell W [rperry@usgs.gov]; ebuttermore@usbr.gov; mbeakes@usbr.gov; smanugian@usbr.gov
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Schoenberg, Steven [steven_schoenberg@fws.gov]; cyril.michel@noaa.gov; Huneycutt, Andrew@Wildlife [Andrew.Huneycutt@Wildlife.ca.gov]; Johnson, Matt@Wildlife [Matt.Johnson@wildlife.ca.gov]; Sherrick, Robert@Wildlife [Robert.Sherrick@Wildlife.ca.gov]; Nelson, Jonathan@Wildlife [Jonathan.Nelson@wildlife.ca.gov]; Meyers, Erica@Wildlife [Erica.Meyers@wildlife.ca.gov]
Subject: RE: Sites Joint Aquatics Workshop #1
Attachments: 03-02 Key Operations Modeling Parameters and Assumptions (1).pdf; 2020_1026_Agency Joint Aquatics Workshop-1_AGN_final_revised.pdf; Sites Project Update- Aquatics Modeling_FULL PRESENTATION_20201026.pdf

Hello,

Attached are a revised agenda, a staff report that was in the Sites Board package in September 2020 that provides a discussion of key refinements and new capabilities of the updated Sites Project CalSim model, and a PowerPoint of the combined presentations for both Monday meetings.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----

From: Spranza, John

Sent: Tuesday, October 13, 2020 12:24 PM

To: Spranza, John; Leaf, Rob/SAC (Rob.Leaf@jacobs.com); Davis-Fadtke, Kristal@Wildlife; Davis, Ryan A; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov); Williams, Jonathan@Wildlife; Hendrick, Mike (Mike.Hendrick@icf.com); Jerry Brown (jbrown@sitesproject.org); Melissa Dekar (mdekar@usbr.gov); Cordova, Daniel (dcordova@usbr.gov); Wilder, Rick; La Luz, Felipe@Wildlife; Chris Fitzer (CFitzer@esassoc.com); Hassrick, Jason (Jason.Hassrick@icf.com); noblehendrix@gmail.com; Greenwood, Marin; Evan Sawyer - NOAA Federal; Jim Lecky (jim.Lecky@icf.com); Erin Heydinger (Erin.Heydinger@hdrinc.com); Micko, Steve/SAC; Monique Briard (monique.briard@icf.com); Alicia Forsythe; Cathy Marcinkevage - NOAA Federal; Perry, Russell W; ebuttermore@usbr.gov; mbeakes@usbr.gov; smanugian@usbr.gov

Cc: Alicia Forsythe; Schoenberg, Steven; cyril.michel@noaa.gov; Huneycutt, Andrew@Wildlife; Johnson, Matt@Wildlife; Sherrick, Robert@Wildlife; Nelson, Jonathan@Wildlife; Meyers, Erica@Wildlife

Subject: Sites Joint Aquatics Workshop #1

When: Monday, October 26, 2020 10:00 AM-12:00 PM (UTC-08:00) Pacific Time (US & Canada).

Where: webex

A follow on workshop to discuss the project's diversion criteria and applicable science/models. An agenda will follow.

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Topic: **Joint Authority Board and Reservoir Committee Meeting Agenda Item 3.2** 2020 September 17

Subject: **Key Operations Modeling Refinements**

Requested Action:

Review and comment on the key refinements and new capabilities of the updated Sites Project CalSim model.

Detailed Description/Background:

During Amendment 1B, staff and consultants worked to update and improve the capability of the Sites Project CalSim model that is being used as the basis for the environmental planning, environmental permitting, and feasibility report efforts as part of Amendment 2.

As a result of project changes related to the Sites Project Value Planning Alternatives Appraisal Report as well as the October 2019 Biological Opinions on Long-term Operations of the Central Valley Project and State Water Project (ROC on LTO BiOps) and the March 2020 Incidental Take Permit for Long-term Operations of the State Water Project (SWP ITP), several refinements to the Sites Project Calsim model have been made.

Several components of the model have been refined over the past year to make the model current with regulatory and Sites Project Authority decisions. Refinements include the following:

1. Use of ROC on LTO BiOps as the baseline, with further adjustments forthcoming based on an updated SWP Delivery Capability Report (DCR) 2019 with SWP ITP actions
2. Participation levels to reflect Amendment 2
3. Facilities to reflect Value Planning changes
4. Operational changes related to the Bureau of Reclamation participation from the Federal Feasibility Report

Due to previous model limitations, the team has “tested” a number of components using post-processing methodologies – applying rules and parameters to Calsim modeling results to get an approximation without fully coding the refinements in the Sites Project Calsim model. Over the past year, the team has improved the ability of the Calsim model to refine and test a number of different scenarios in the model itself. Improved abilities in the Sites Project Calsim model include the following:

- Federal participation options have been expanded:
 - Reclamation as an exchange partner with Shasta Lake (which could also apply to Folsom Lake)
 - Reclamation as a financial participant with a storage account in Sites Reservoir (refinements made to previous assumptions)
 - No federal participation
- SWP facility coordination options have been expanded:

- Deliveries made in coordination with Oroville operations (refinements made to previous assumptions)
 - Deliveries through SWP conveyance facilities only
- South of Delta (SOD) Participant demand assumptions revised:
 - Model now explicitly tracks water deliveries to SOD Participants through the export facilities
- Diversion and environmental criteria updated:
 - Sutter Bypass weir spills (Ord Ferry, Moulton Weir, Colusa Weir, Tisdale Weir). The magnitude, duration and timing of inundation were refined and can be adjusted.
 - Fremont Weir Notch and Yolo Bypass. The magnitude, duration and timing of inundation were refined and can be adjusted.
 - Freeport bypass flow criteria options revised to allow for adjustments
 - Pulse flow protections were refined
 - Delta Outflow criteria was added
 - Red Bluff, Hamilton City, and Wilkins Slough bypass or scaled flows was refined to allow for adjustments
 - Diversion and release maintenance windows were revised
- Environmental water management flexibility:
 - Flows into Colusa Basin Drain conveyed to Cache Slough via the Knights Landing Ridge Cut (previous assumption)
 - Incremental Level 4 Refuge water supply (previous assumption)
 - Working with California Department of Fish and Wildlife to confirm and refine environmental water uses and ensure flexibility in the analysis
- Sites Project Facilities refinements to reflect Value Planning:
 - Reservoir capacity adjustments
 - Dunnigan Pipeline facilities were added

The fundamental principles of the modeling have not changed, particularly as it relates to water rights and overall diversion priorities. In general, the model assumes that Sites is a junior water rights holder and therefore can divert after all other water rights are met, including water rights, contractual obligations and Tribal trust responsibilities in the Trinity River system. In addition, diversions can only take place when environmental requirements are met and when "excess" conditions exist in the Delta. The model is being refined to remove the anomalies and correctly indicate there are no effects or impacts on the Trinity River from the Sites Project.

Initial CalSim results are being checked by the operations and fisheries team. Following the initial review, iterative model simulations will be run to assess aquatic resource and water quality effects and further refinements to diversion criteria. Full modeling results will be available for the December Reservoir Committee and Authority Board meetings.

Prior Action:

None.

Fiscal Impact/Funding Source:

None.

Staff Contact:

Ali Forsythe

Attachments:

None.

Federal and State Agency Aquatics Workshop #1 Agenda Revised



Sites Reservoir Project

WebEx

<https://meetings.webex.com/meet/ldr/i.php?MTID=m2b7a36e811f242a705e7aa8f971cd34b>

Date: October 26, 2020

Location:

Audio Call in: 1-408-418-9388, 146-951-7592

Time: 10:00 am – 12:00 pm

Purpose: Overview and discussion of Sites Reservoir Project modeling adjustments/diversion criteria.

Invitees:

Kristal Davis-Fadtke, CDFW	Felipe LaLuz, CDFW	Jim Lecky, ICF
Ken Kundargi, CDFW	Zachary Kearns, CDFW	Erin Heydinger, Sites Integration
Jonathan Williams, CDFW	Chris Fitzer, ESA	Steve Micko, Jacobs
Mike Hendrick, ICF	Jason Hassrick, ICF	Rob Leaf, Jacobs
Jerry Brown, Sites Authority	Noble Hendrix, QEDA	Monique Briard, ICF
Ryan Davis, Reclamation	Marin Greenwood, ICF	Rick Wilder, ICF
Melissa Dekar, Reclamation	Evan Sawyer, NMFS	Ali Forsythe, Sites Authority
Dan Cordova, Reclamation	John Spranza, Sites Integration	Cathy Marcinkevage, NMFS
Russell Perry, USGS	David Vogel, Natural Resource Scientists, Inc	Steven Schoenberg, USFWS
Doug Jackson, QEDA		
Cyril Michel, NMFS		

Agenda:

Discussion Topic	Topic Leader	Est Time
1. Overview and Introductions	John Spranza	5 min
2. Objective of the workshop (Jim L) <ul style="list-style-type: none"> a. Review purpose of meeting (Jim L, Rob L) b. Analytical Tools (Rick W, Marin G) c. ICF's initial review of modeling output (Rick W) d. OBAN Model Update (Noble H, Doug J) 	Jim Lecky	15 min
3. Science Review <ul style="list-style-type: none"> a. Russell Perry (Reverse flows) b. Cyril Michel (Wilkins Slough/Pulse Flows) 	Jason Hassrick	45 min
4. Discussion of model adjustments for new iteration	All	45 min
5. Action Items and Next Steps – Workshop #2	Mike Hendrick	10 min

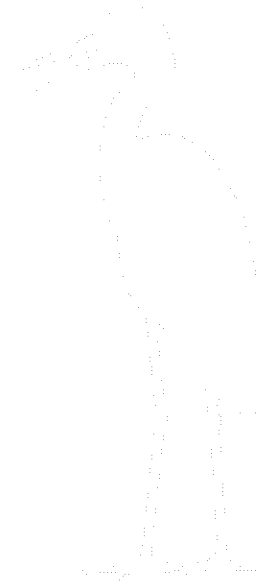
SITES PROJECT AND MODELING UPDATE AND DISCUSSION- AQUATICS FOCUSED

OCTOBER 26, 2020



Objectives of Meeting

1. Provide general update on:
 - Revised project description
 - 2020 model update
2. Discuss next steps and timing



Revised Project Description

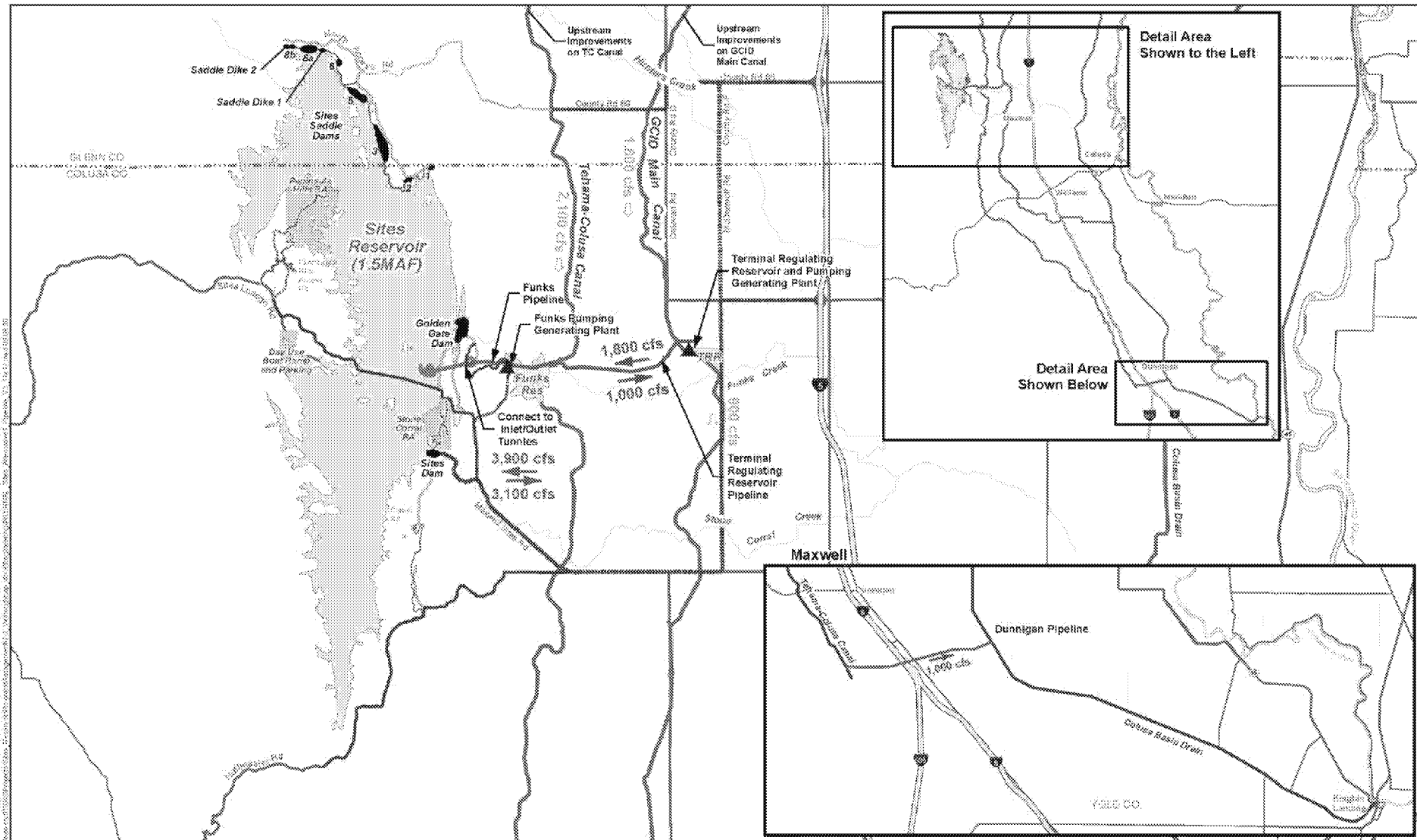


Major Revisions to Project

- Reservoir size reduced from 1.8 to 1.5 MAF
- No Delevan diversion, pipeline or outfall
 - Utilize existing at Red Bluff and Hamilton City pumping plants
 - Releases to T-C Canal to the CBD
 - New 1,000 cfs near Dunnigan
 - Alternative 2: a new 1,000 CFS outfall near Tyndall Landing
- Releases reduced from 1,500 to 1,000 cfs



Revised Project: Alternative 1

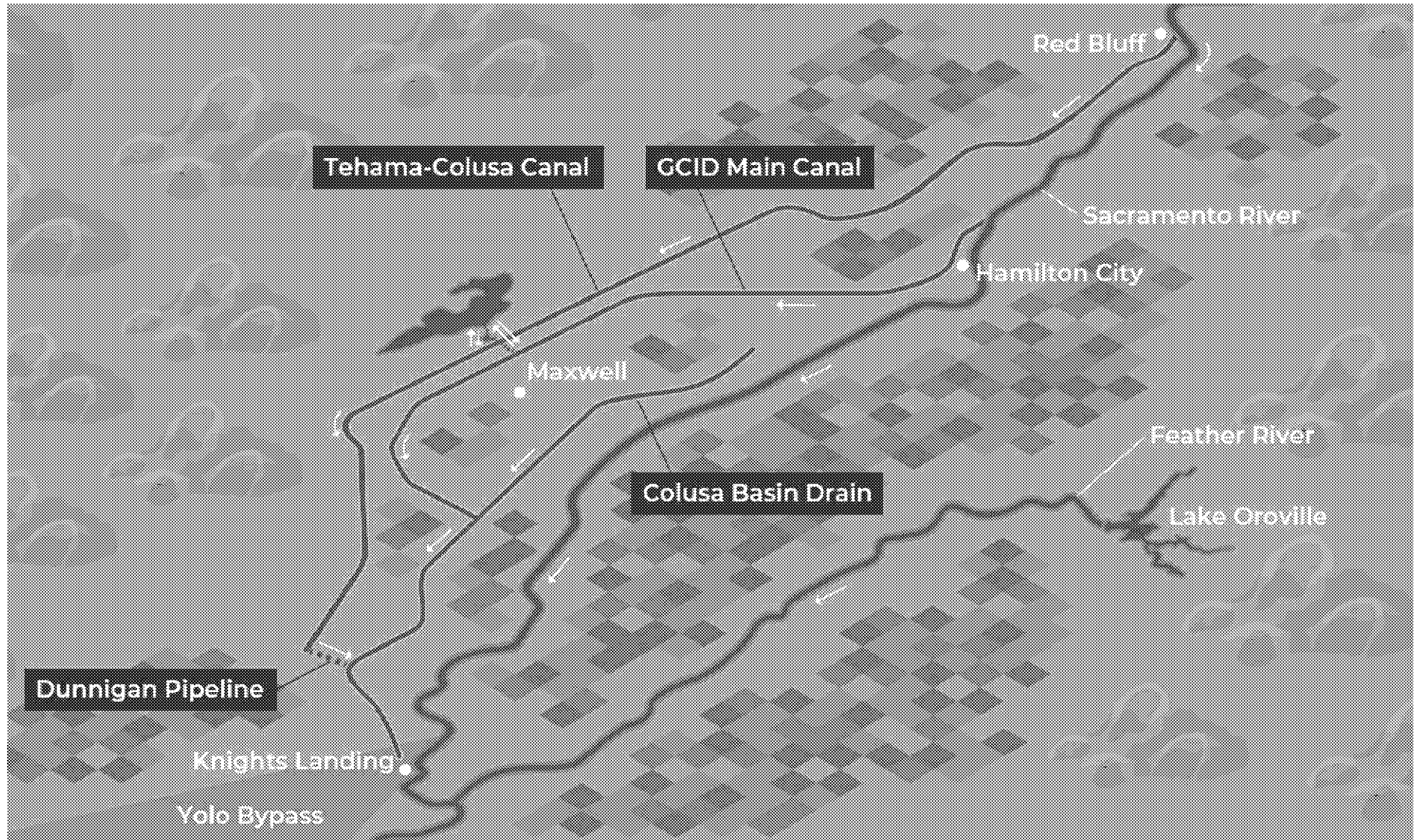


- Legend**
- Canal
 - Pipeline
 - Maintenance Access Road
 - Construction/Maintenance Route
 - New/Realigned Permanent Road
 - Construction Route (Existing Road)
 - Existing Roads
 - Waterways



ALTERNATIVE 1

Revised Project: Alternative 1

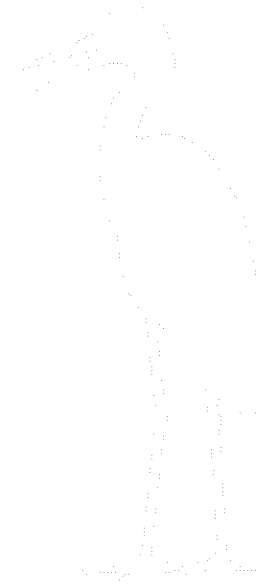


Sites Project Model Updates



Agenda

- Updates to Sites Project sizing and facilities
- Updates to CalSim II model
- Preliminary Effects Analysis (PEA)
- Assumptions
- Results



Sites Facilities

- 1.5 MAF Reservoir
- 2 intakes
- Dunnigan Pipeline
 - Outlet: Connects Tehama-Colusa Canal to Colusa Basin Drain
 - Capacity: 1,000 cfs



Updates to CalSim II model

- Baseline model
 - 2019 BiOps at current climate
 - Updates, incorporating 2020 SWP ITP action are forthcoming
- Hydrology improvements
 - Bypass and weir flow modeling improved
- Federal participation
 - Coordination with Reclamation on-going
 - Evaluating options with Reclamation as a funding partner and/or Reclamation as an exchange partner at Shasta
- State Water Project participation
 - Coordination with DWR on-going
 - Assessing integration of project with Oroville



Preliminary Effects Analysis (PEA)

- Goal: Identify and resolve areas of concern for aquatic resources
- Approach: Assess effects of Sites with assumptions (below) that would identify potential impacts to aquatic resources
 - Larger reservoir size: 1.5 MAF
 - Federal investment: 91 TAF of CVP storage
 - State investment: 244 TAF of Prop 1
 - Modified WSIP diversion criteria (bypass criteria for Red Bluff, Hamilton City, Wilkins Slough; protection of pulse flows)
- Next steps: Review model results and refine operating criteria



Sites Project Model Results



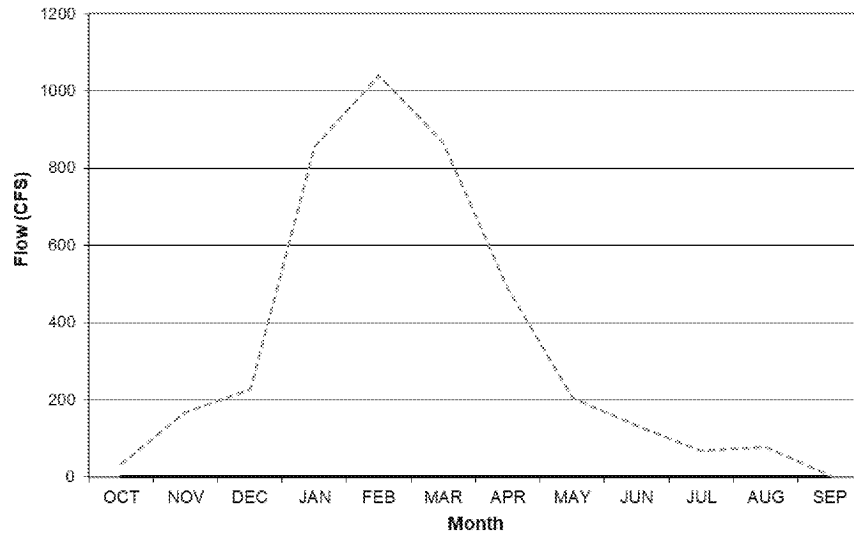
Results Summary

- Sites Diversions
- Sites Releases
- Sacramento River at Bend Bridge
- Sacramento River at Wilkins Slough
- Sacramento River downstream of Colusa Basin Drain
- Feather River at Mouth
- American River at H Street
- Sacramento River at Freeport
- Delta Outflow

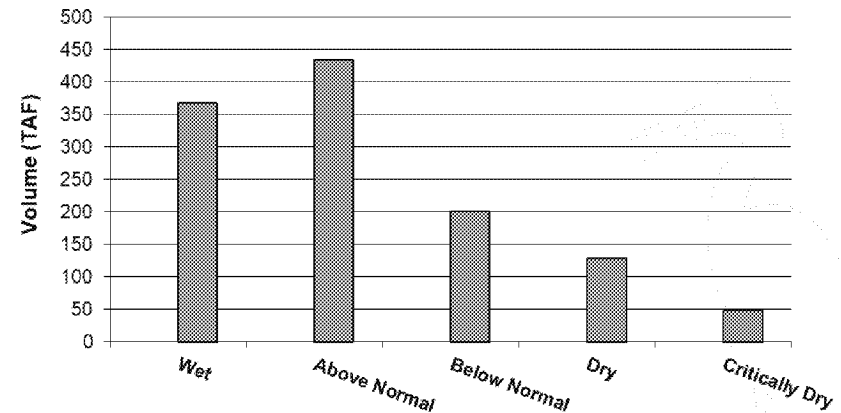


Sites Diversions

Total Sites Diversion to Fill (PRELIMINARY) Averages



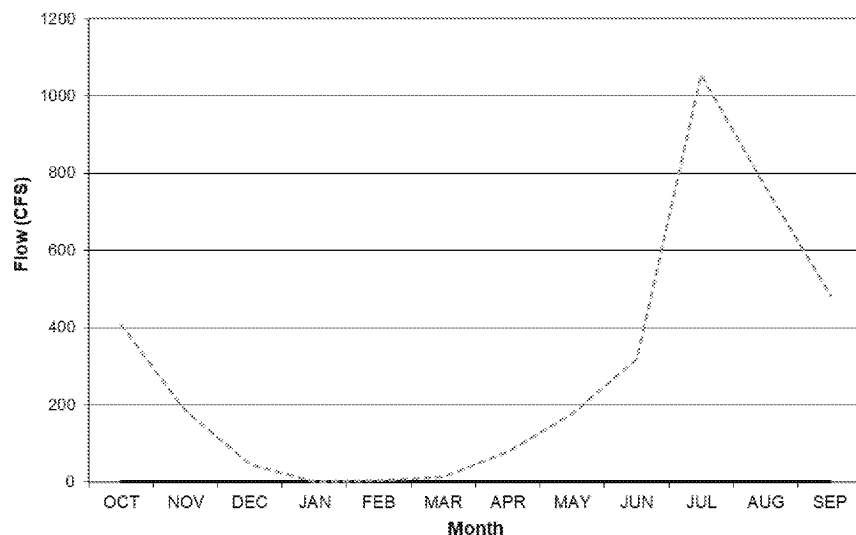
October-September Total Sites Diversion to Fill (PRELIMINARY) Water-year Type Averages



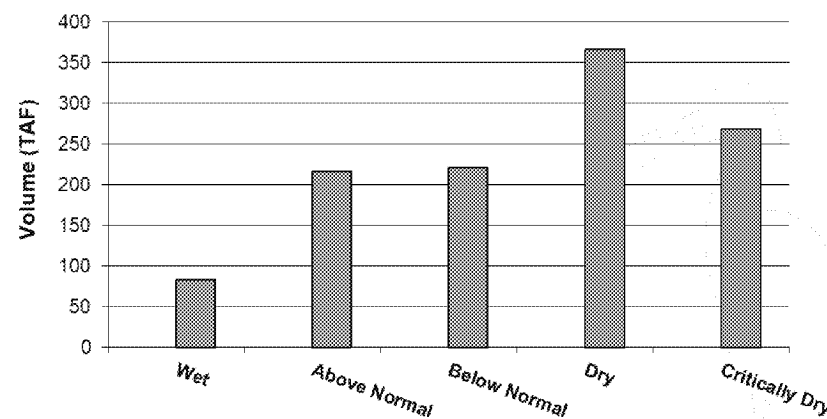
Output Parameter	Long-term Average (TAF)	Dry and Critical Average (TAF)
Diversions	244	97

Sites Releases

Total Sites Release (PRELIMINARY) Averages



October-September Total Sites Release (PRELIMINARY) Water-year Type Averages



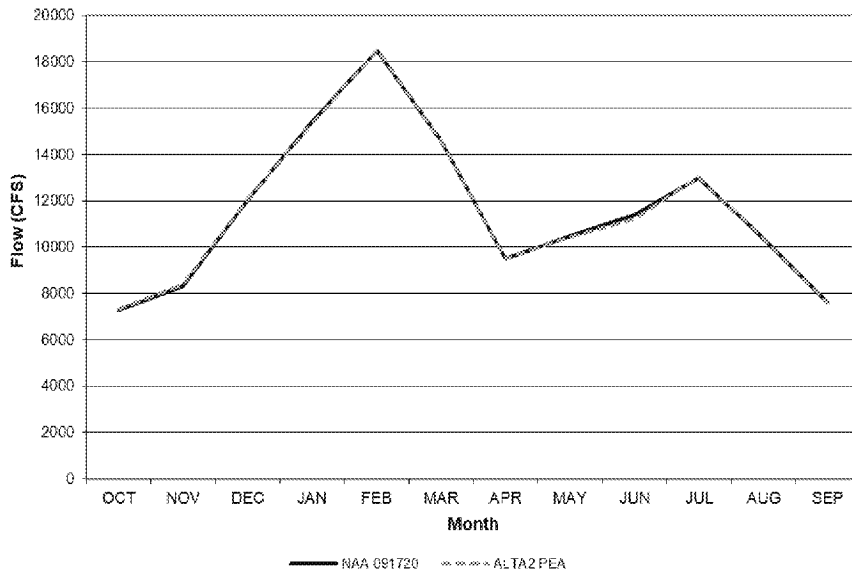
Output Parameter	Long-term Average (TAF)	Dry and Critical Average (TAF) ¹
Releases	216	337

¹Dry and Critically Dry releases are preliminary and subject to increase

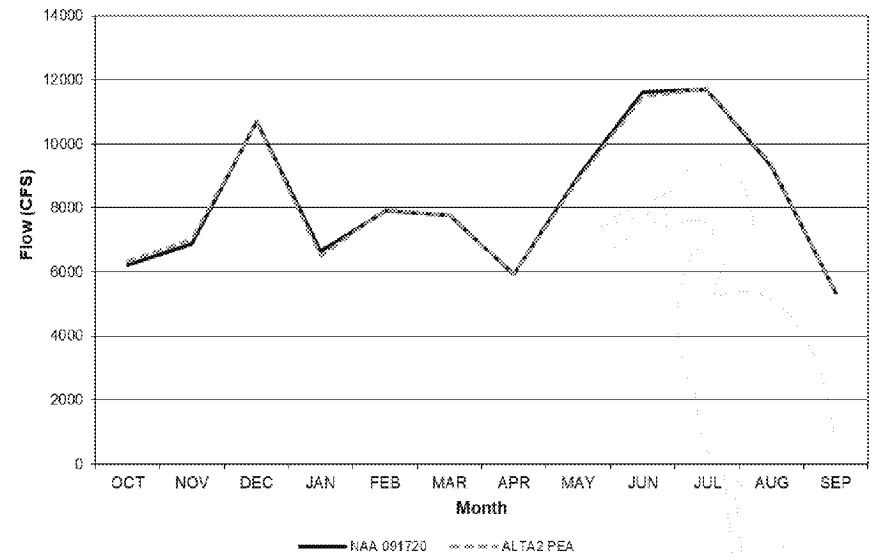


Sacramento River at Bend Bridge

Sacramento River Flow at Bend Bridge (PRELIMINARY) Averages

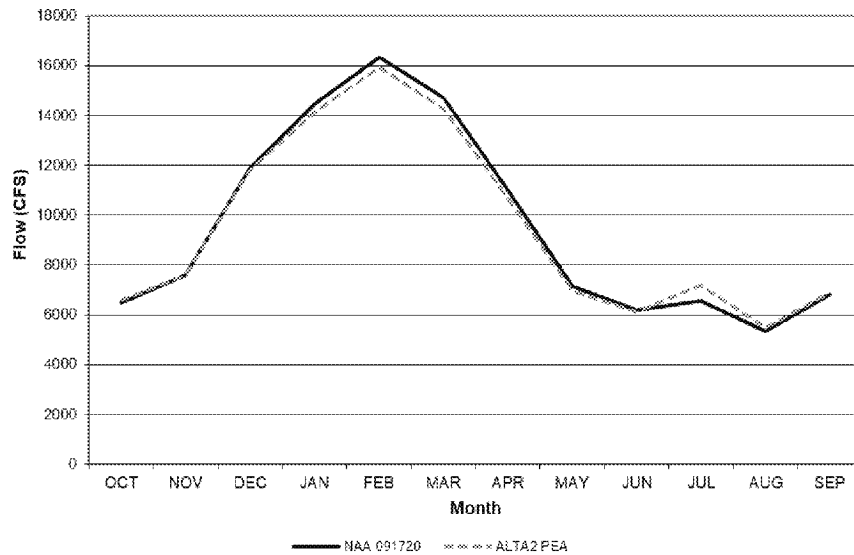


Sacramento River Flow at Bend Bridge (PRELIMINARY) Dry and Critically Dry Years (40-30-30)

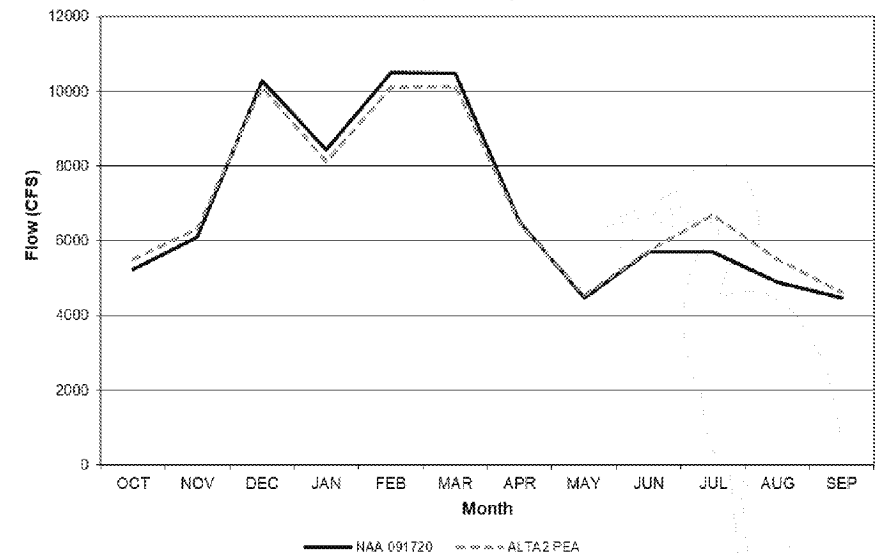


Sacramento River at Wilkins Slough

Sac R near Wilkins Slough (flow) (PRELIMINARY) Averages

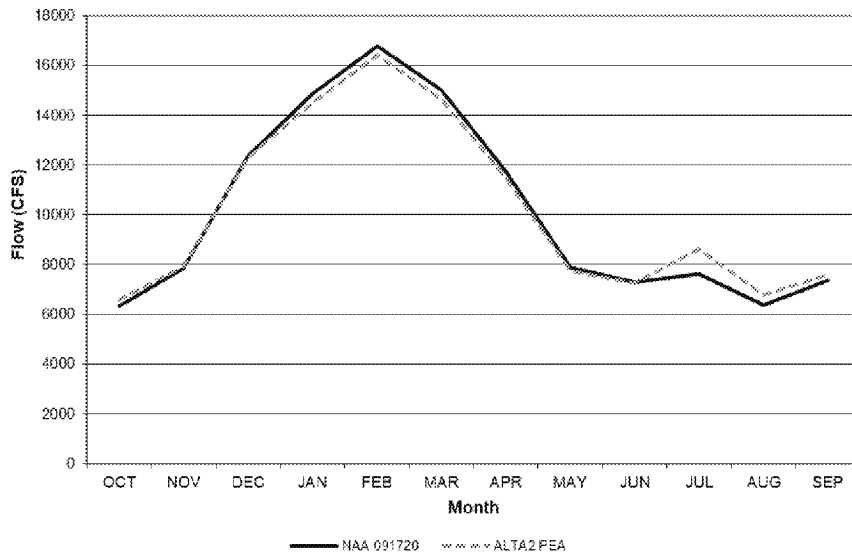


Sac R near Wilkins Slough (flow) (PRELIMINARY) Dry and Critically Dry Years (40-30-30)

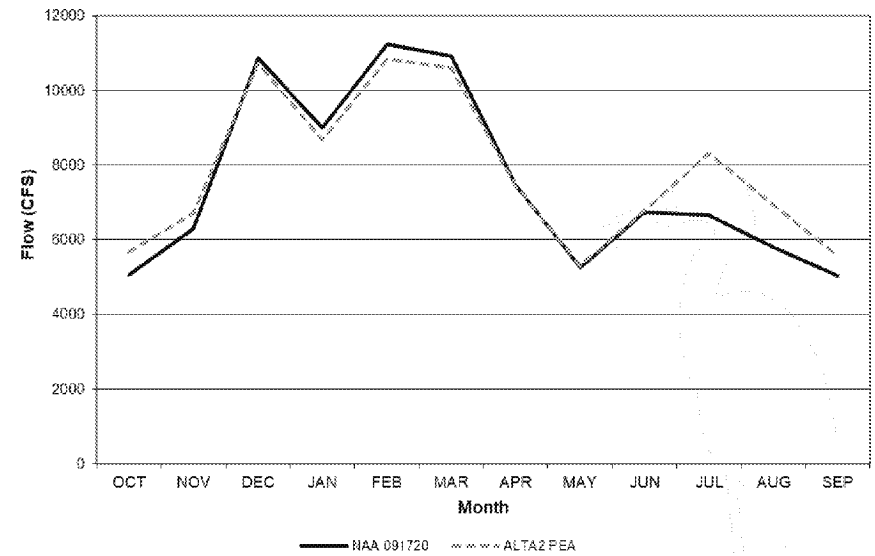


Sacramento River downstream of Colusa Basin Drain

Sac R ds Colusa Basin Drain (PRELIMINARY) Averages

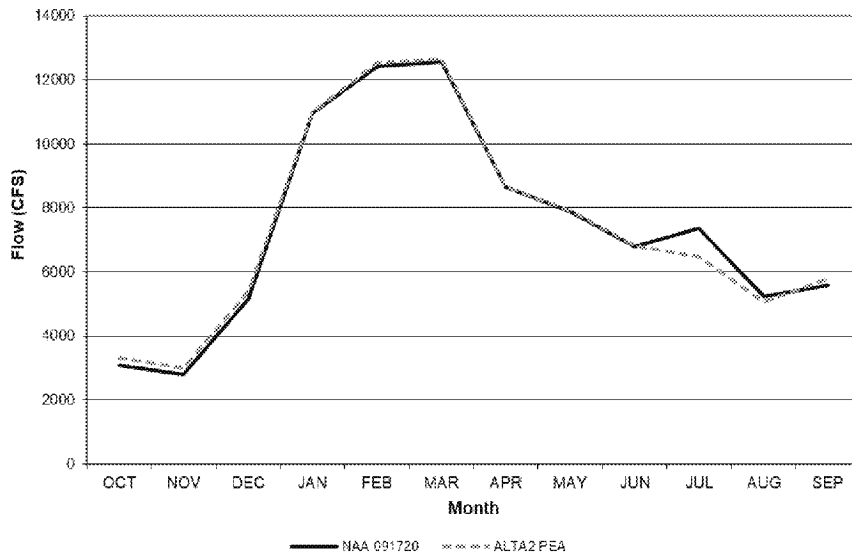


Sac R ds Colusa Basin Drain (PRELIMINARY) Dry and Critically Dry Years (40-30-30)

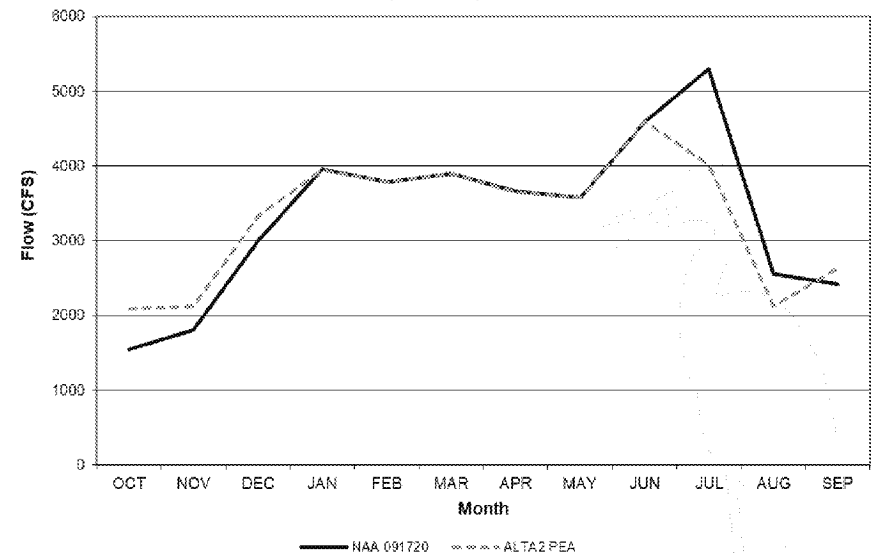


Feather River at Mouth

Feather River Flow at mouth (PRELIMINARY) Averages

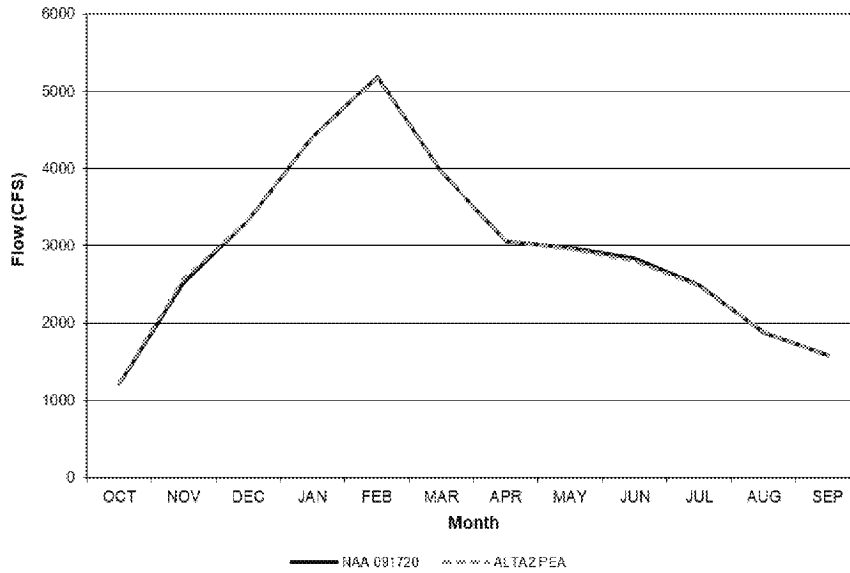


Feather River Flow at mouth (PRELIMINARY) Dry and Critically Dry Years (40-30-30)

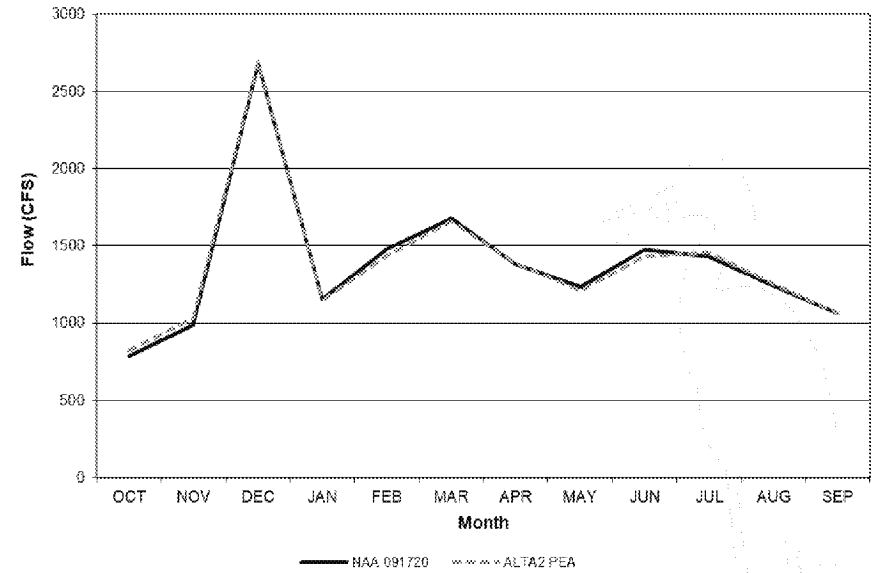


American River at H Street

American River Flow at H Street (PRELIMINARY) Averages

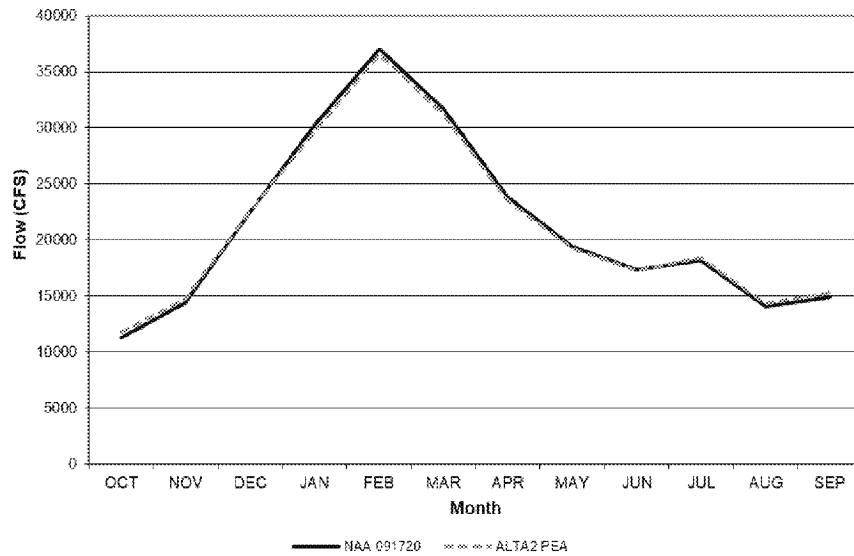


American River Flow at H Street (PRELIMINARY) Dry and Critically Dry Years (40-30-30)

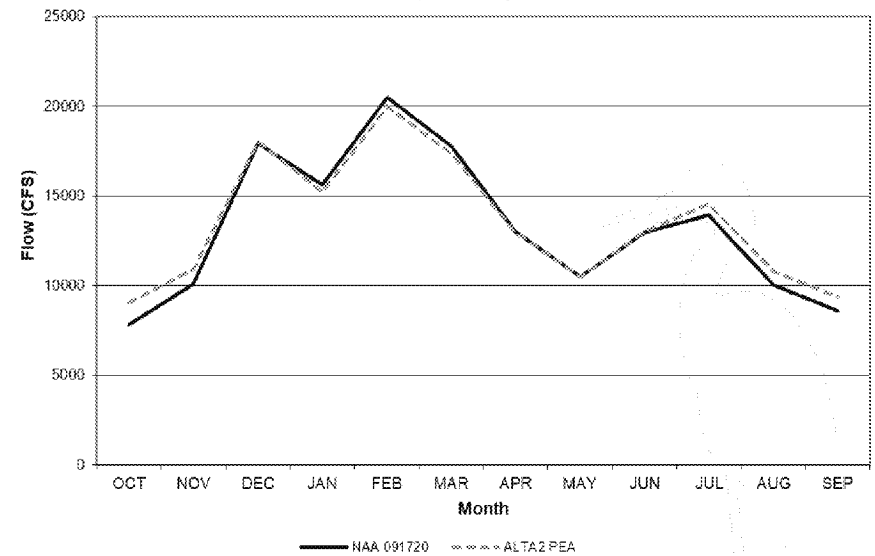


Sacramento River at Freeport

Sacramento River Flow at Freeport (PRELIMINARY) Averages

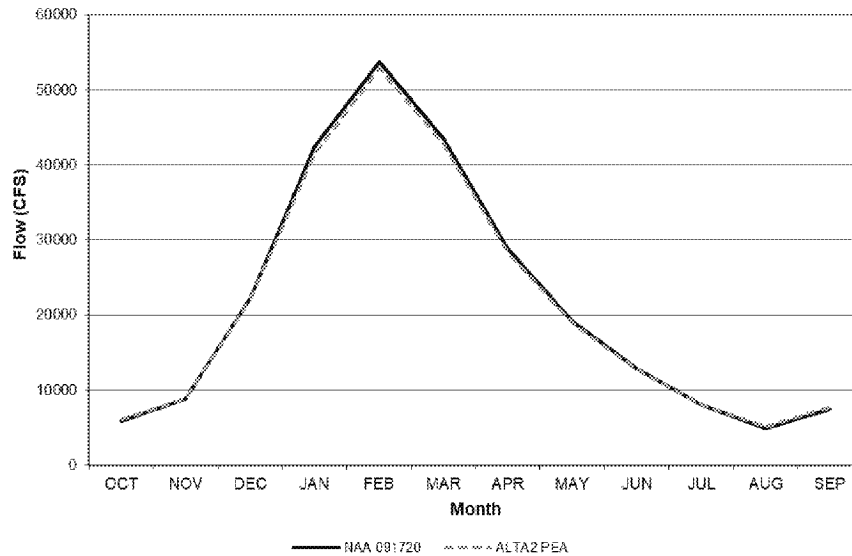


Sacramento River Flow at Freeport (PRELIMINARY) Dry and Critically Dry Years (40-30-30)

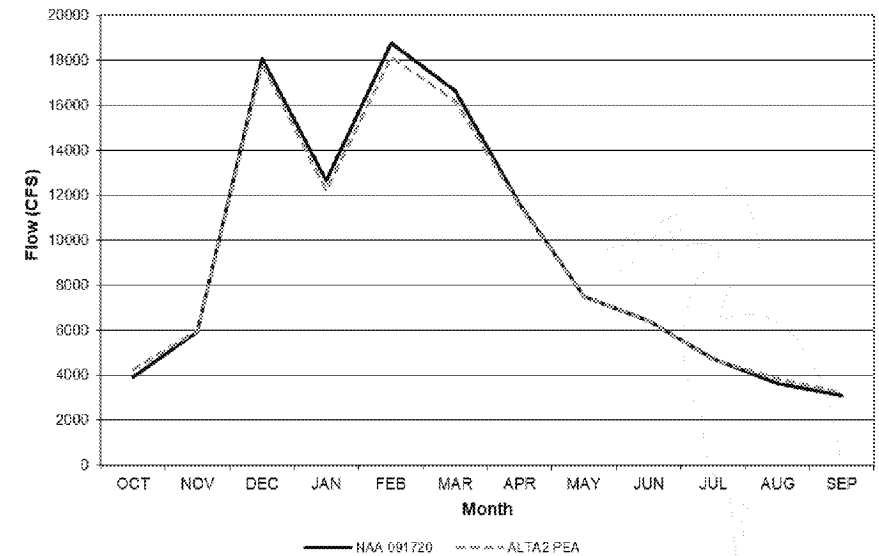


Delta Outflow

Delta Outflow (Total) (PRELIMINARY) Averages



Delta Outflow (Total) (PRELIMINARY) Dry and Critically Dry Years (40-30-30)



Questions?



END OF UPDATE MEETING



SITES PROJECT JOINT AQUATICS WORKSHOP

OCTOBER 26, 2020



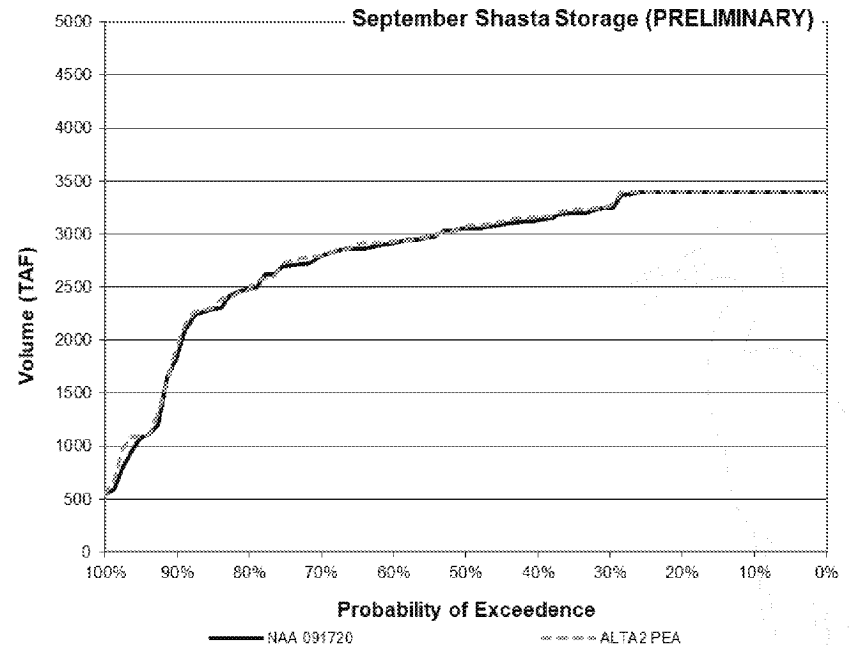
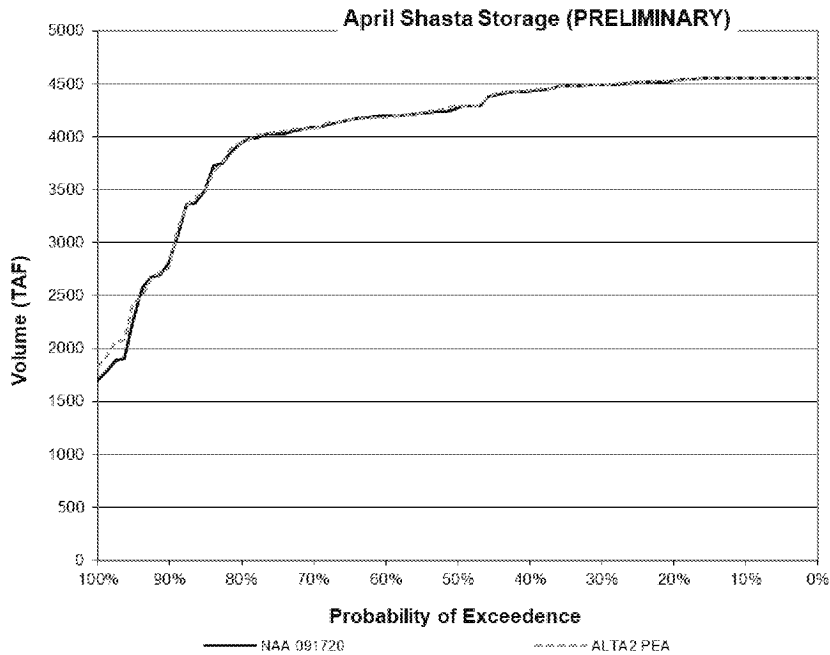
Agenda

1. Overview and Introductions
2. Objective of the workshop (Jim L)
 - a. Review purpose of meeting (Jim L, Rob L)
 - b. Analytical Tools (Rick W, Marin G)
 - c. ICF's initial review of modeling output (Rick W)
 - d. OBAN Model Update (Noble H, Doug J)
3. Science Review
 - a. Russell Perry (Reverse flows)
 - b. Cyril Michel (Wilkins Slough/Pulse Flows)
4. Discussion of model adjustments for new iteration
5. Action Items and Next Steps – Workshop #2

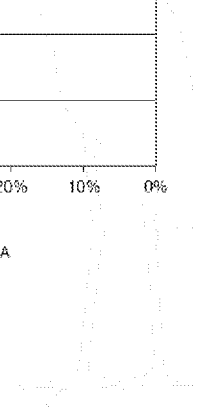
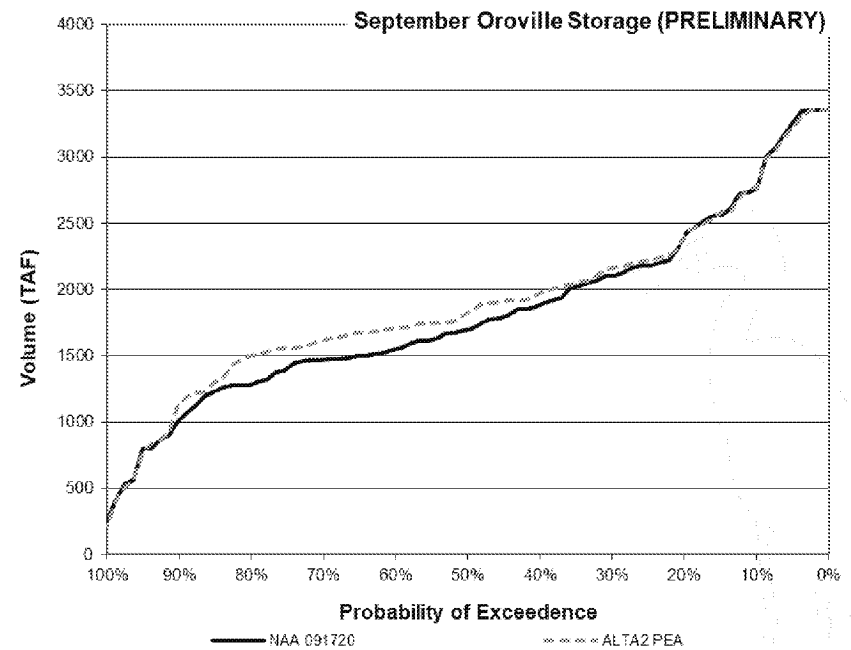
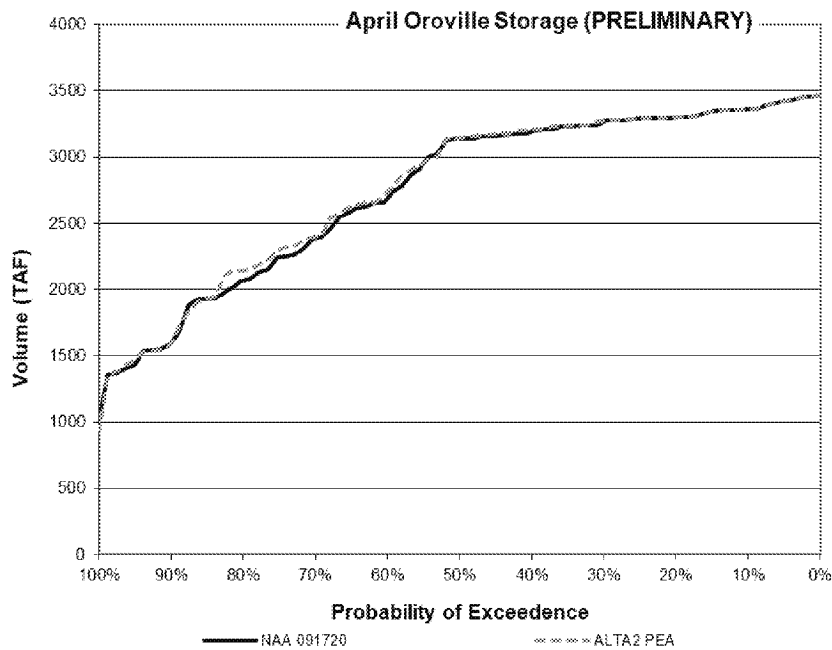
CalSim Results

Preliminary Effects Analysis

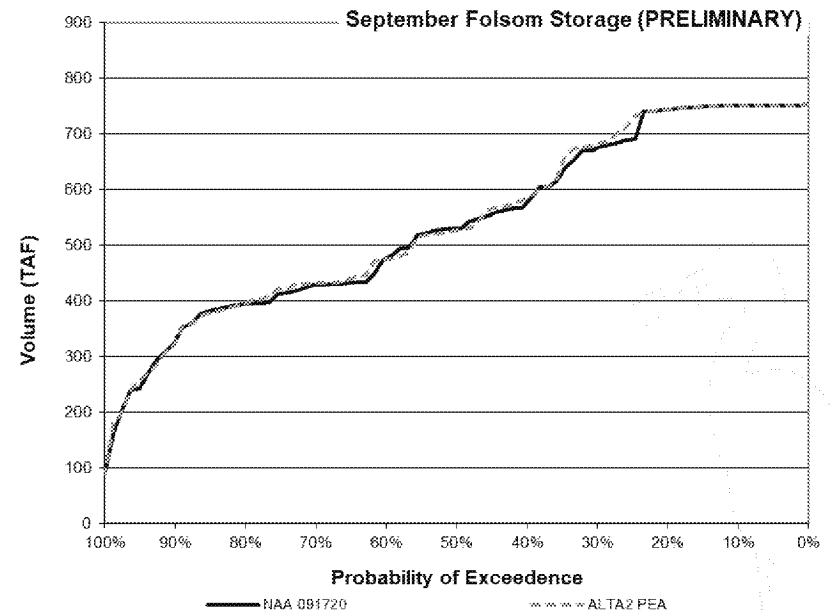
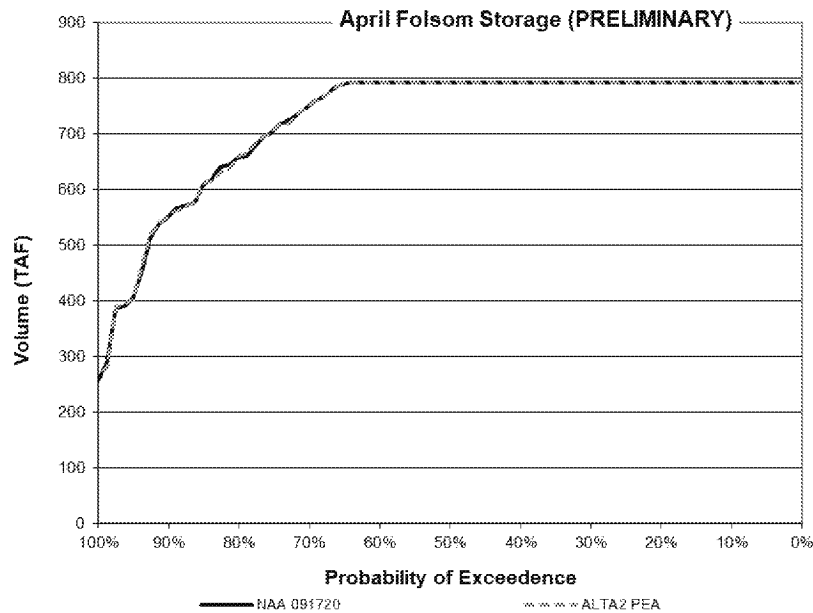
Shasta Lake storage



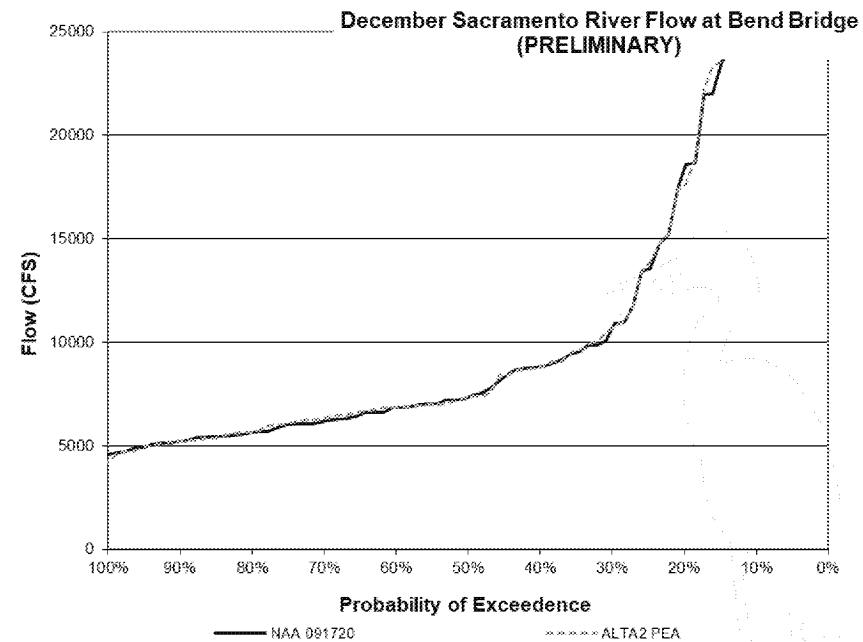
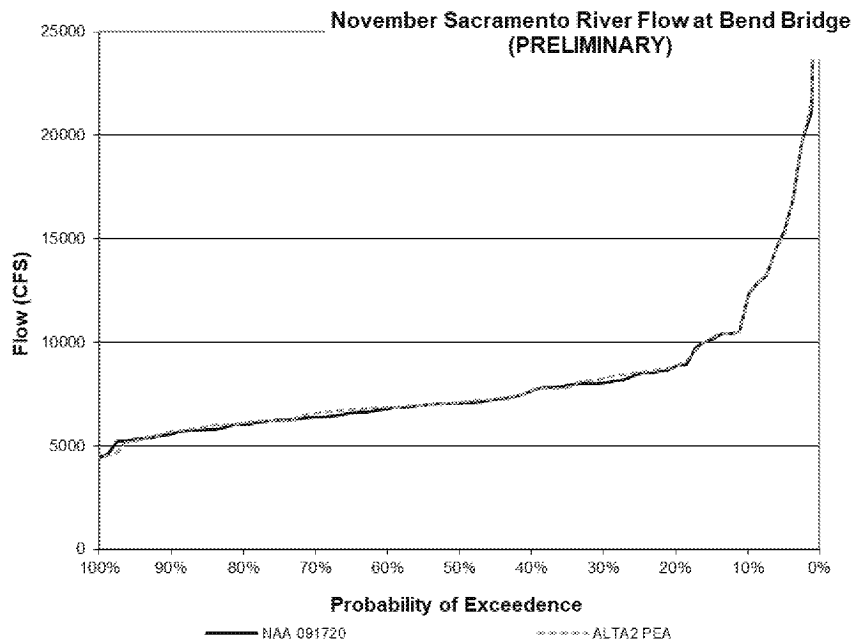
Lake Oroville storage



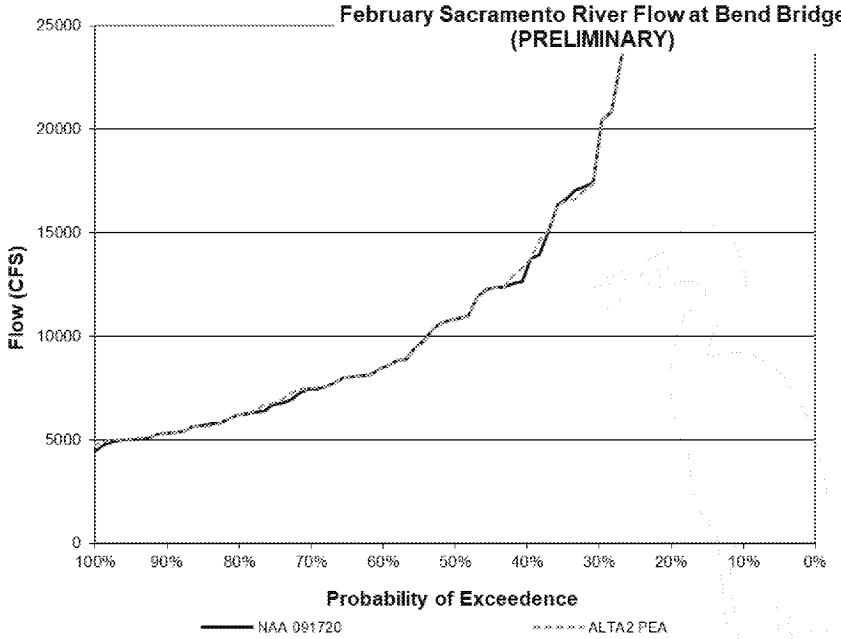
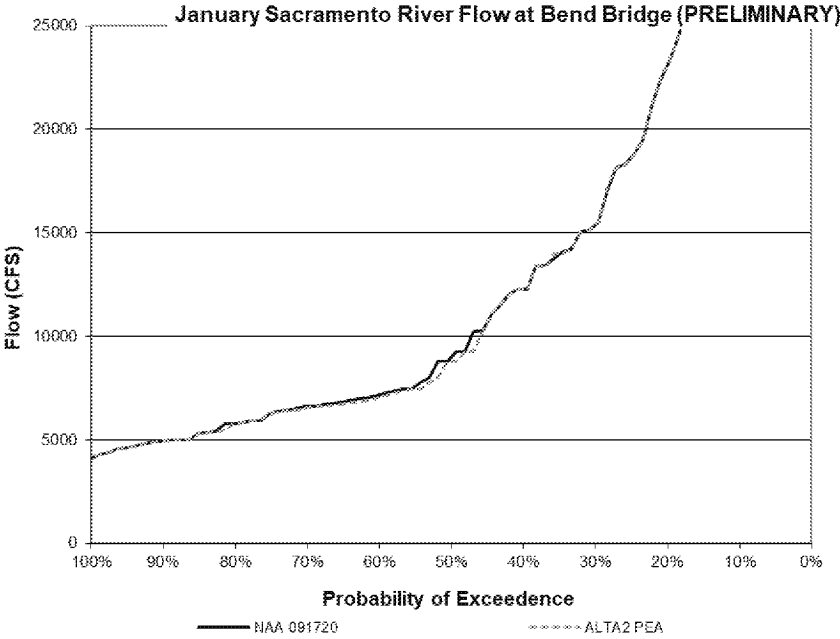
Folsom Lake storage



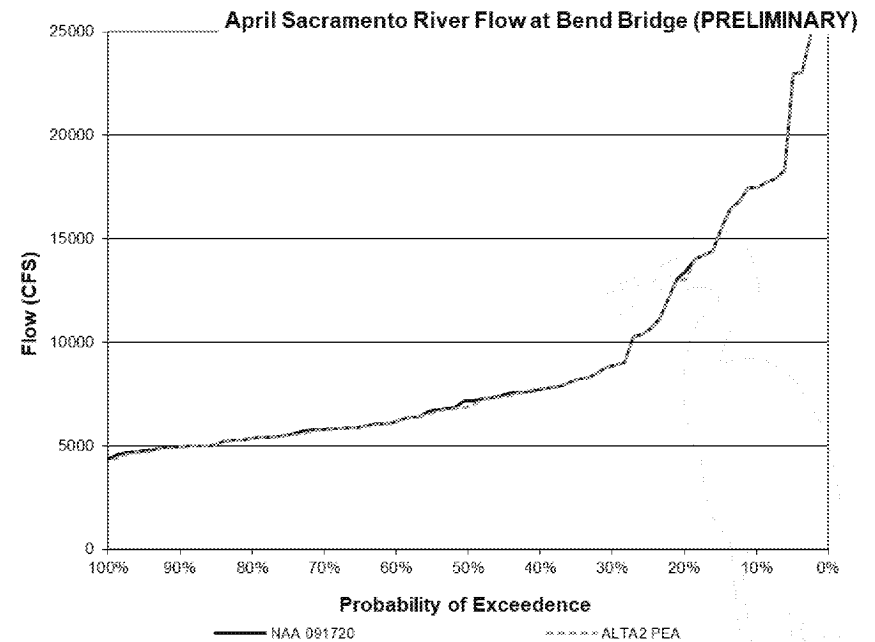
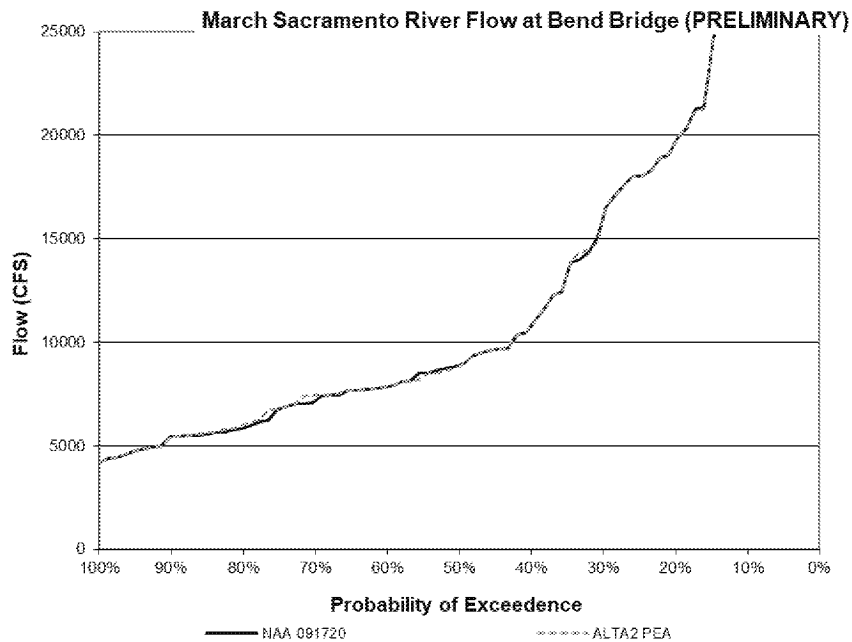
Bend Bridge flow



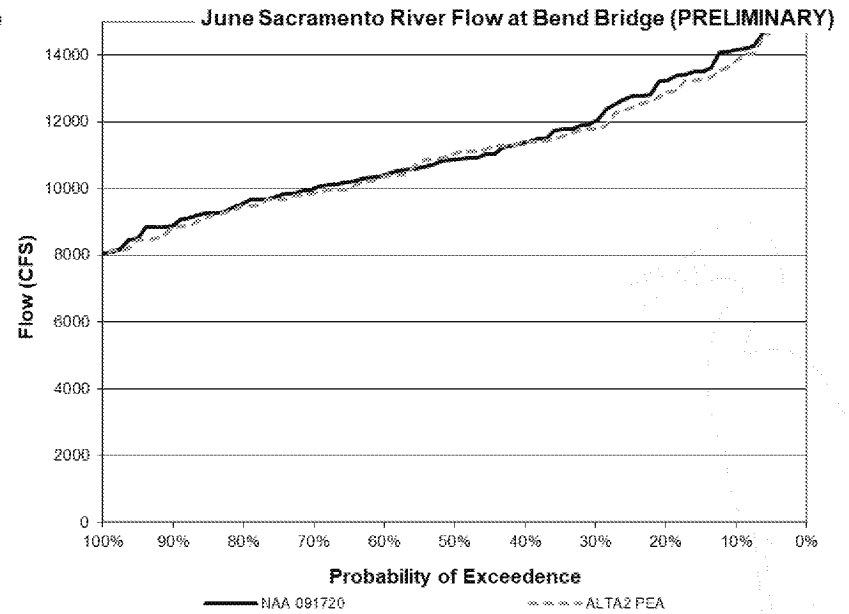
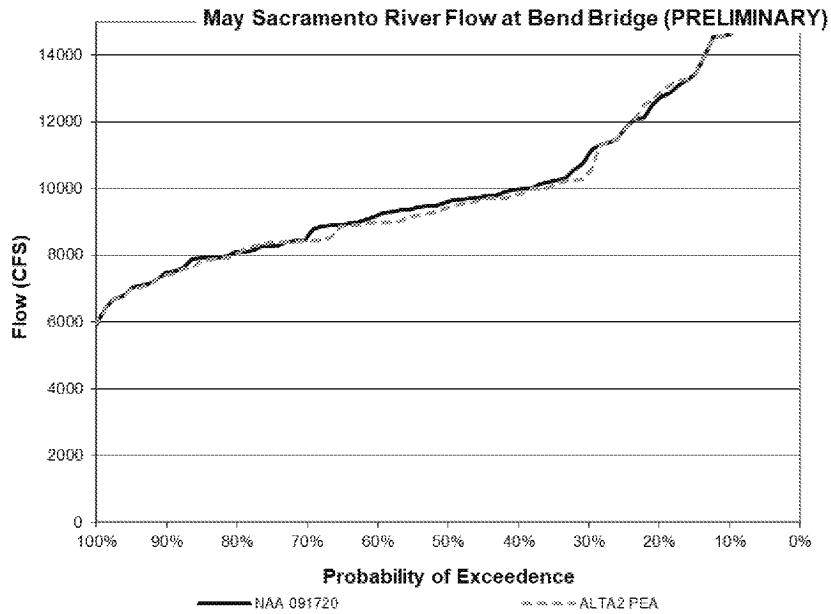
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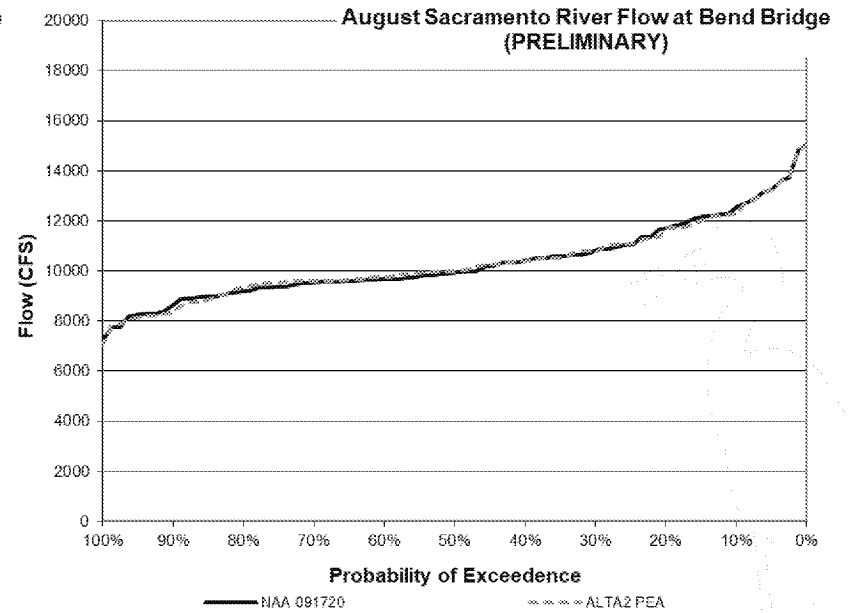
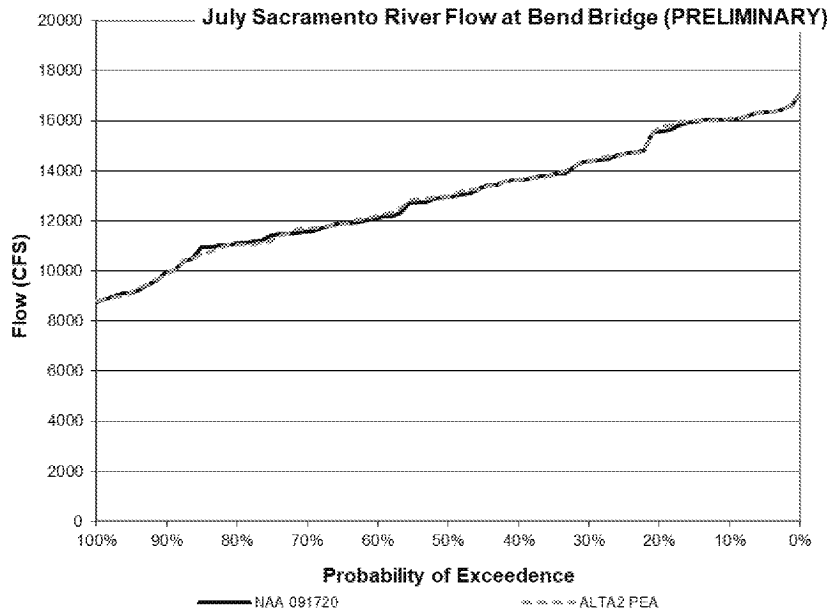
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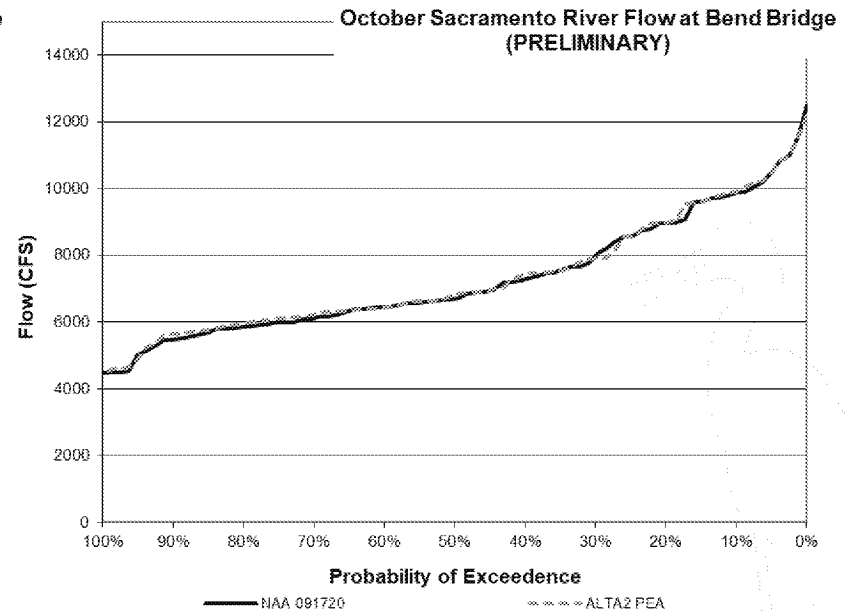
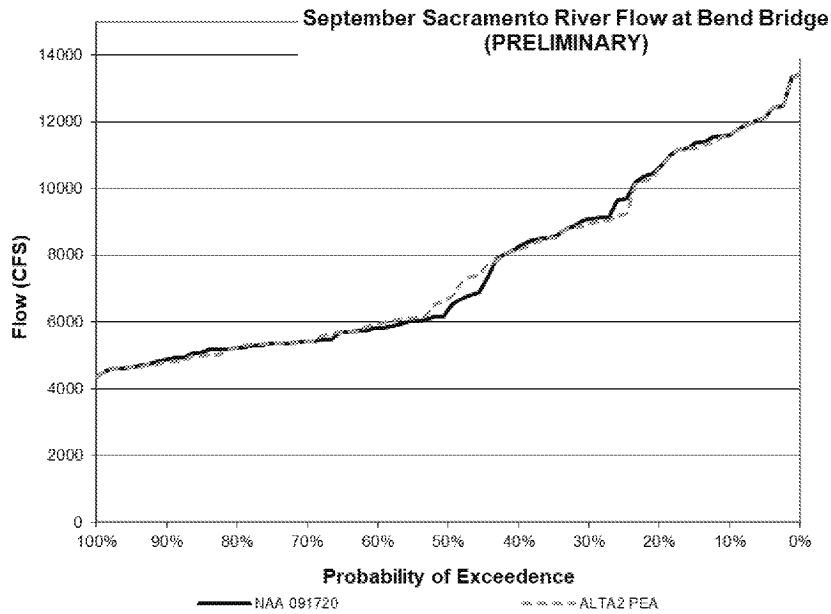
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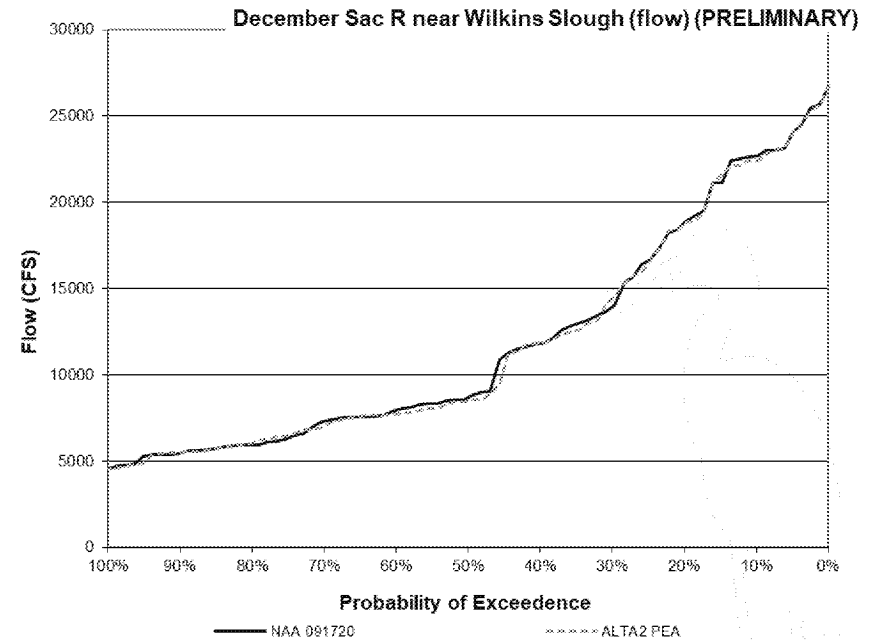
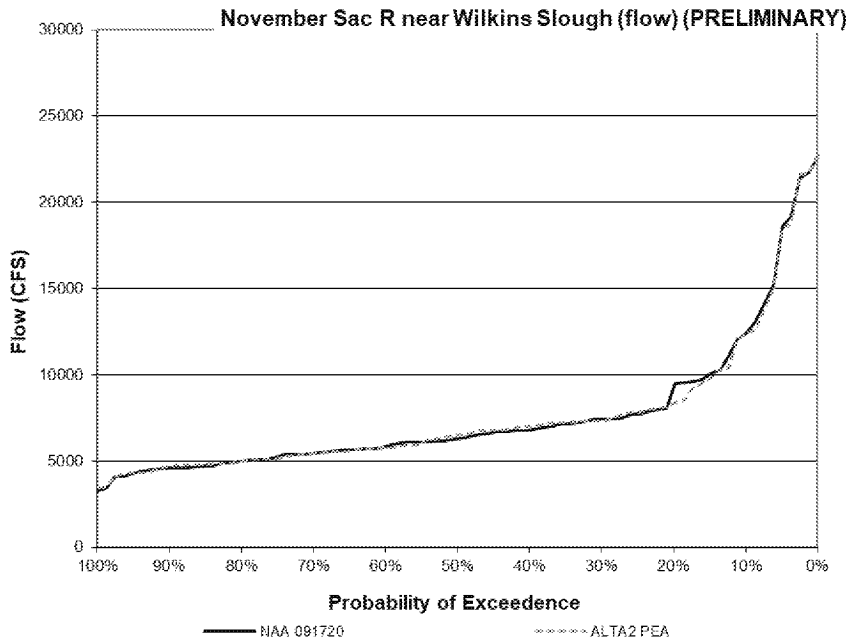
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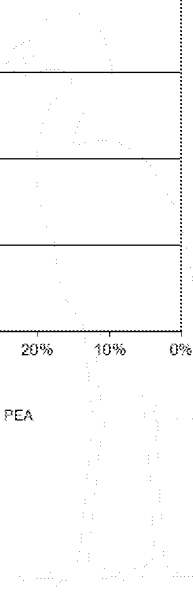
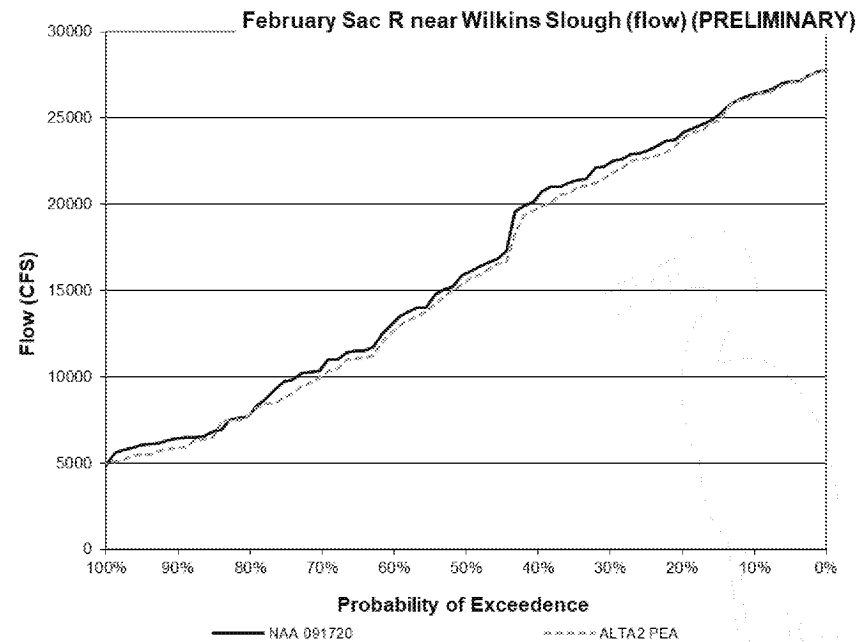
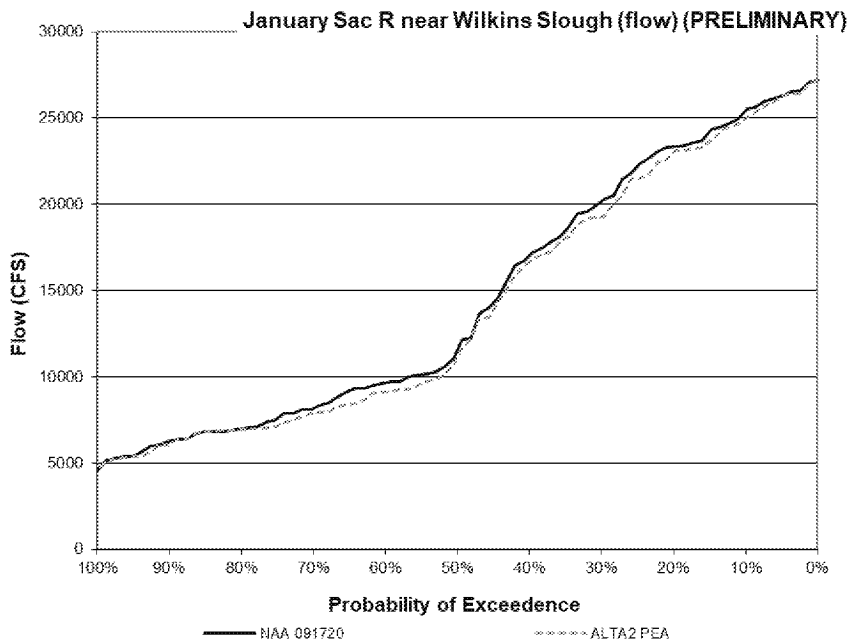
Bend Bridge flow



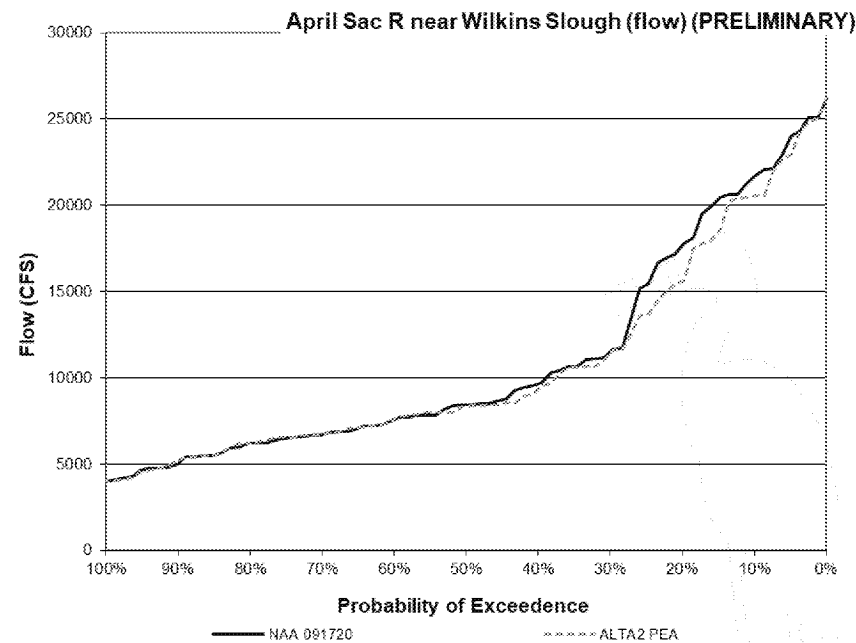
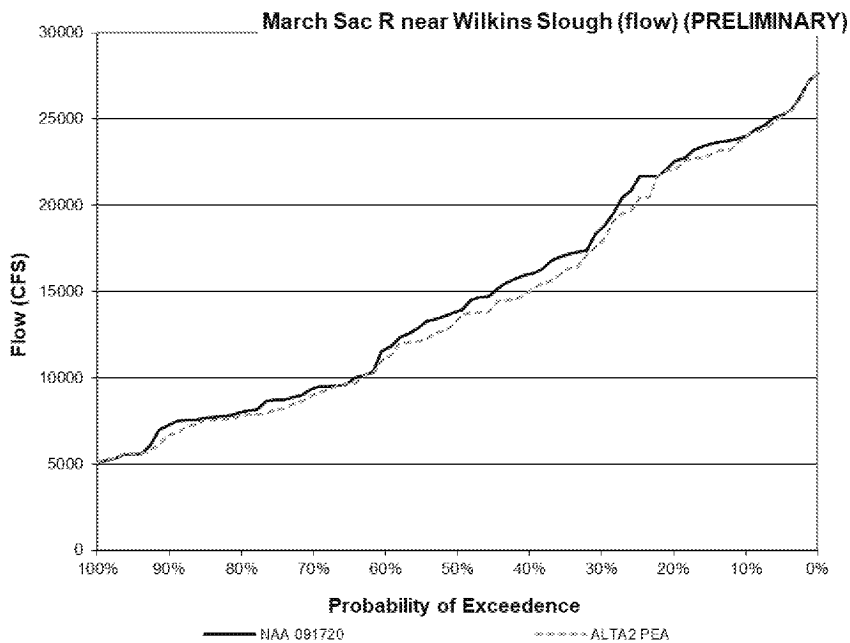
Wilkins Slough flow



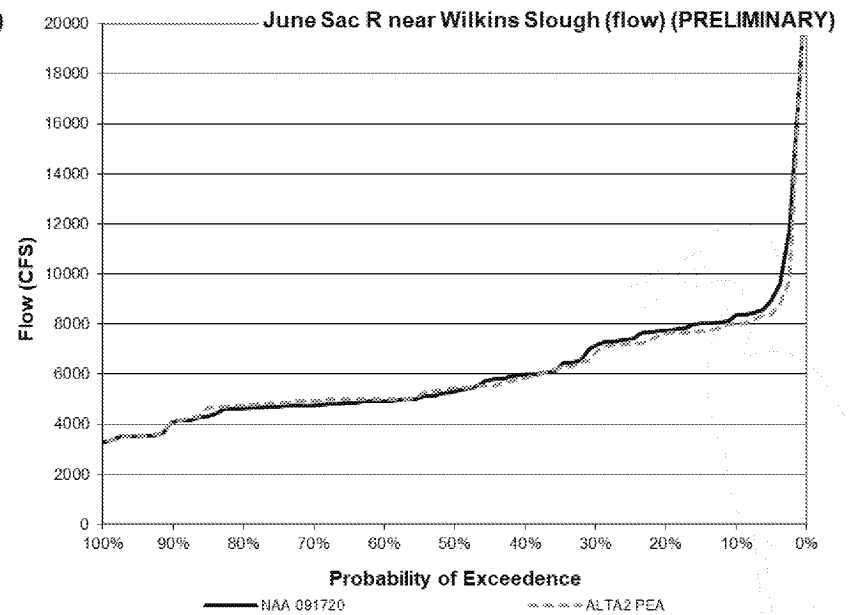
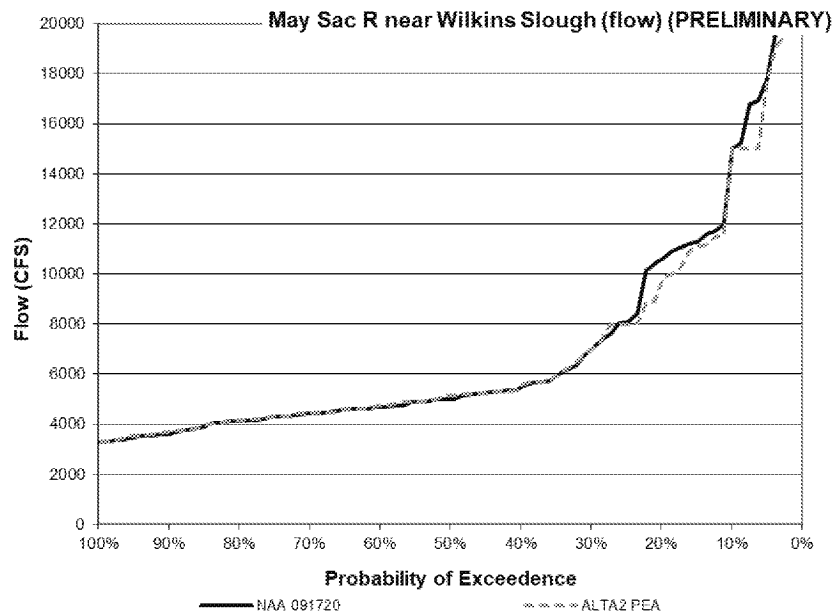
Wilkins Slough flow



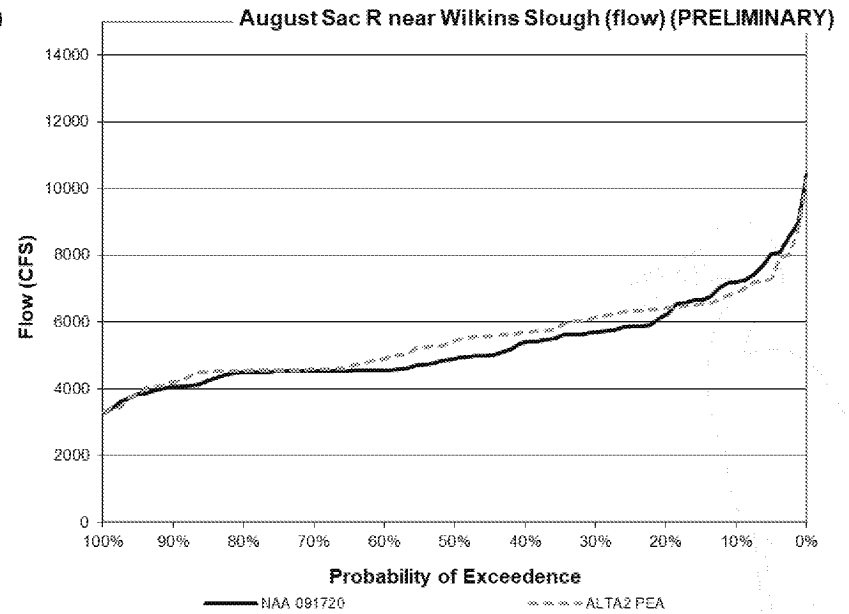
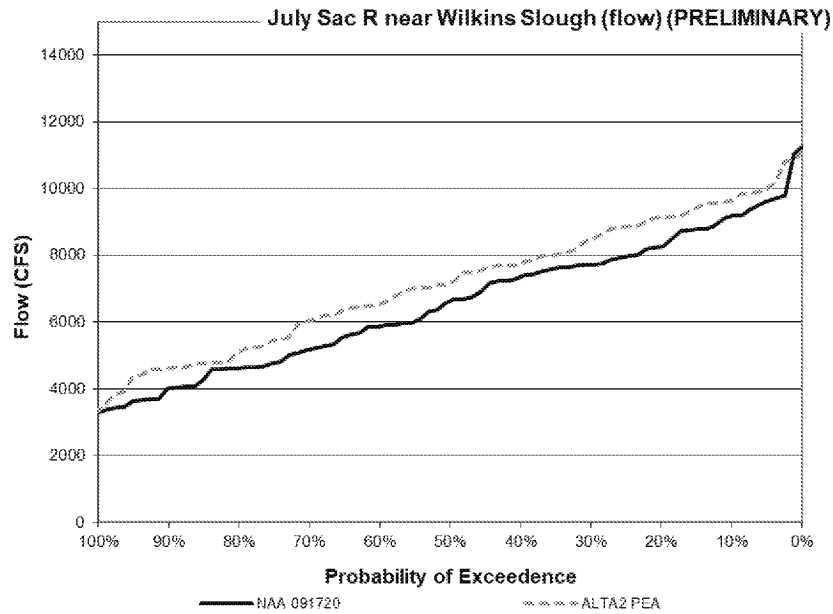
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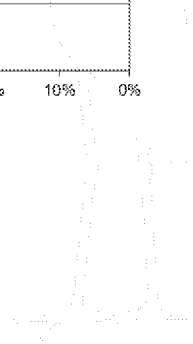
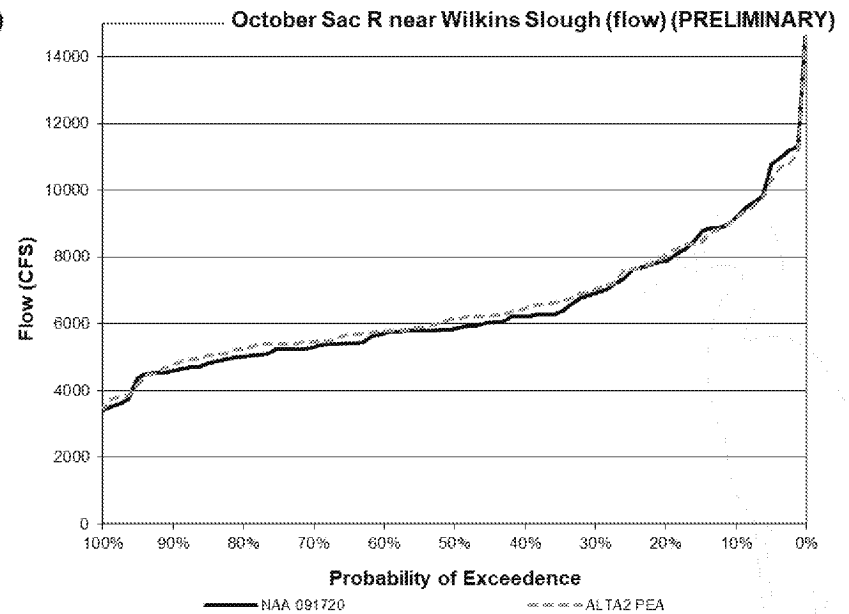
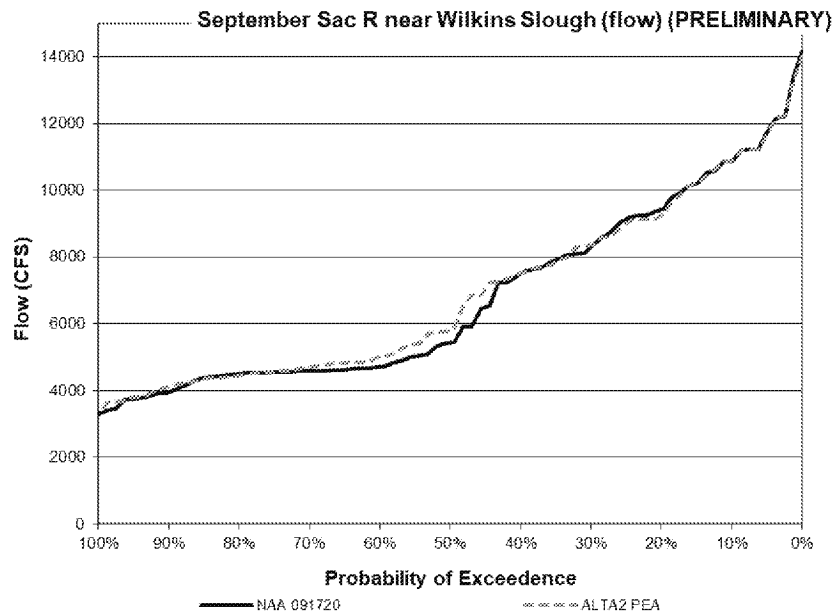
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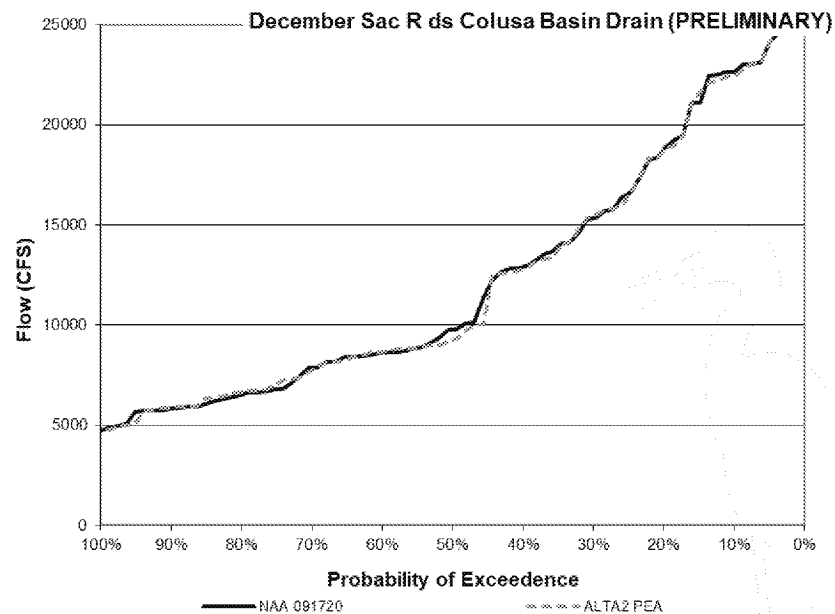
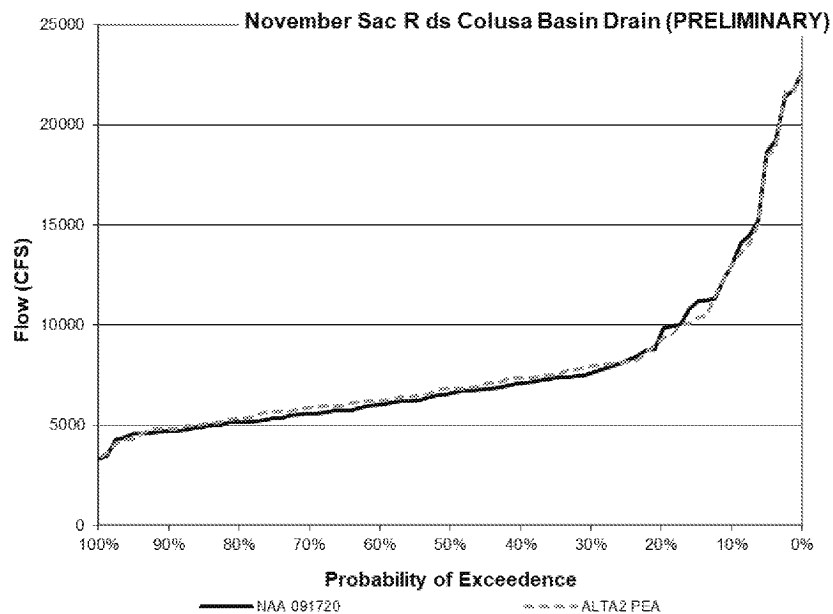
Wilkins Slough flow



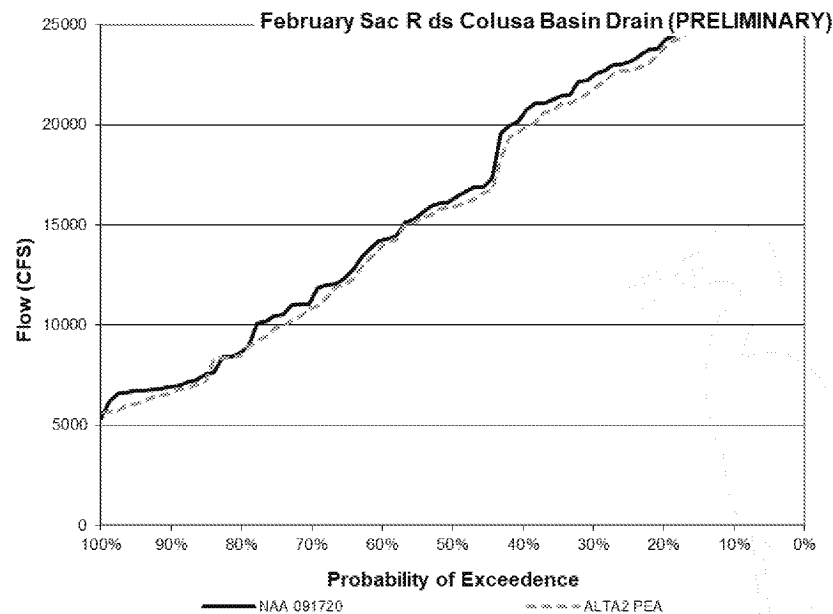
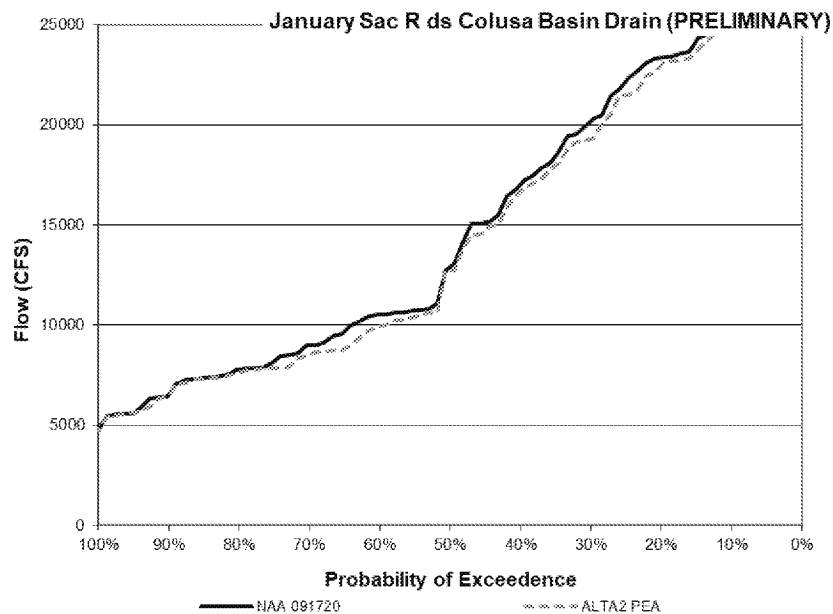
Wilkins Slough flow



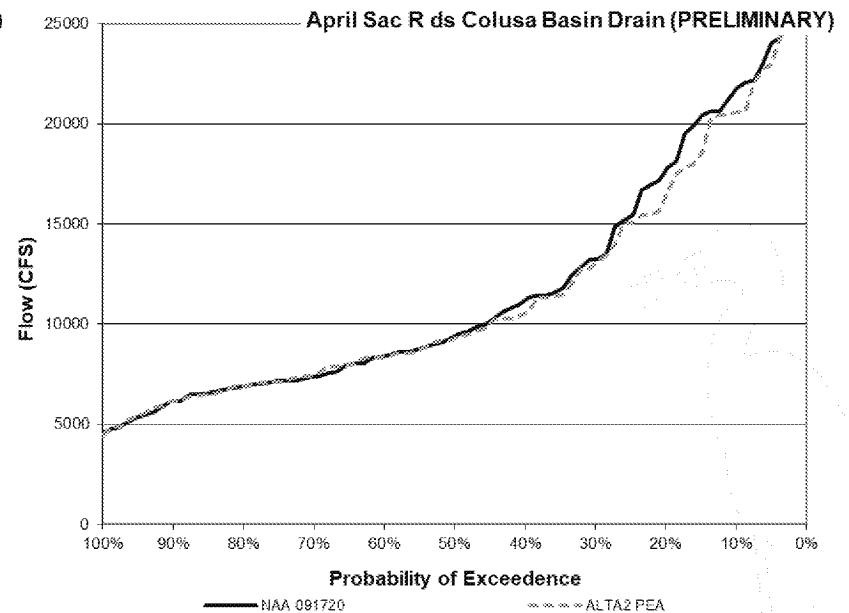
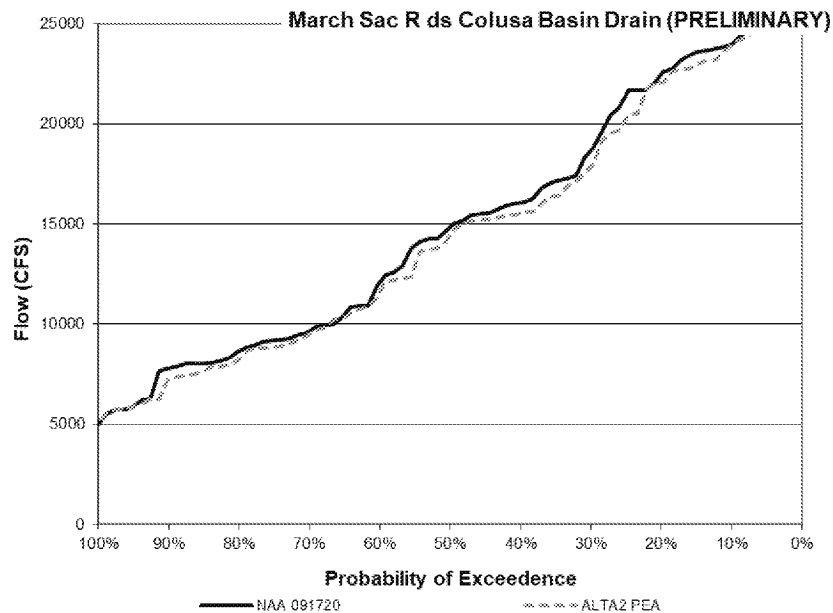
Sacramento River downstream of Colusa Basin Drain



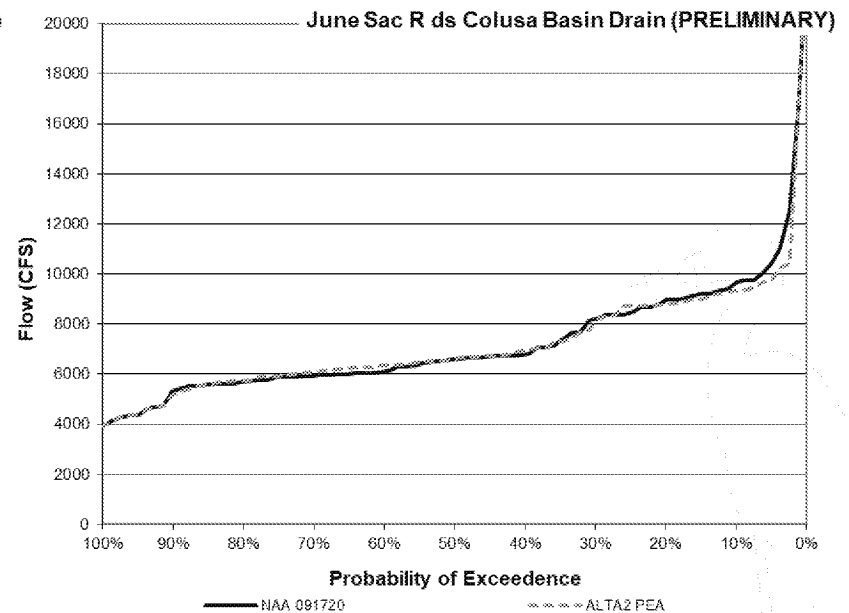
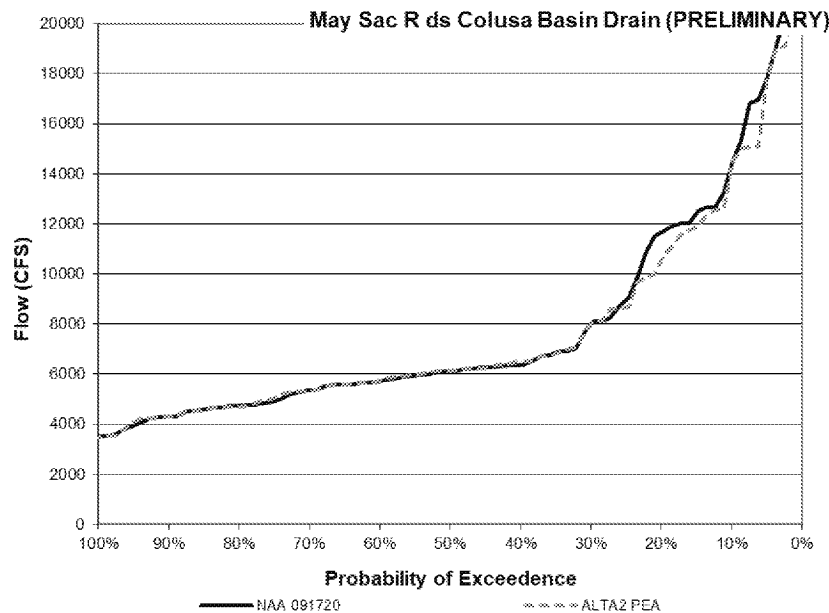
Sacramento River downstream of Colusa Basin Drain



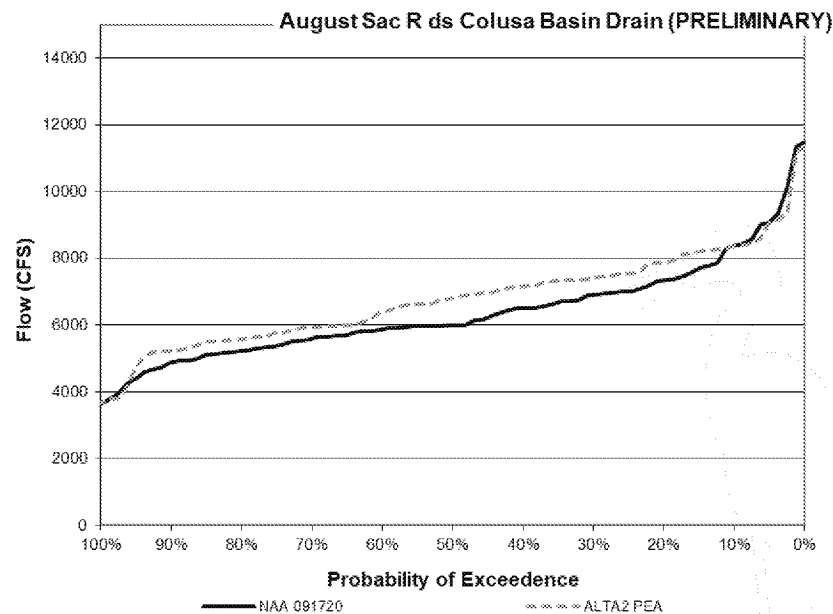
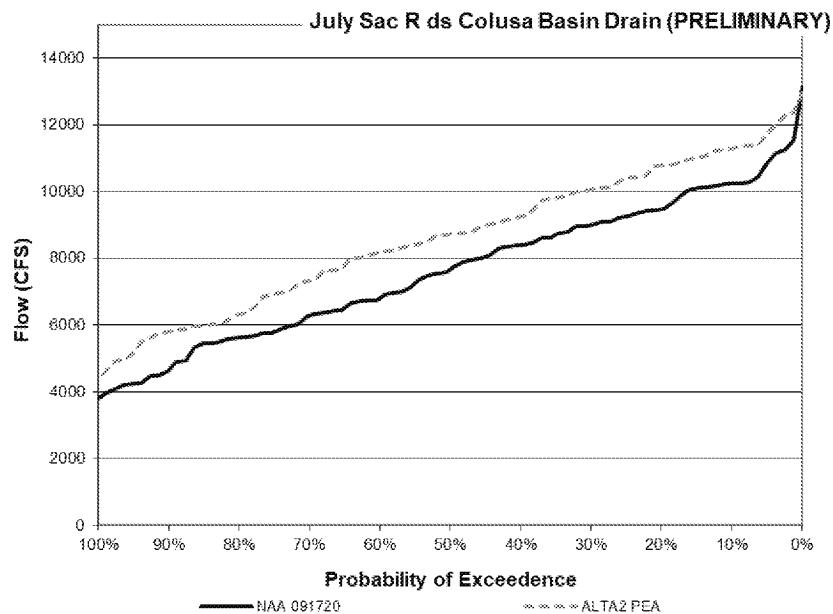
Sacramento River downstream of Colusa Basin Drain



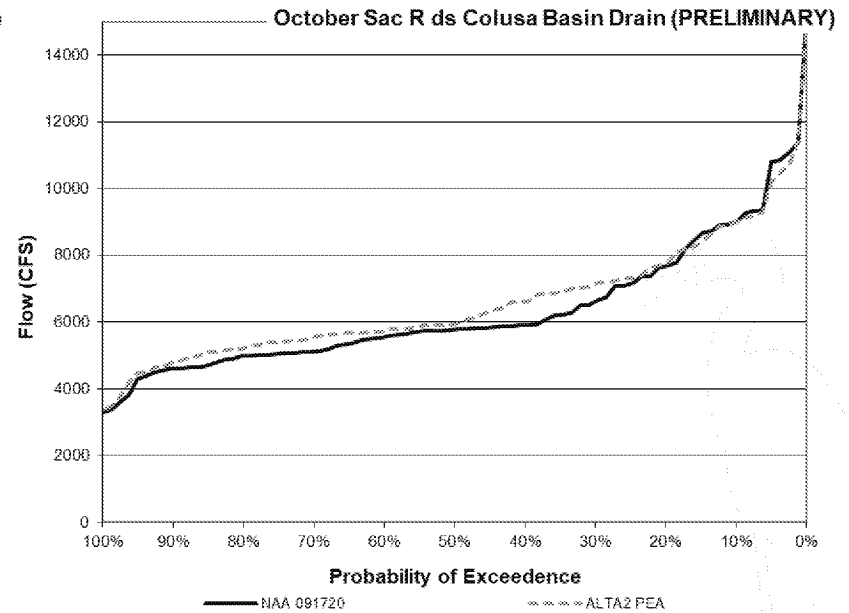
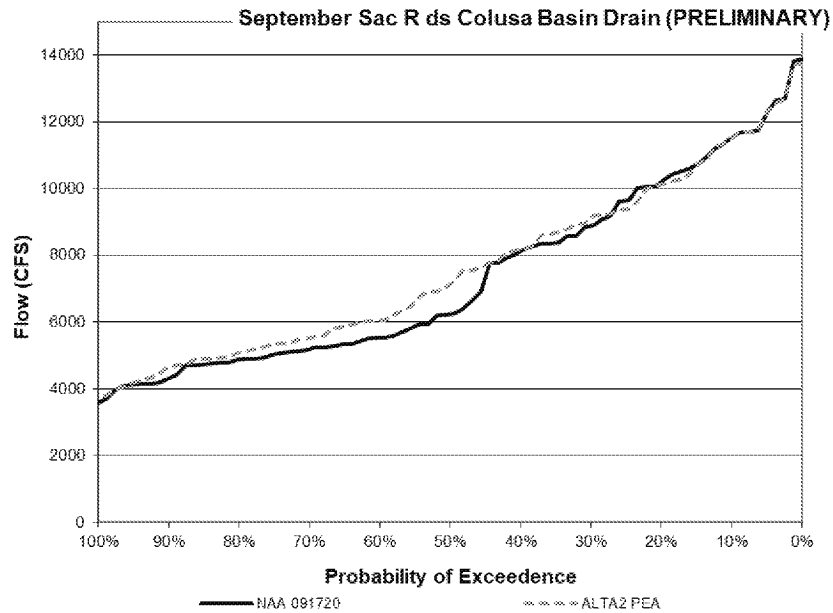
Sacramento River downstream of Colusa Basin Drain



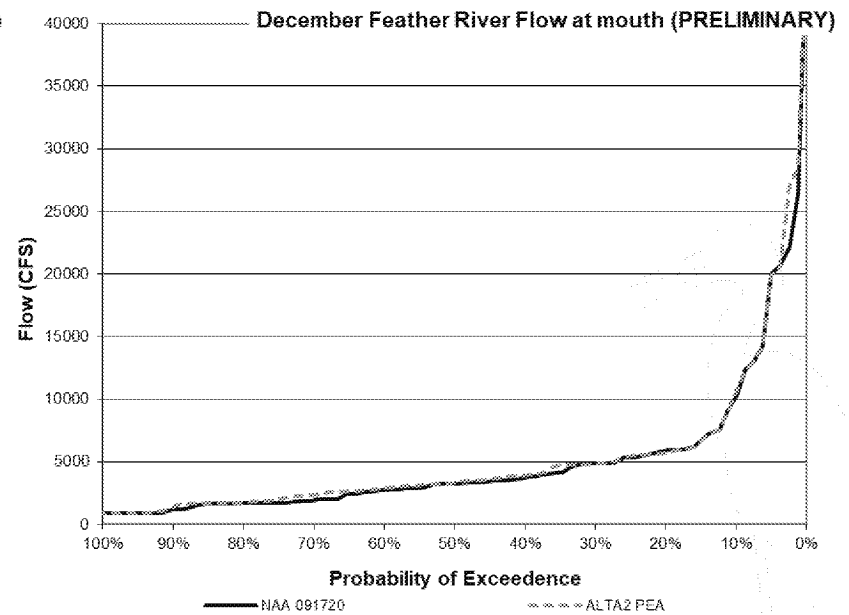
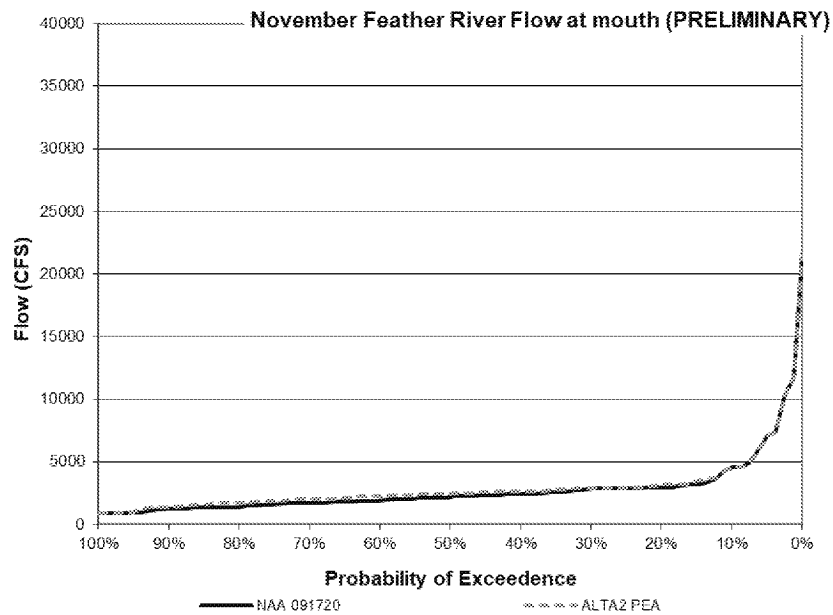
Sacramento River downstream of Colusa Basin Drain



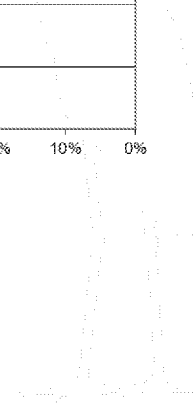
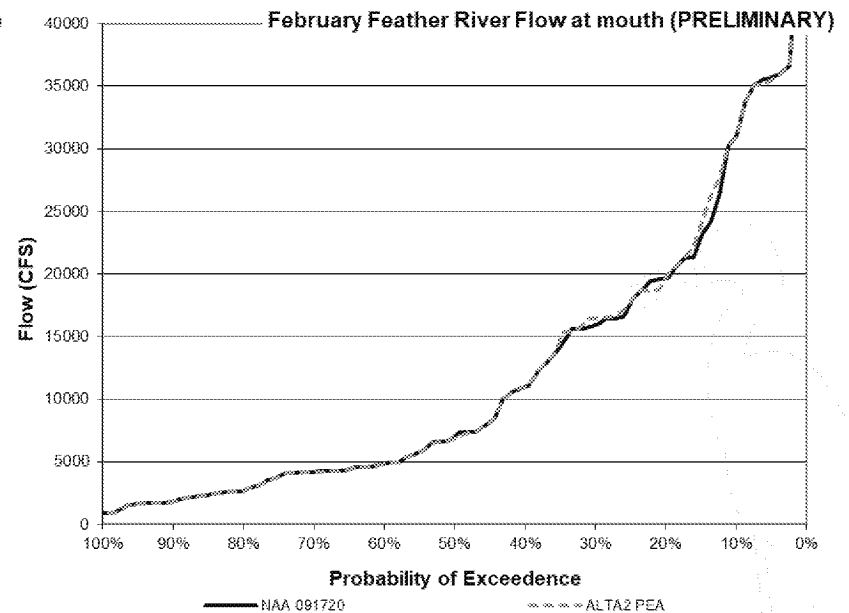
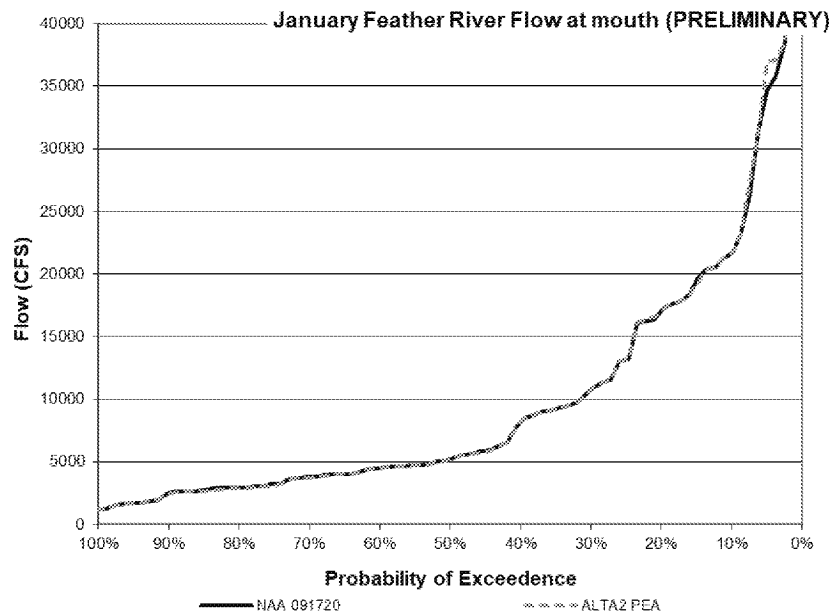
Sacramento River downstream of Colusa Basin Drain



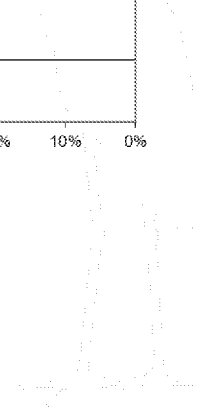
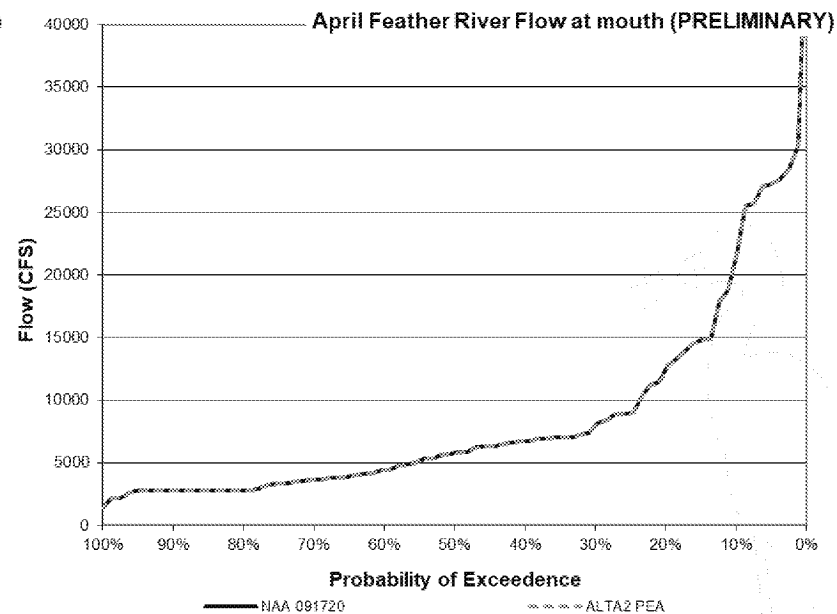
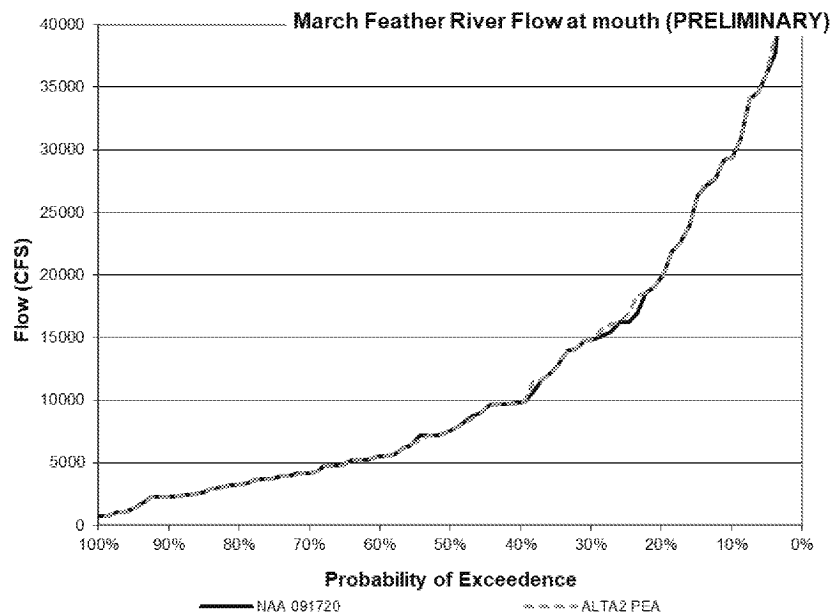
Feather River at Mouth flow



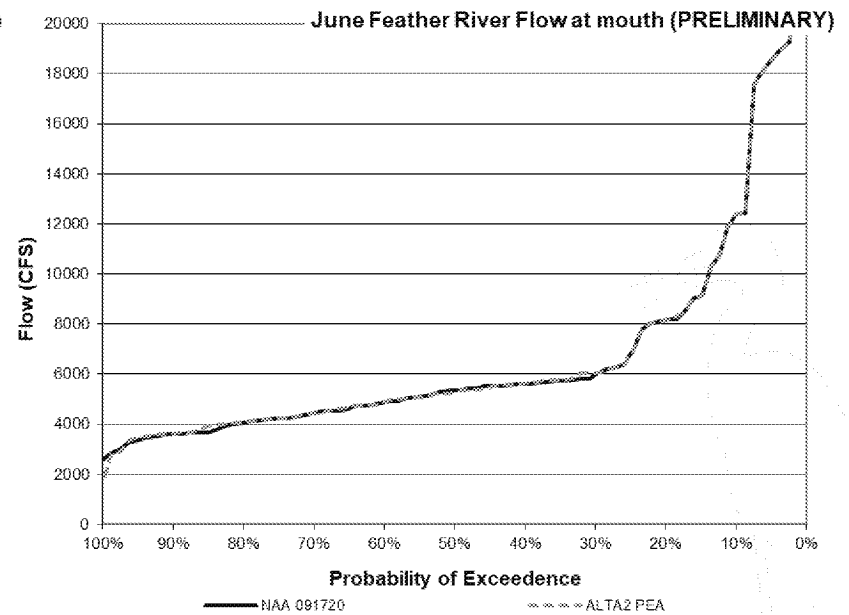
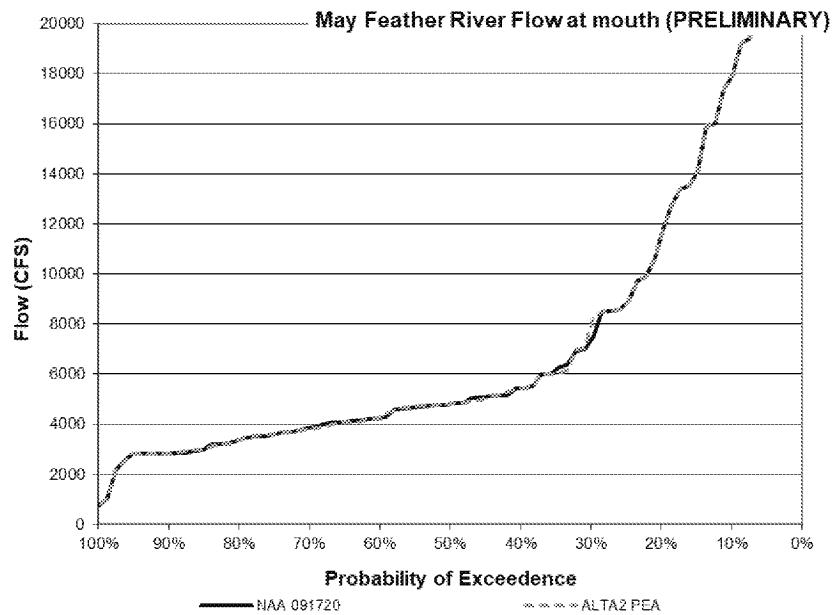
Feather River at Mouth flow



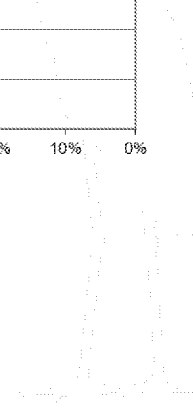
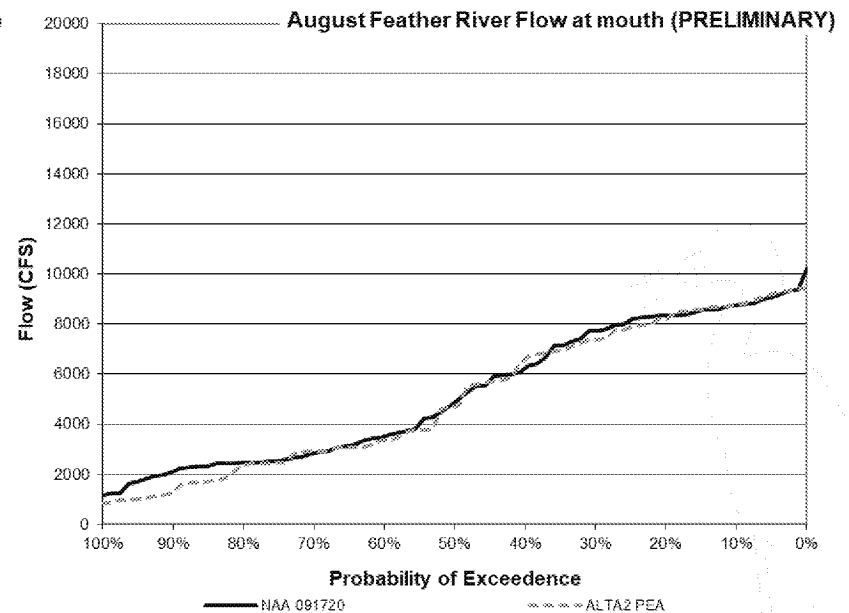
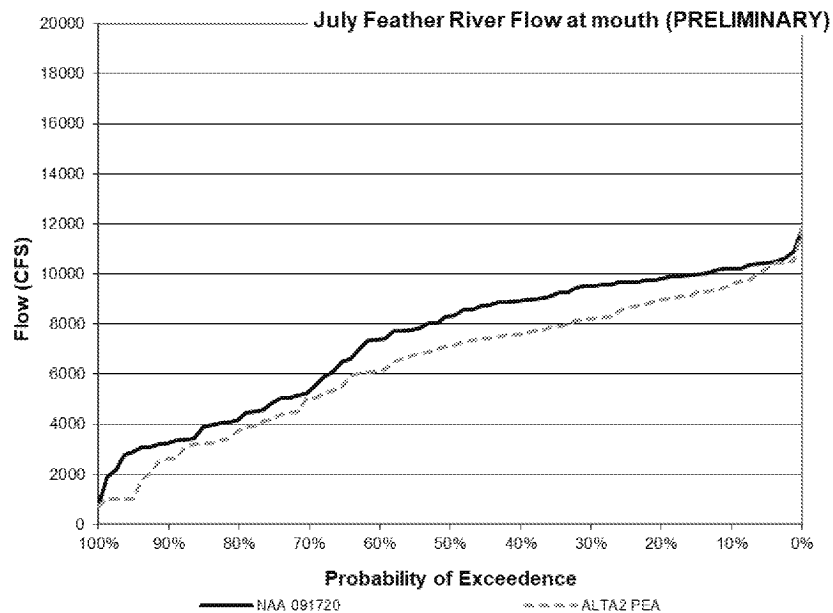
Feather River at Mouth flow



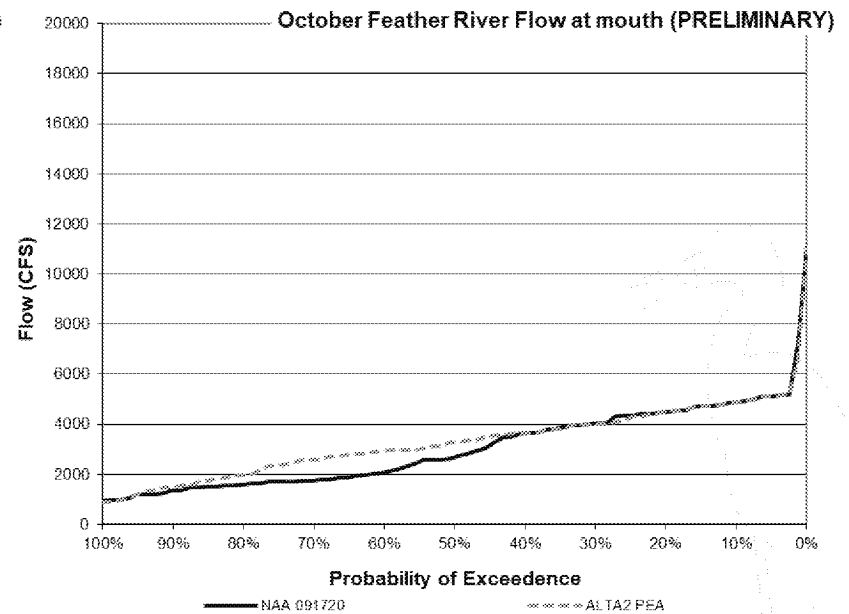
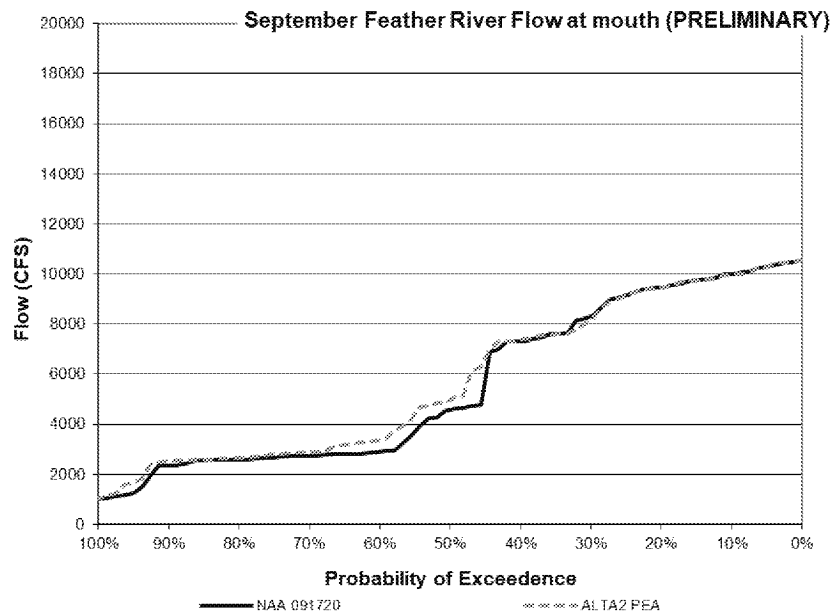
Feather River at Mouth flow



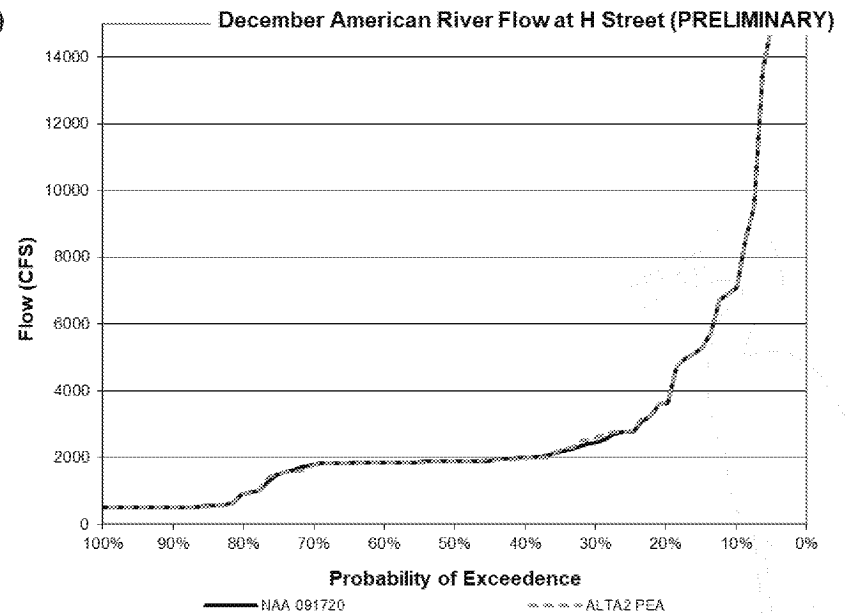
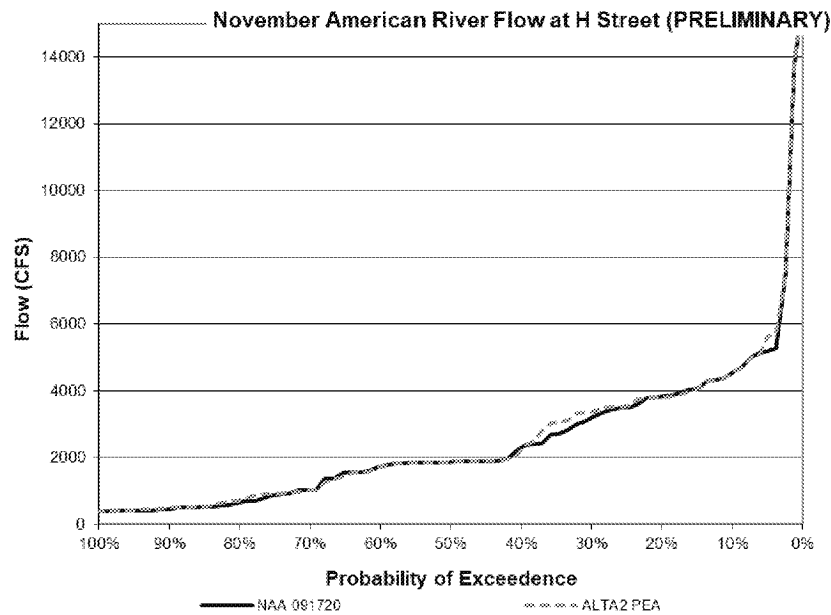
Feather River at Mouth flow



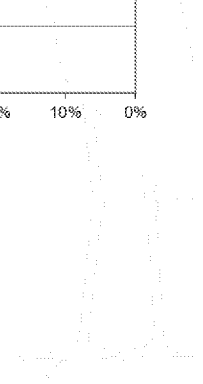
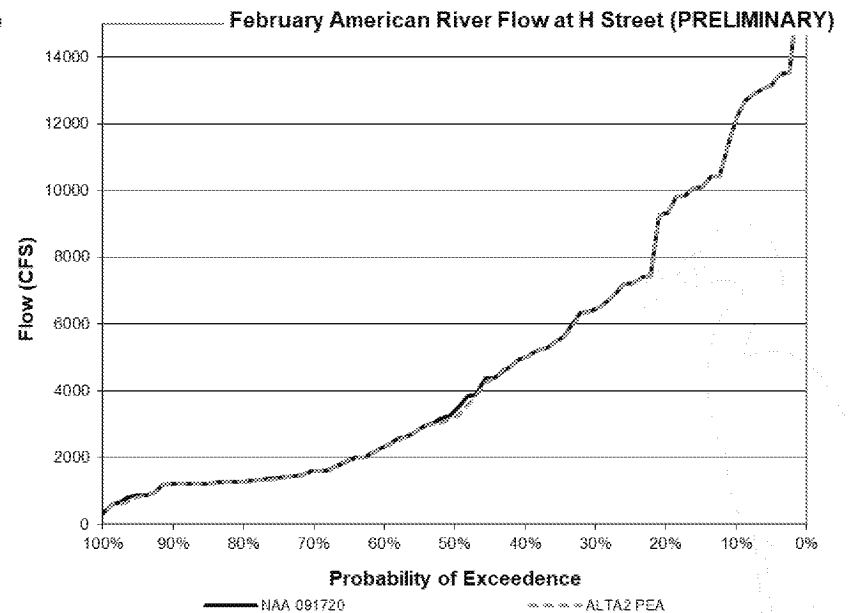
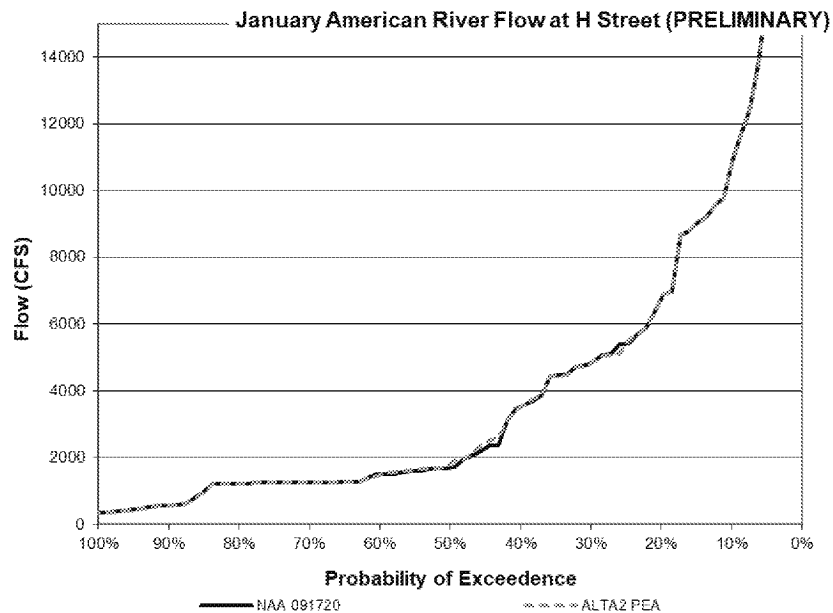
Feather River at Mouth flow



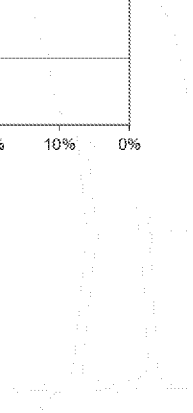
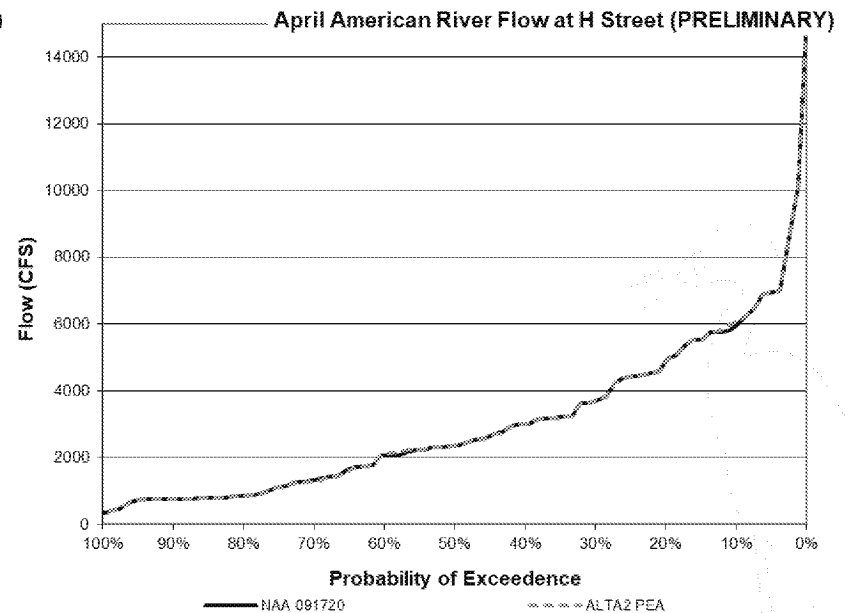
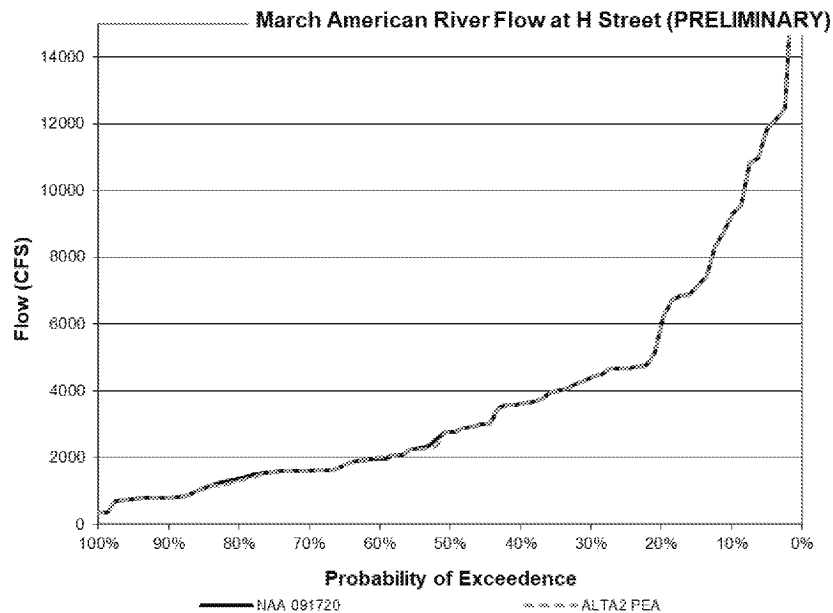
American River at H Street flow



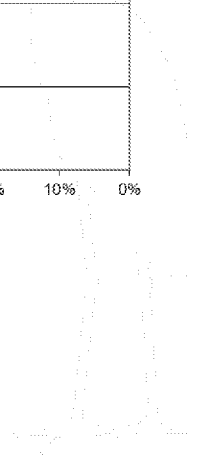
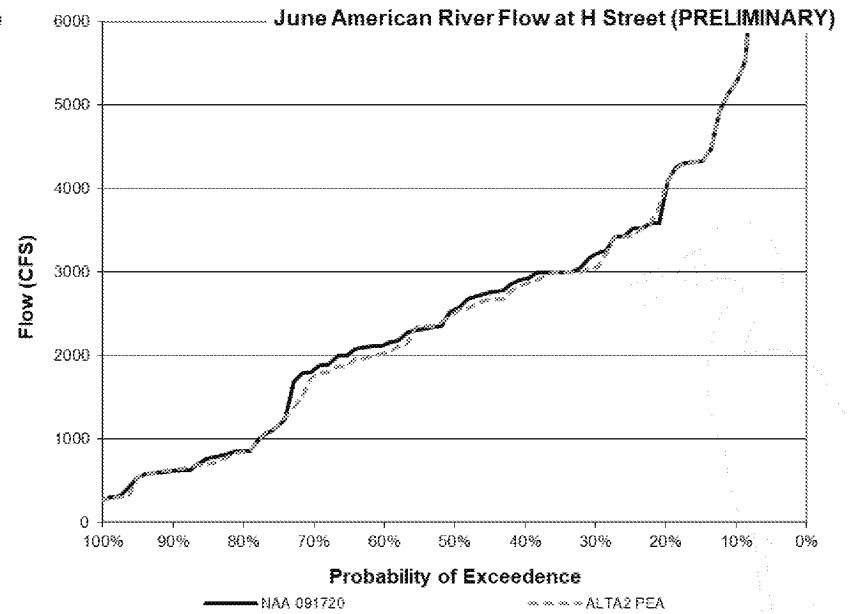
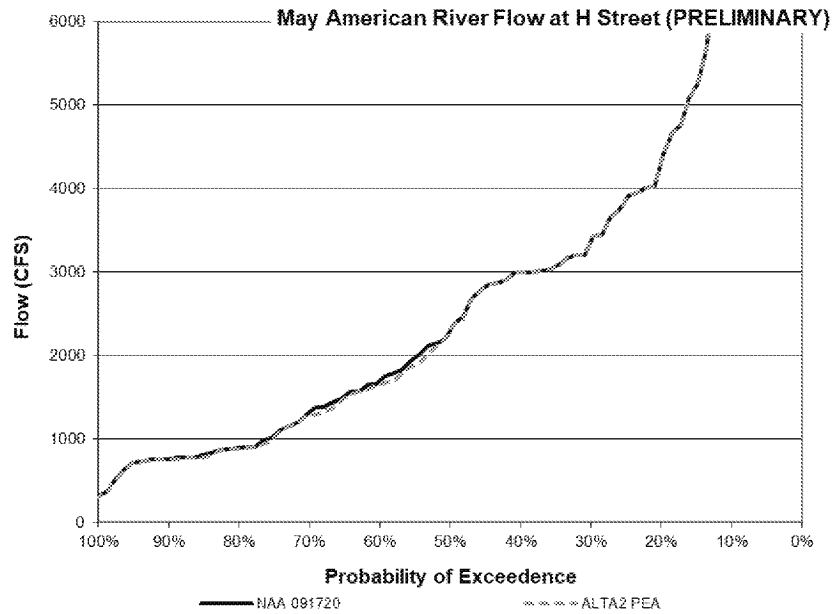
American River at H Street flow



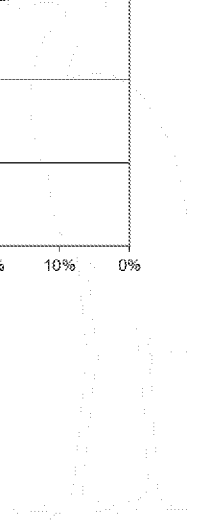
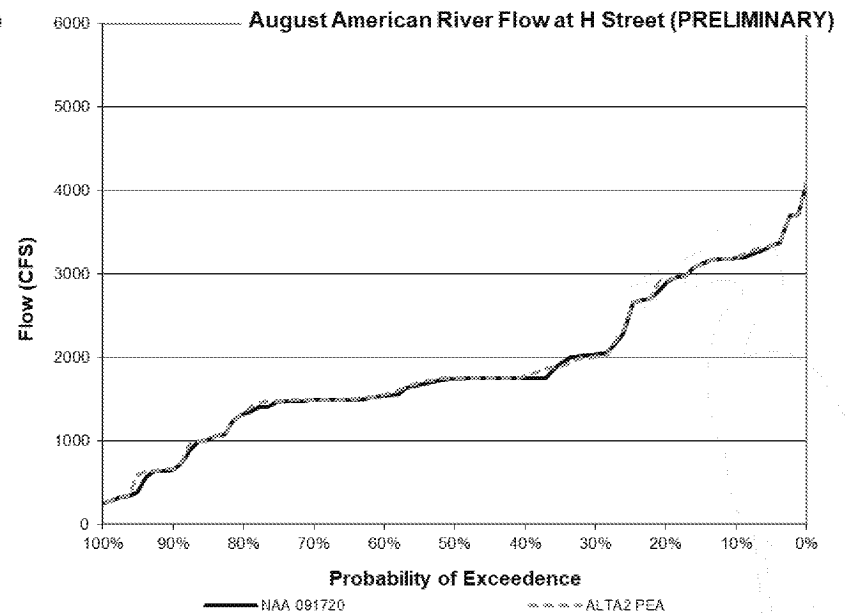
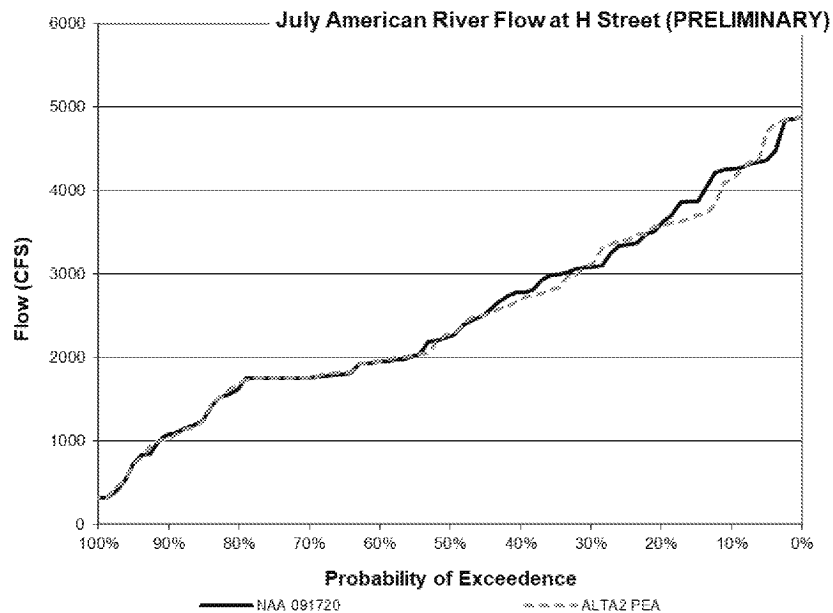
American River at H Street flow



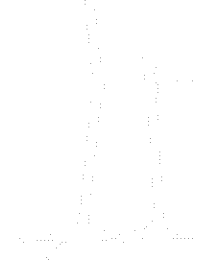
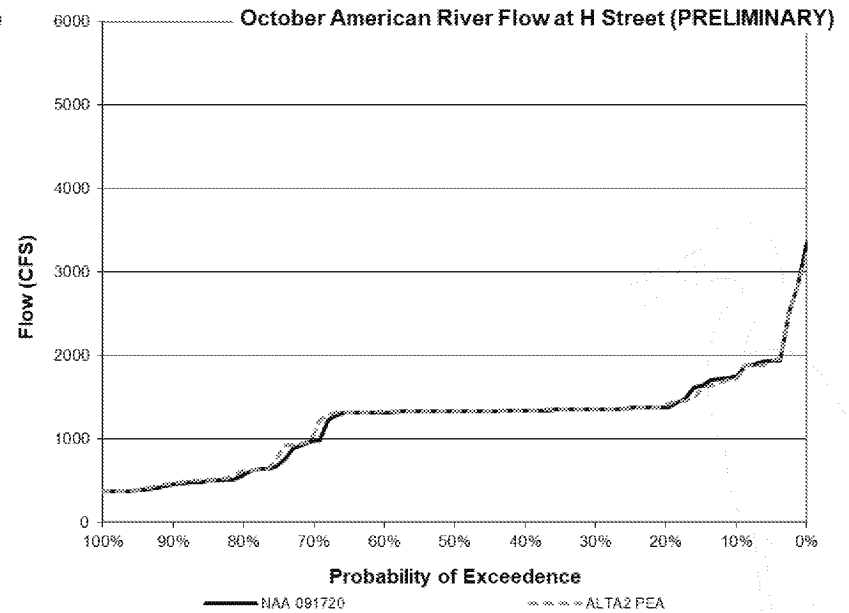
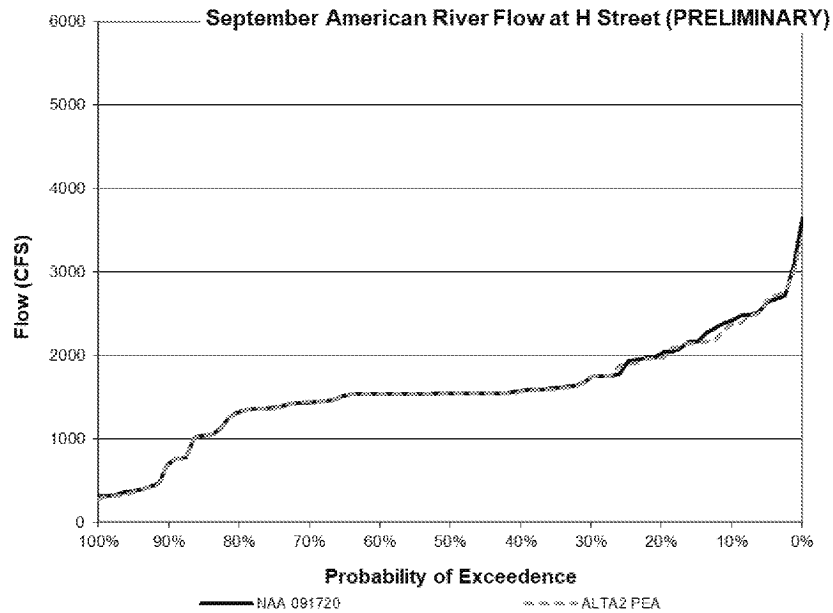
American River at H Street flow



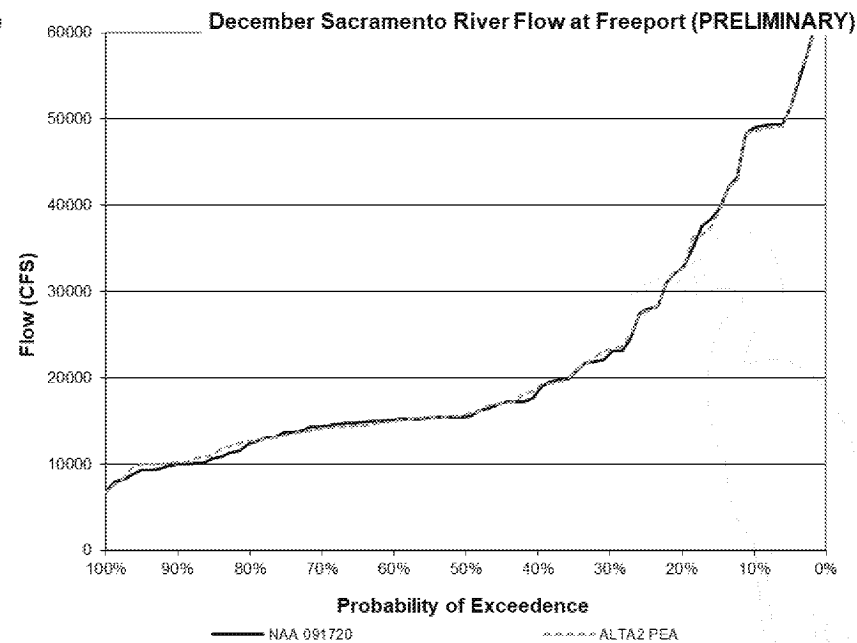
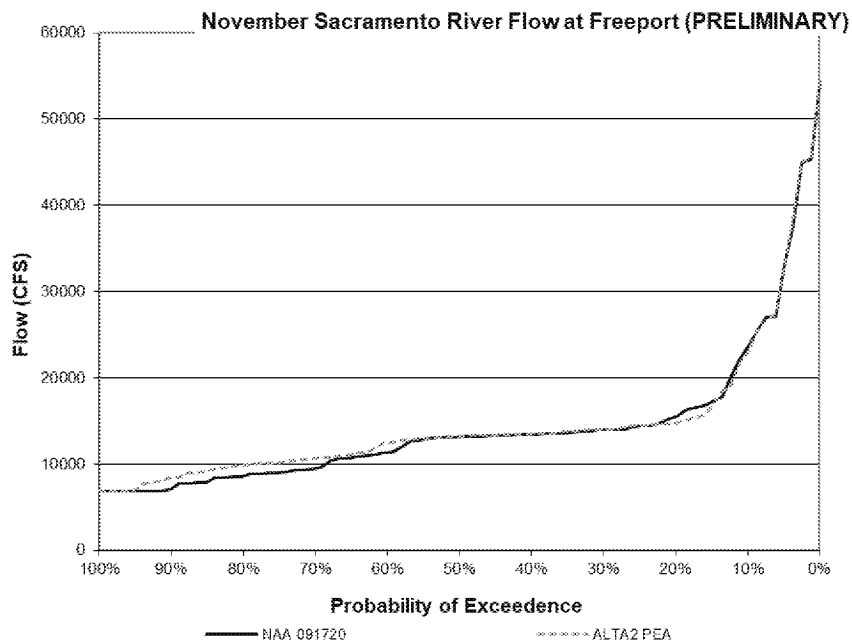
American River at H Street flow



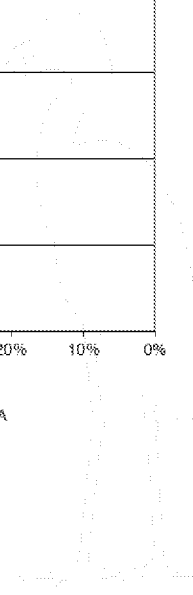
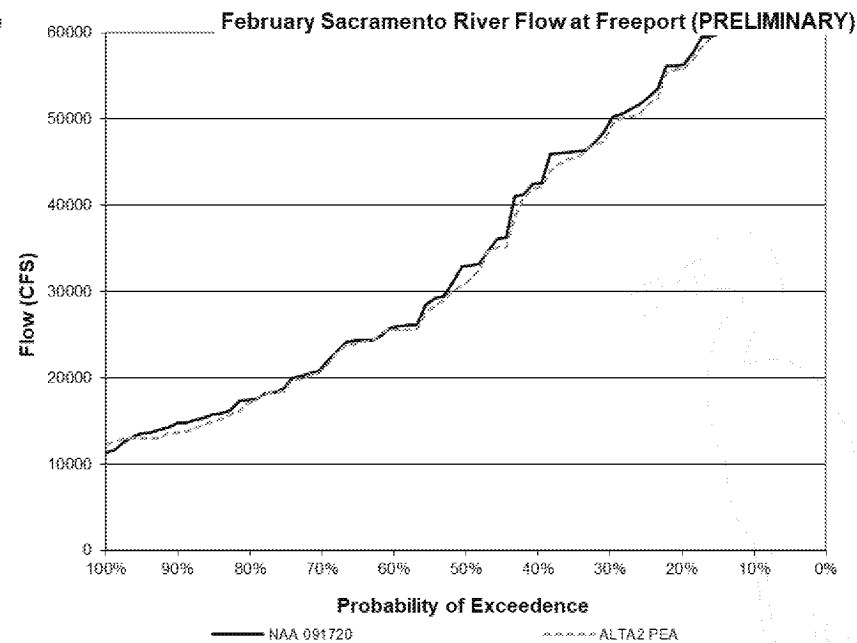
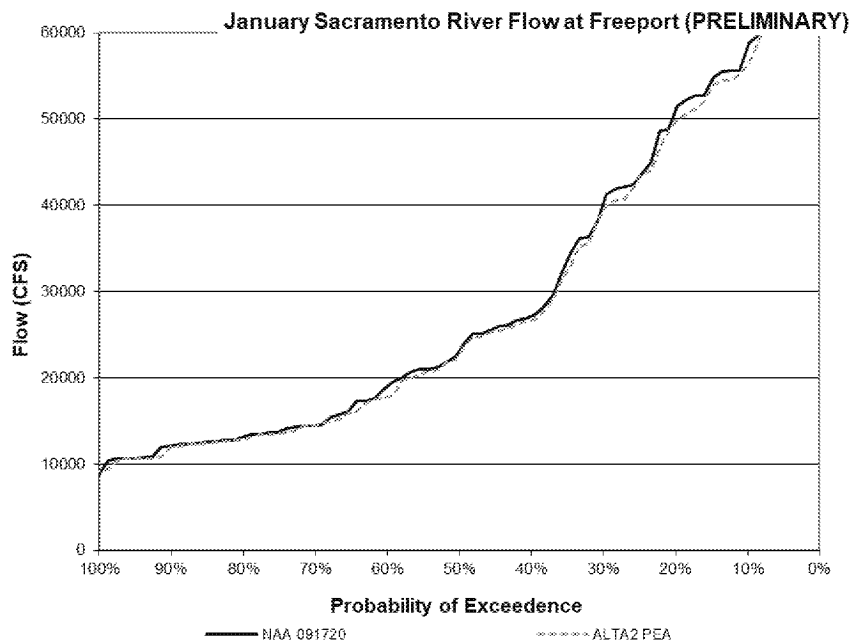
American River at H Street flow



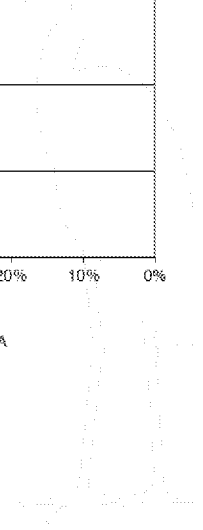
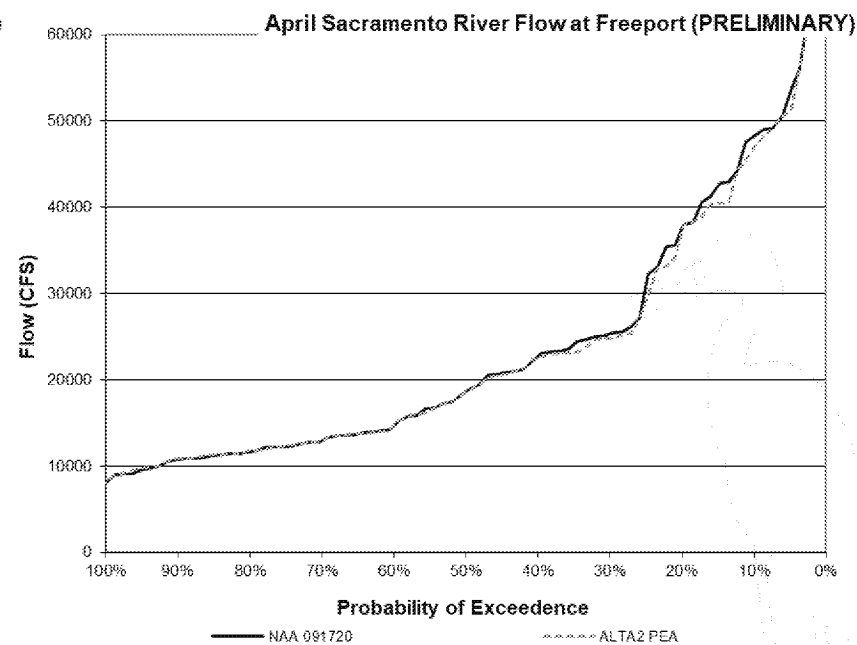
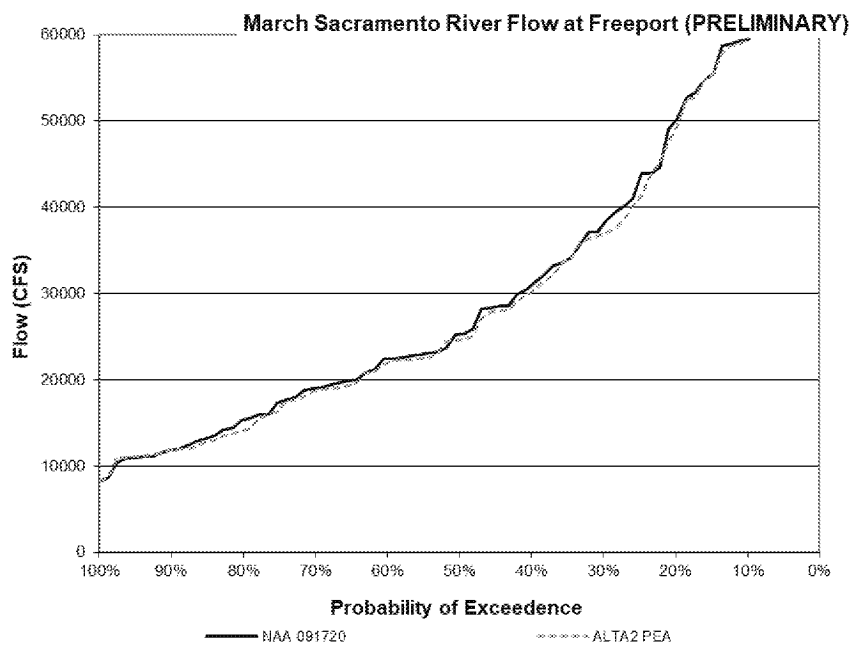
Freeport flow



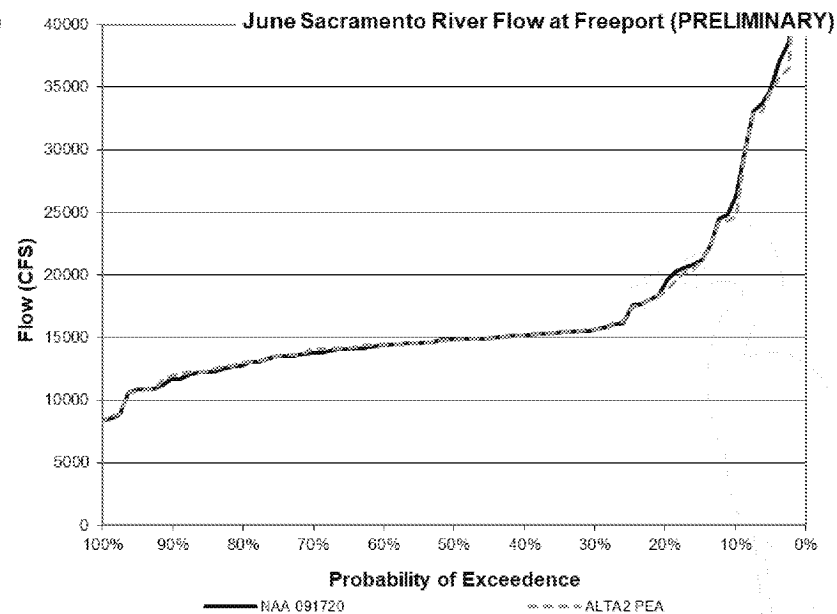
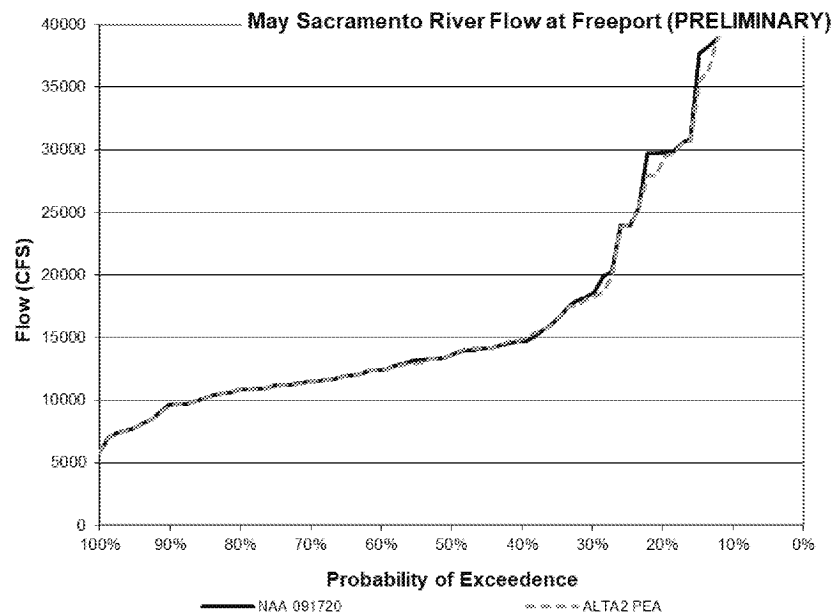
Freeport flow



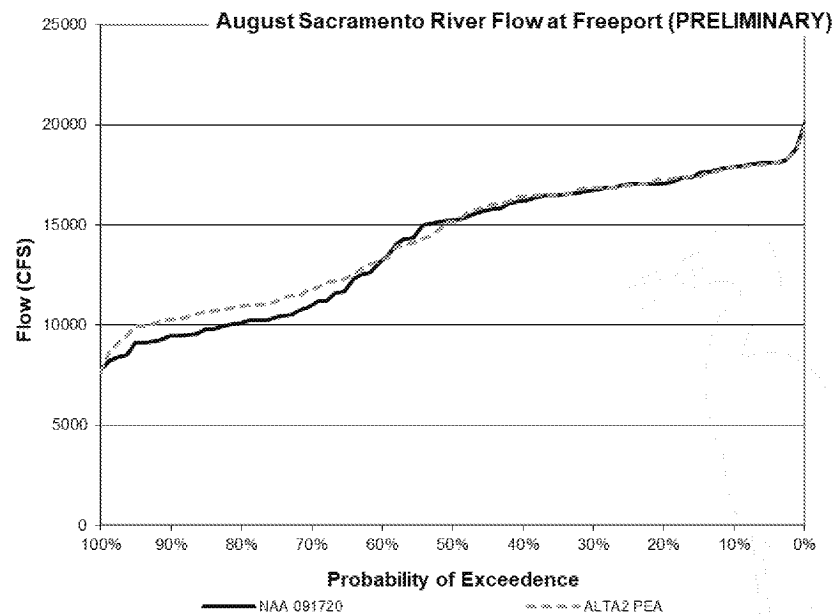
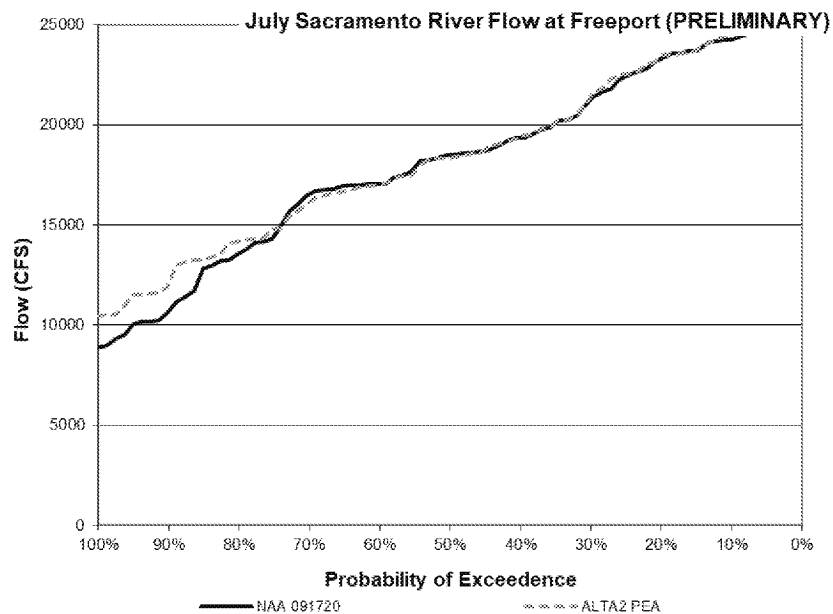
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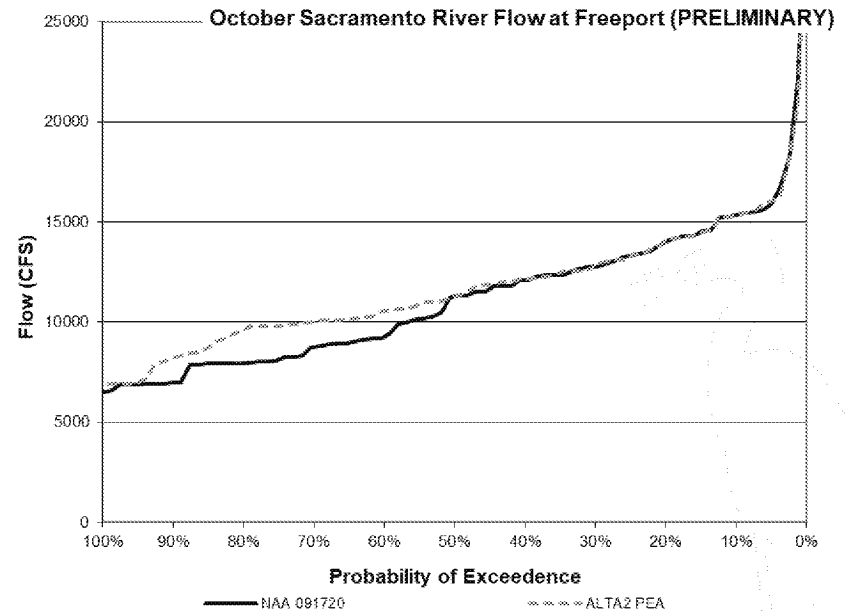
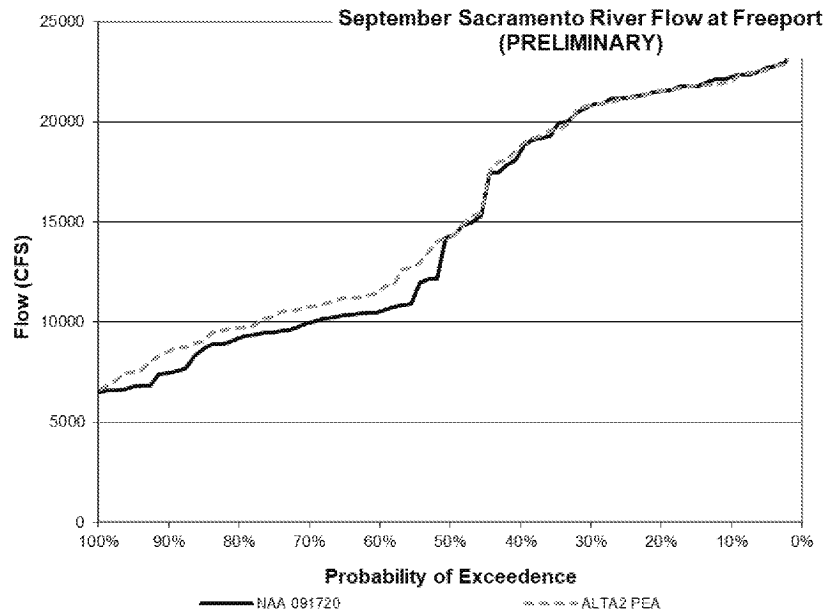
Freeport flow



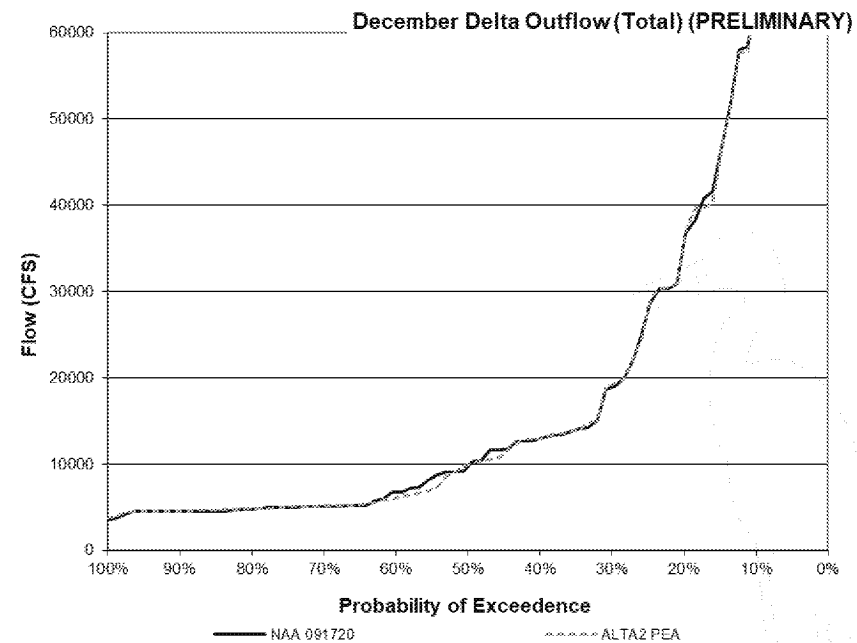
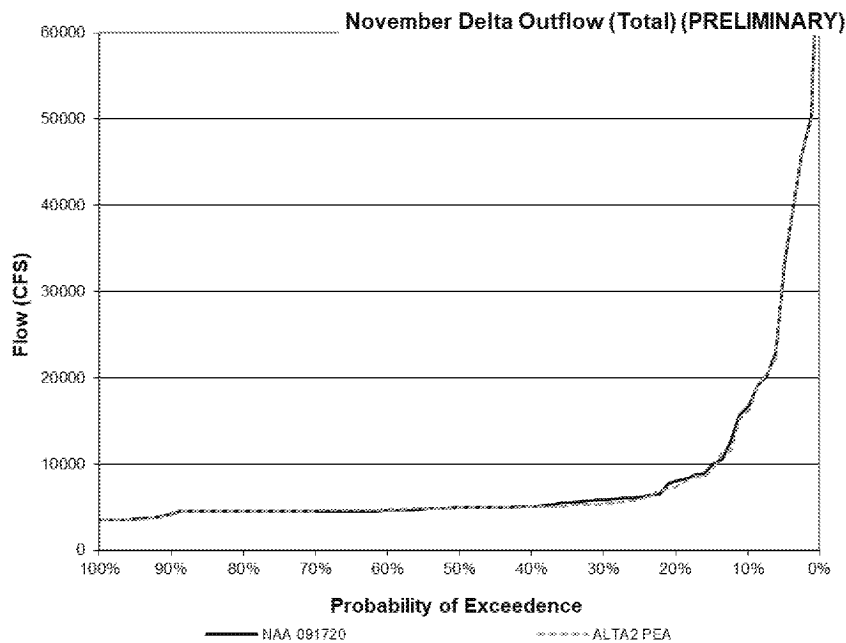
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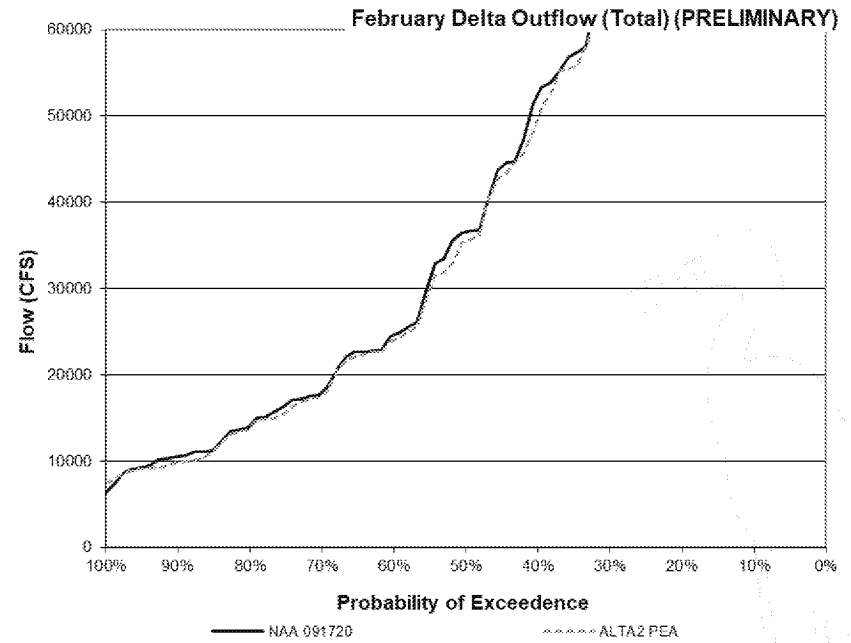
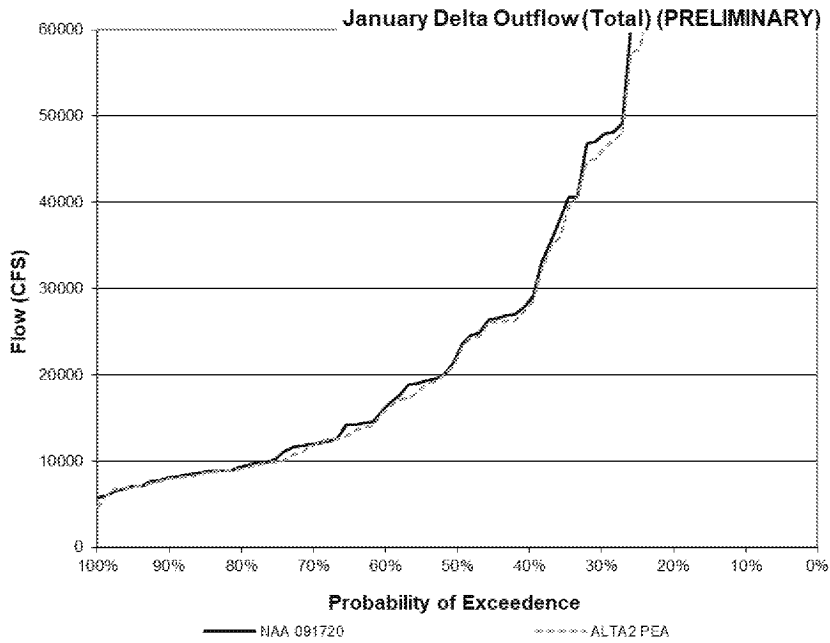
Freeport flow



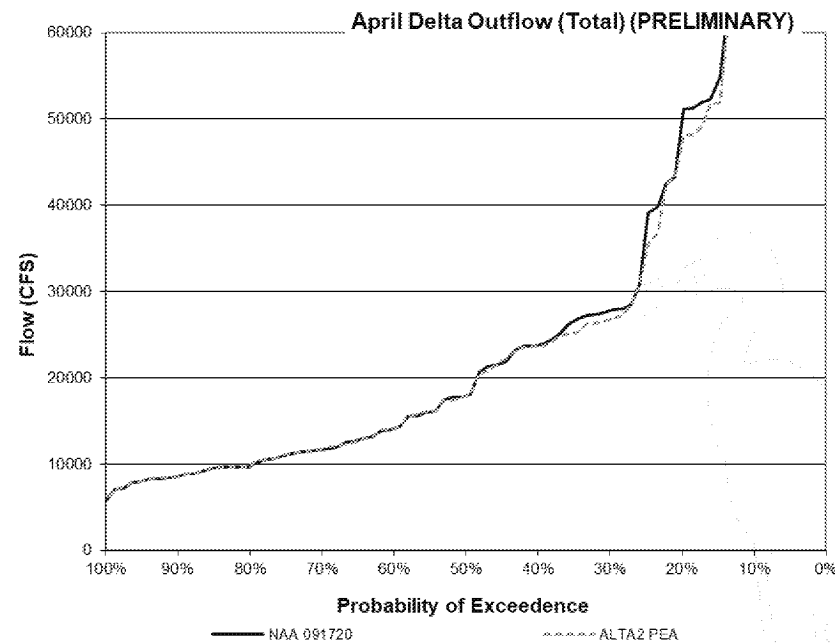
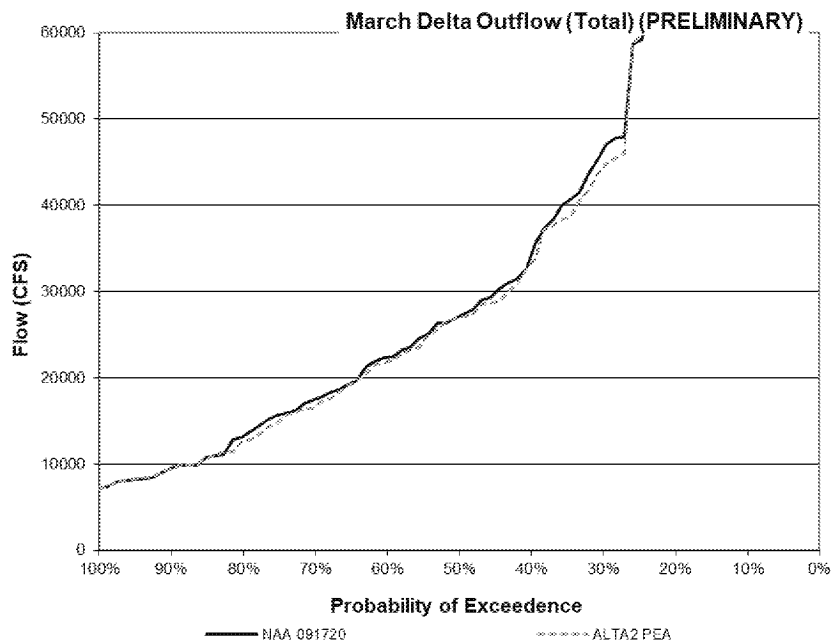
Delta Outflow



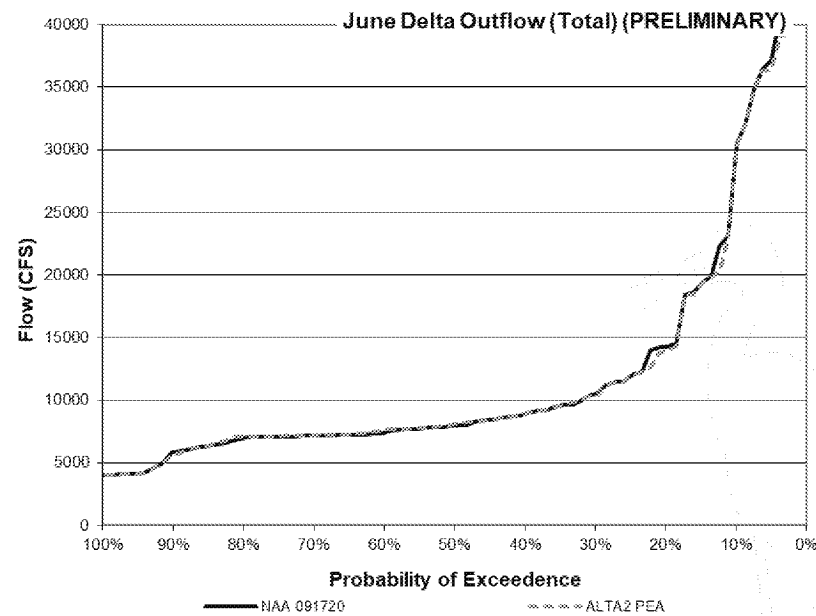
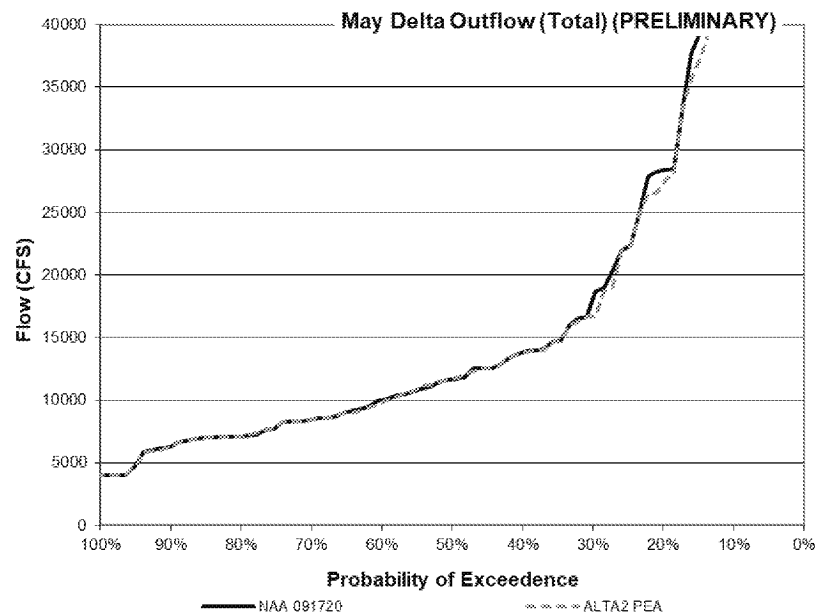
Delta Outflow



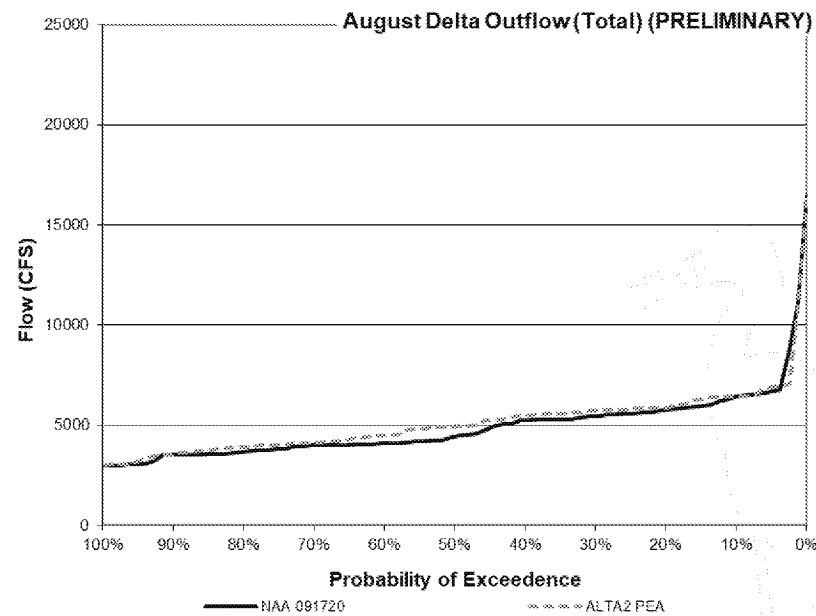
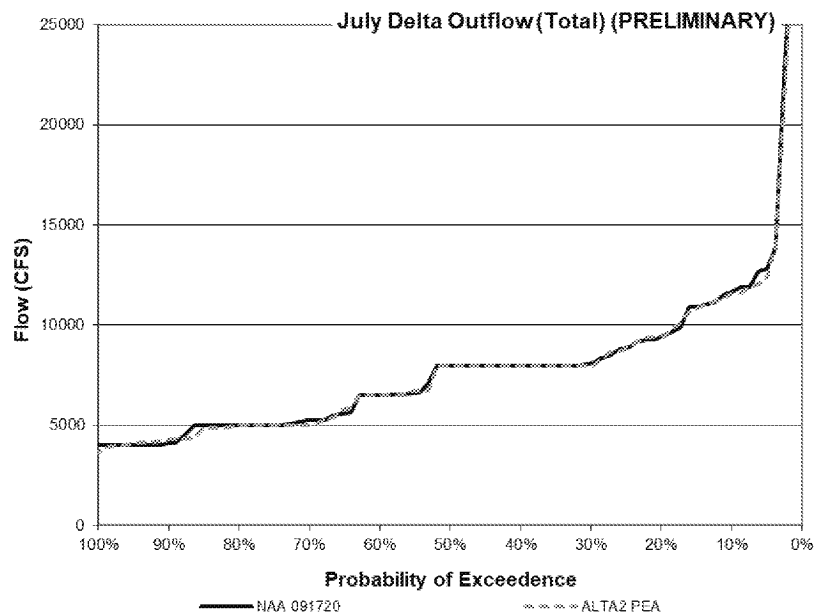
Delta Outflow



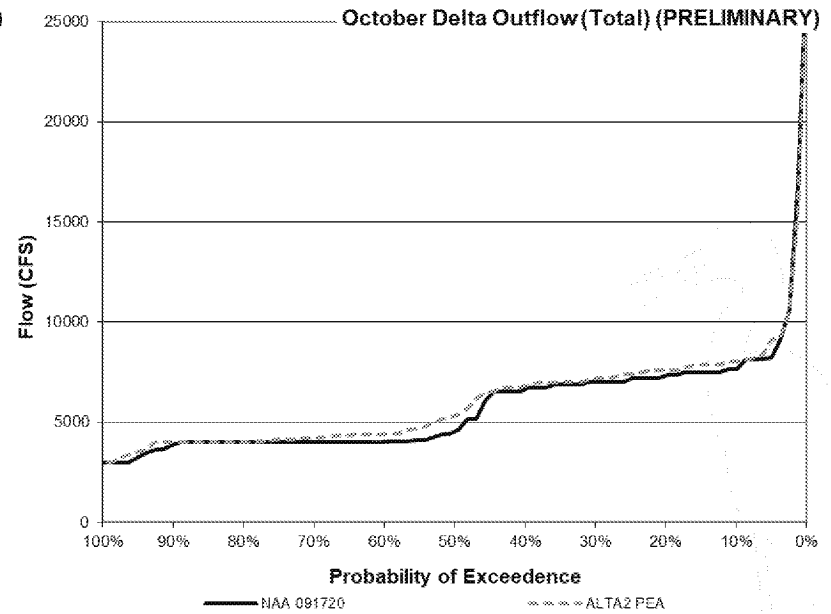
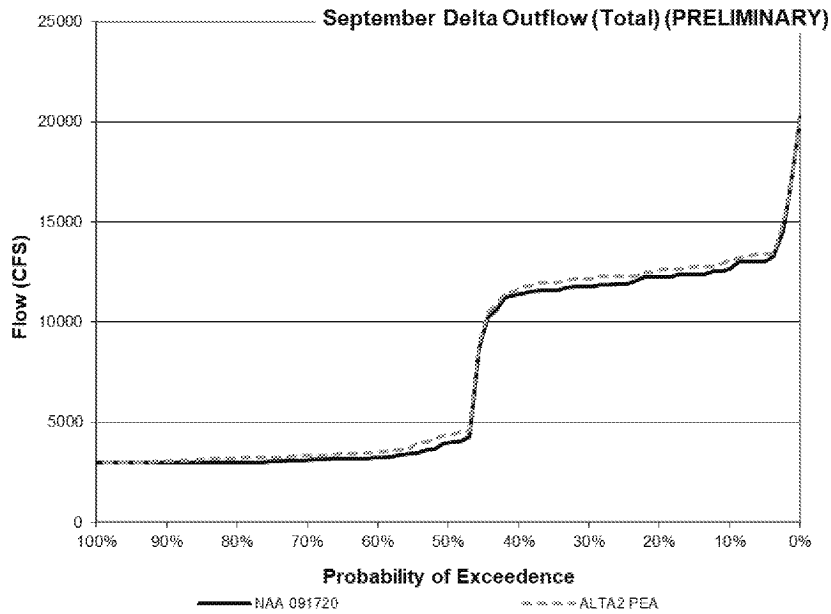
Delta Outflow



Delta Outflow

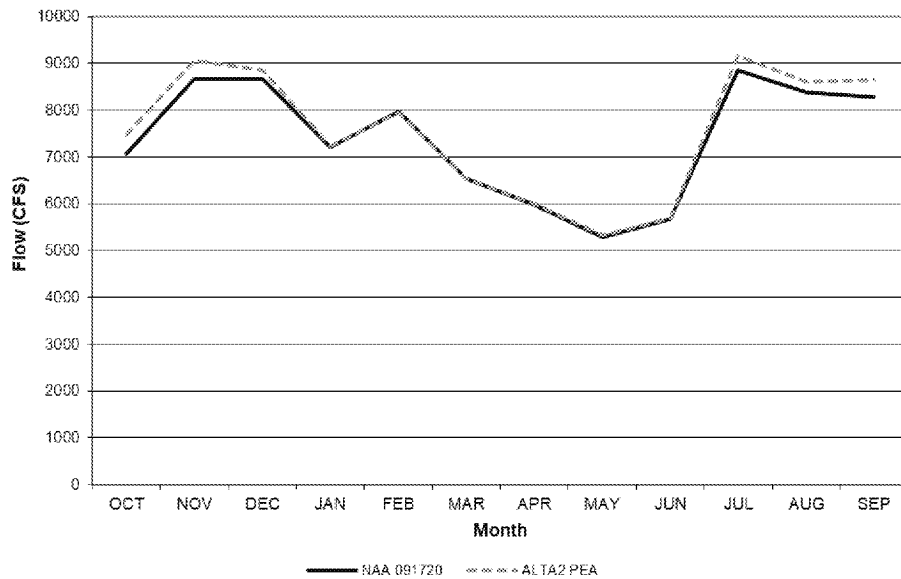


Delta Outflow

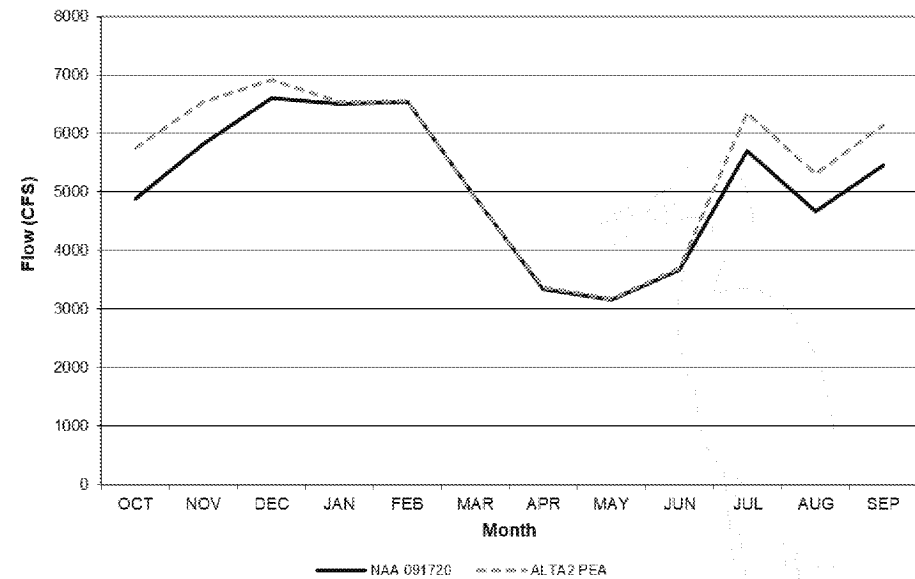


Delta Exports

Total Exports SWP and CVP (PRELIMINARY) Averages



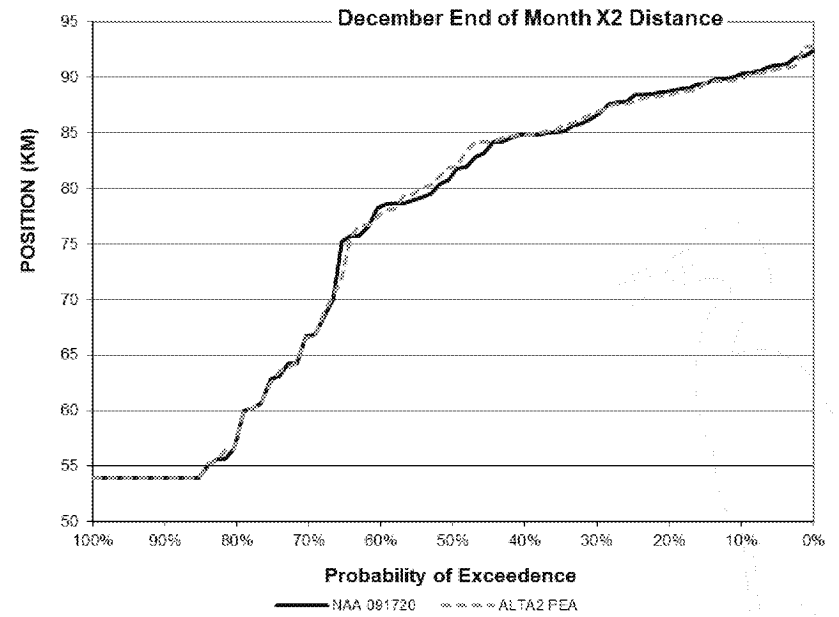
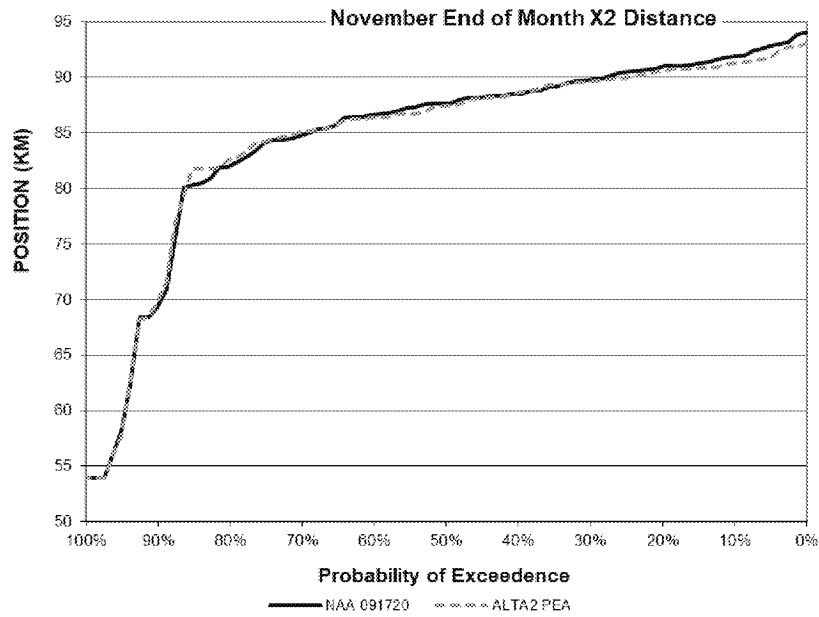
Total Exports SWP and CVP (PRELIMINARY) Dry and Critically Dry Years (40-30-30)



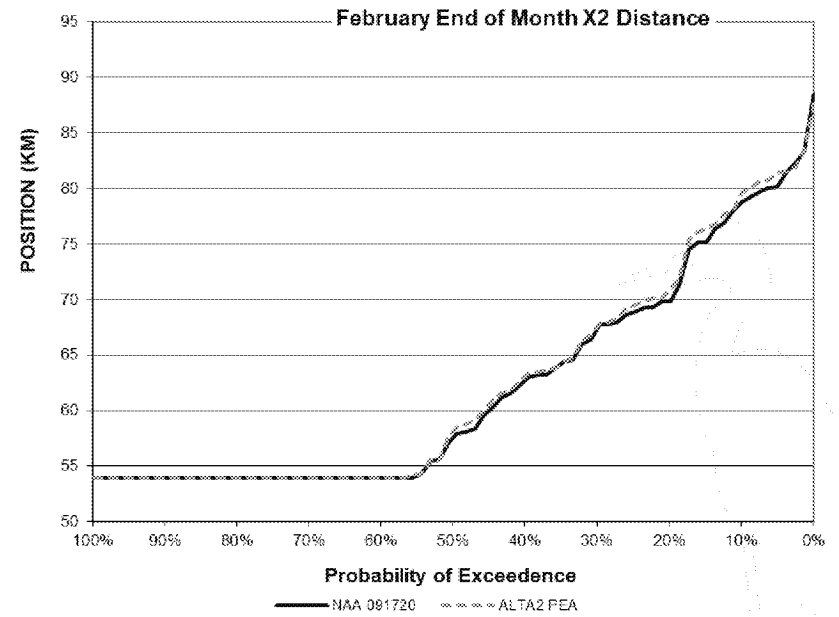
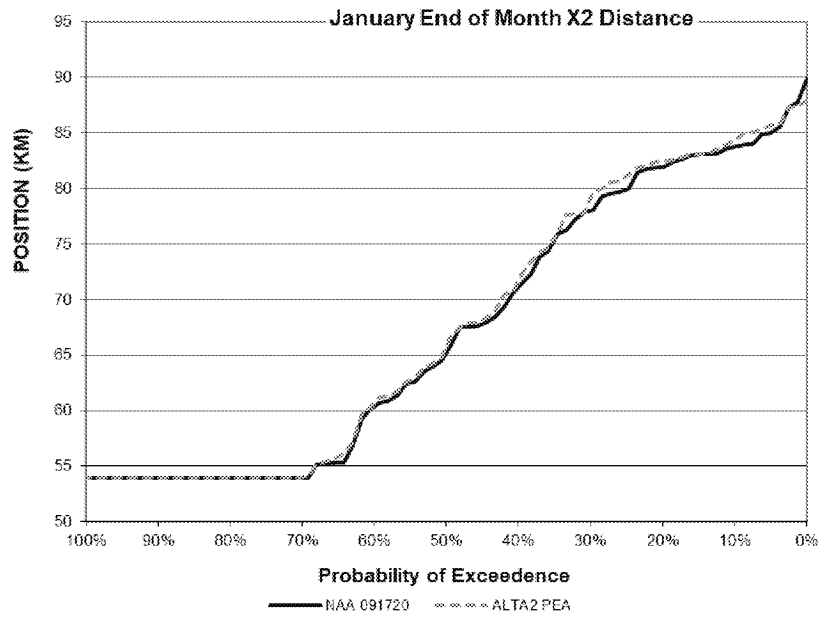
X2 Results

Preliminary Effects Analysis

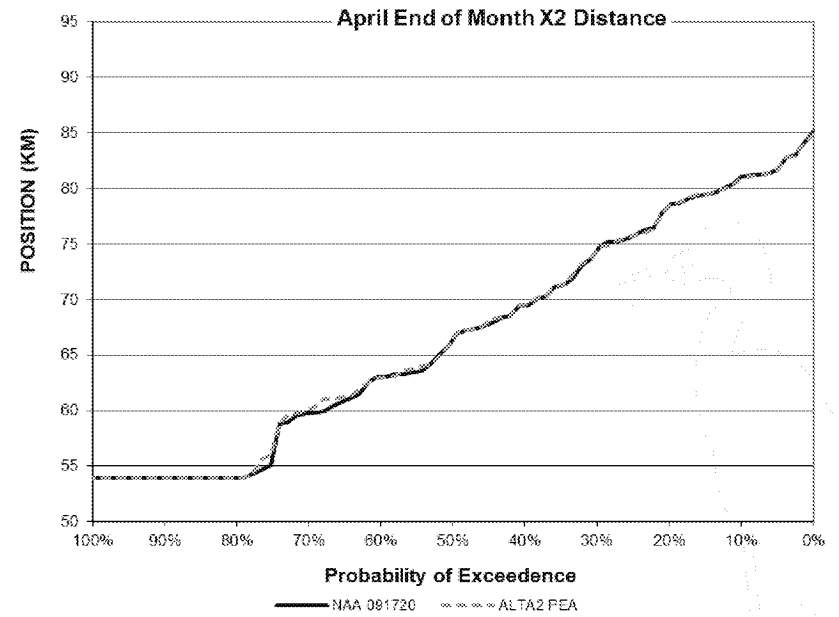
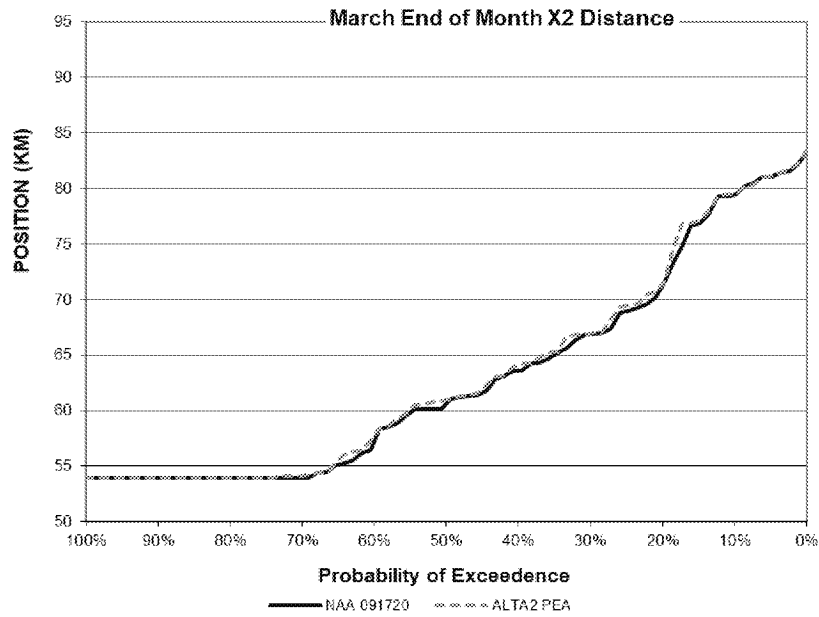
X2



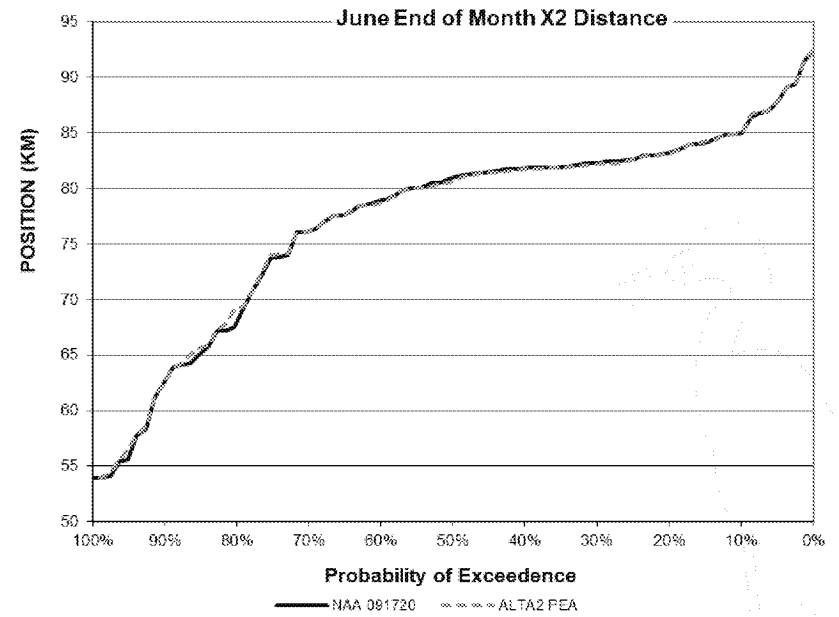
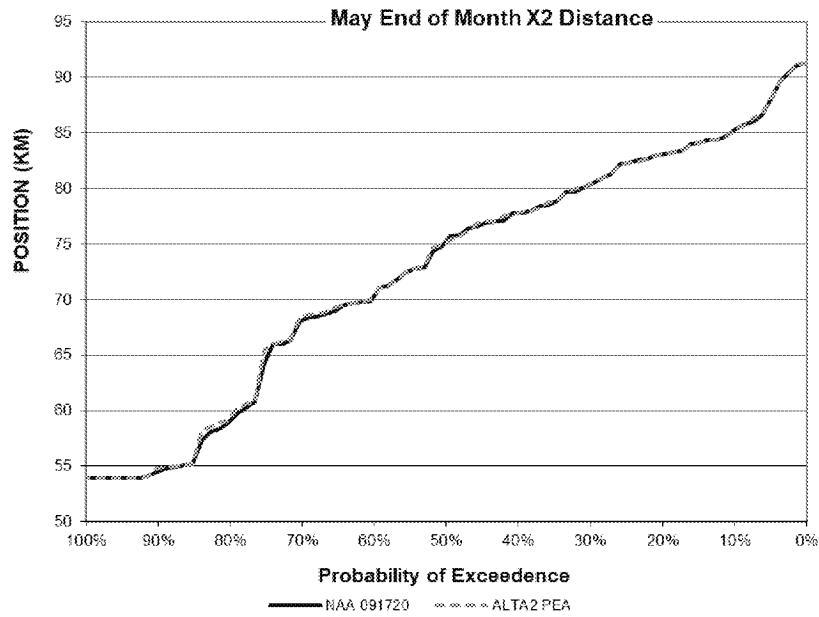
X2



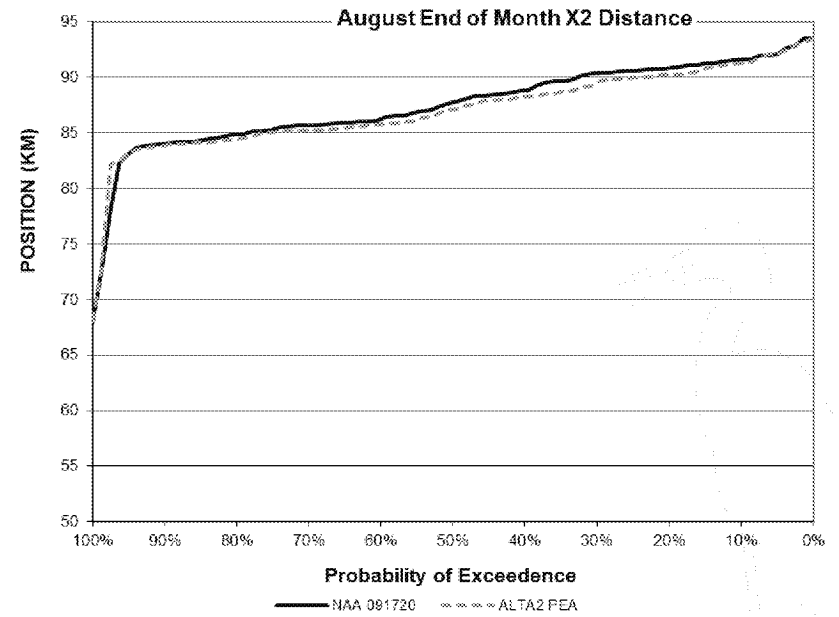
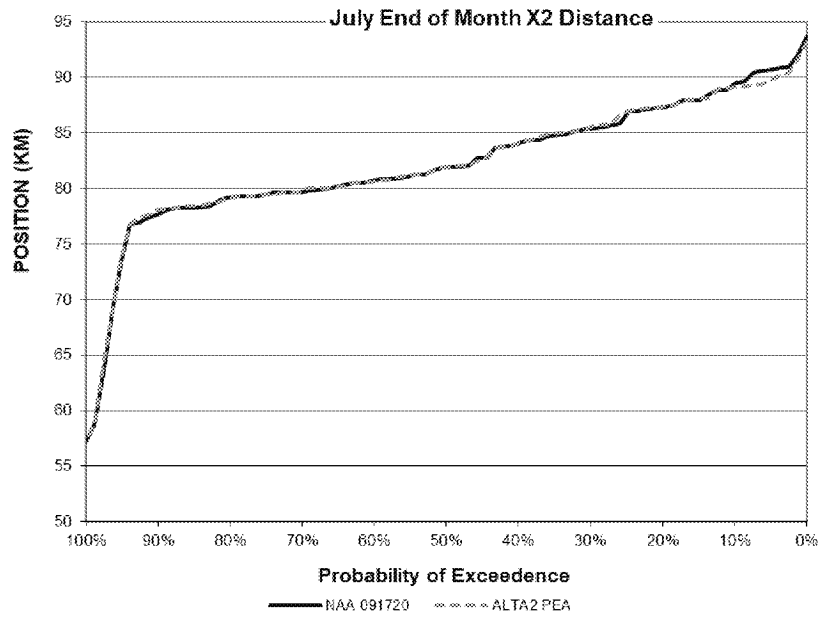
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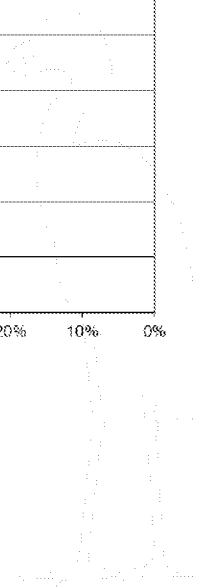
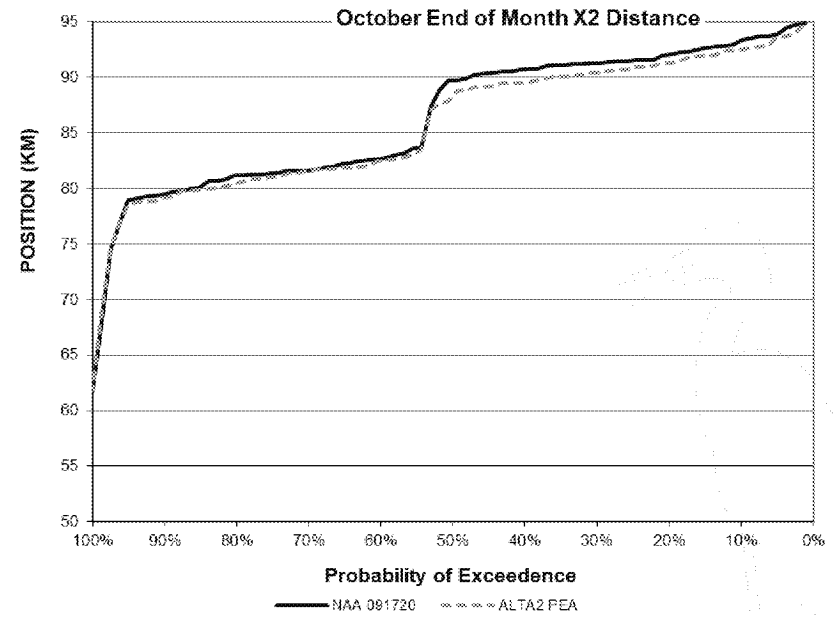
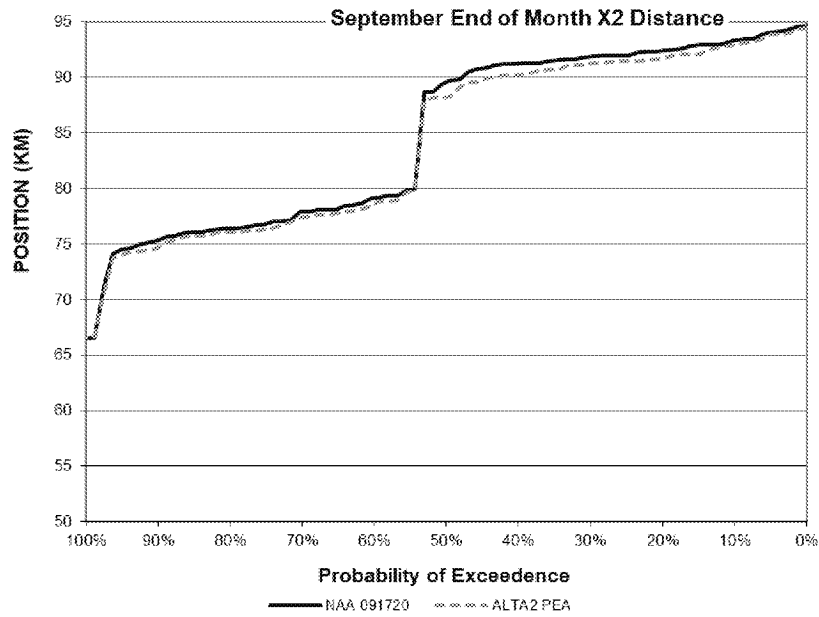
X2



X2



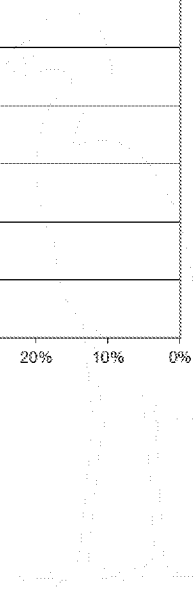
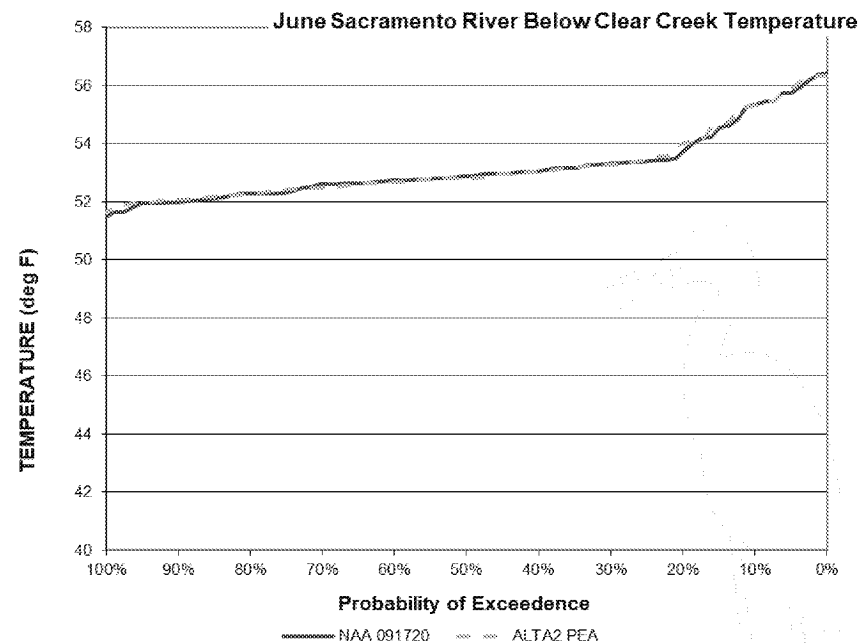
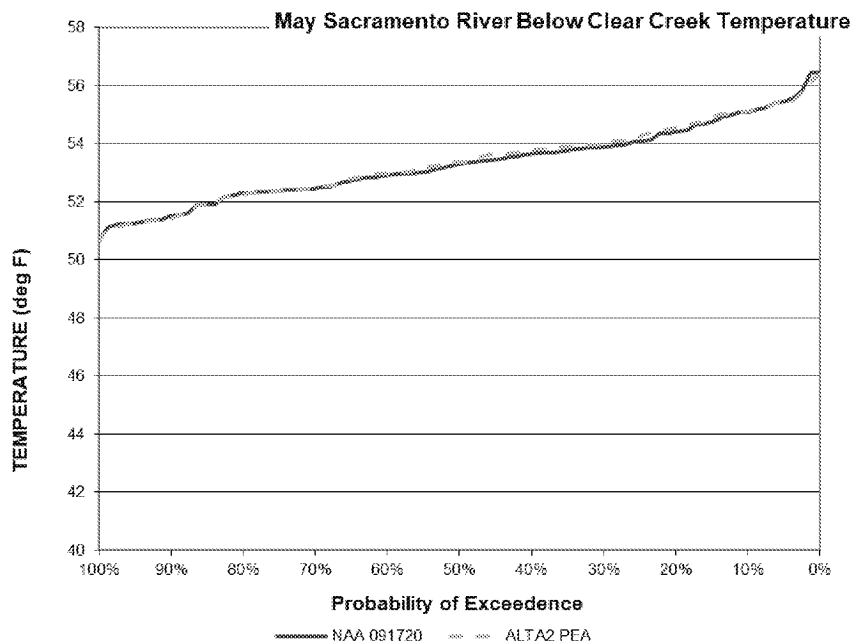
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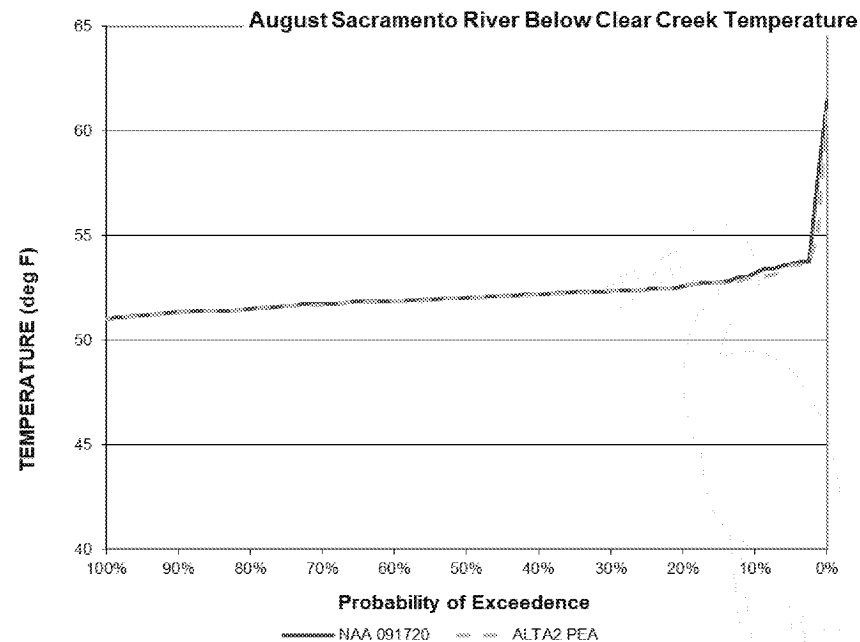
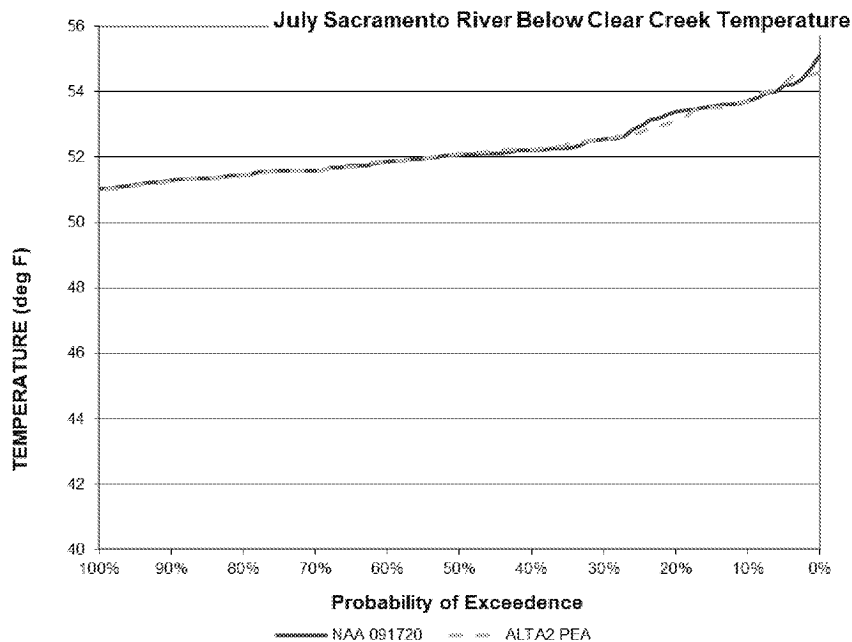
Temperature Results

Preliminary Effects Analysis

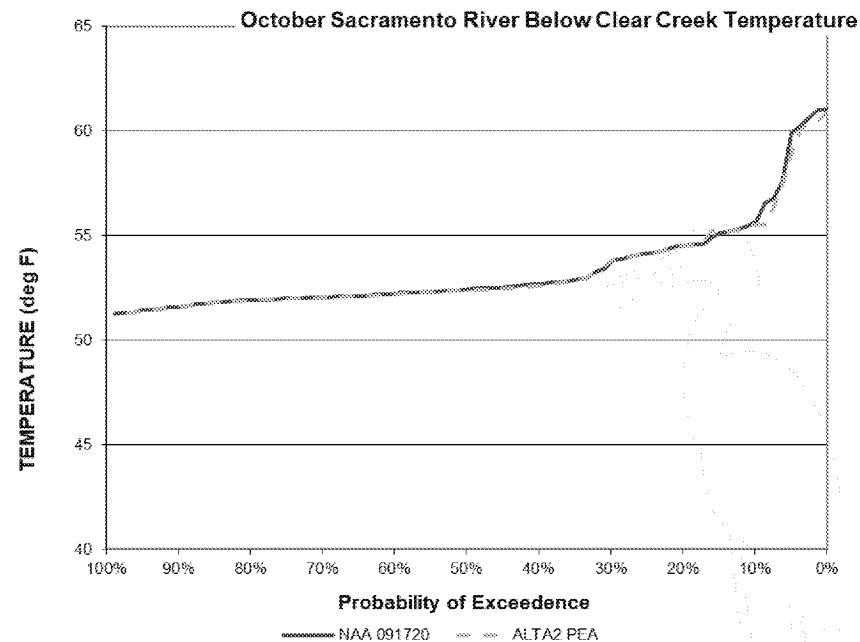
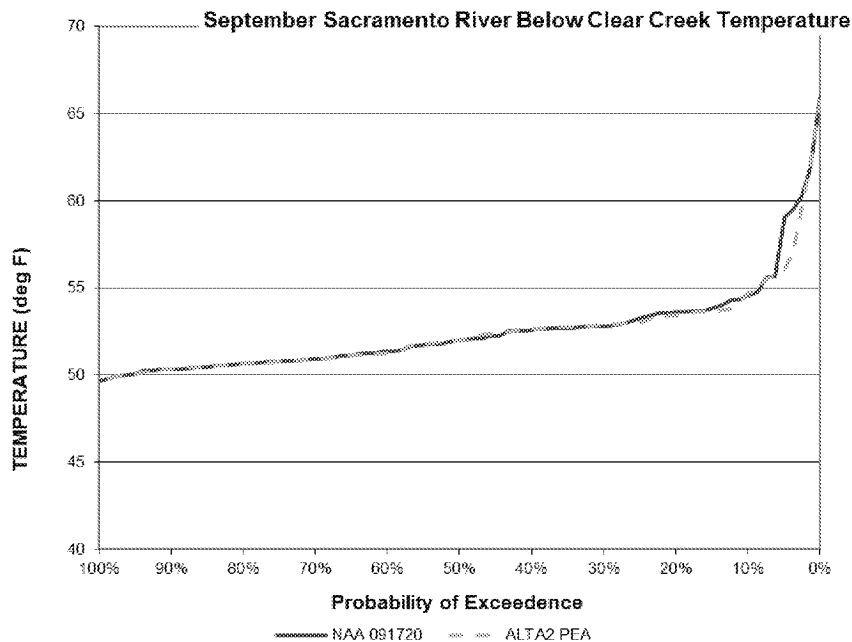
Sacramento River below Clear Creek Temperature



Sacramento River below Clear Creek Temperature



Sacramento River below Clear Creek Temperature

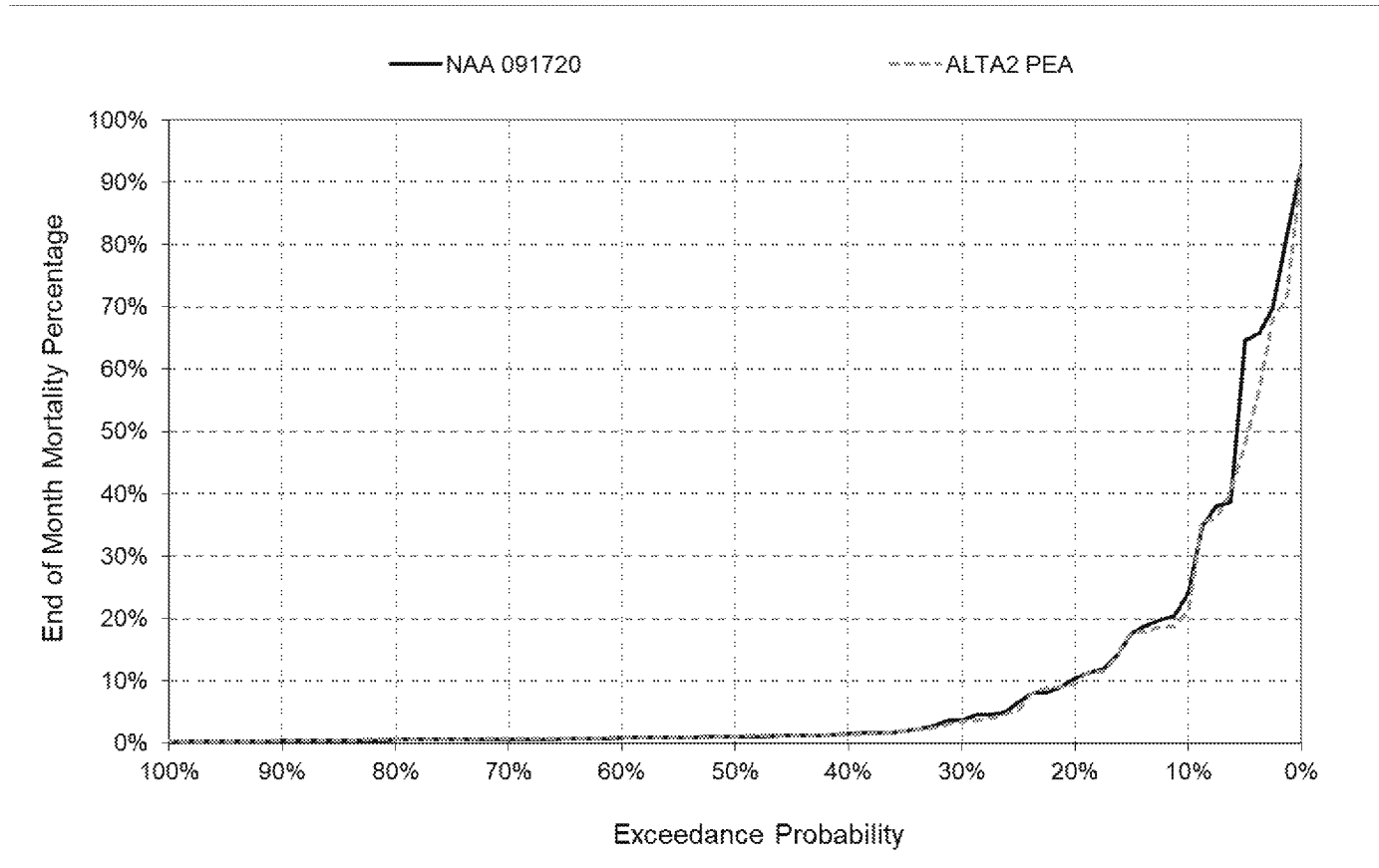


Temperature-Based Early Life Stage Mortality Results

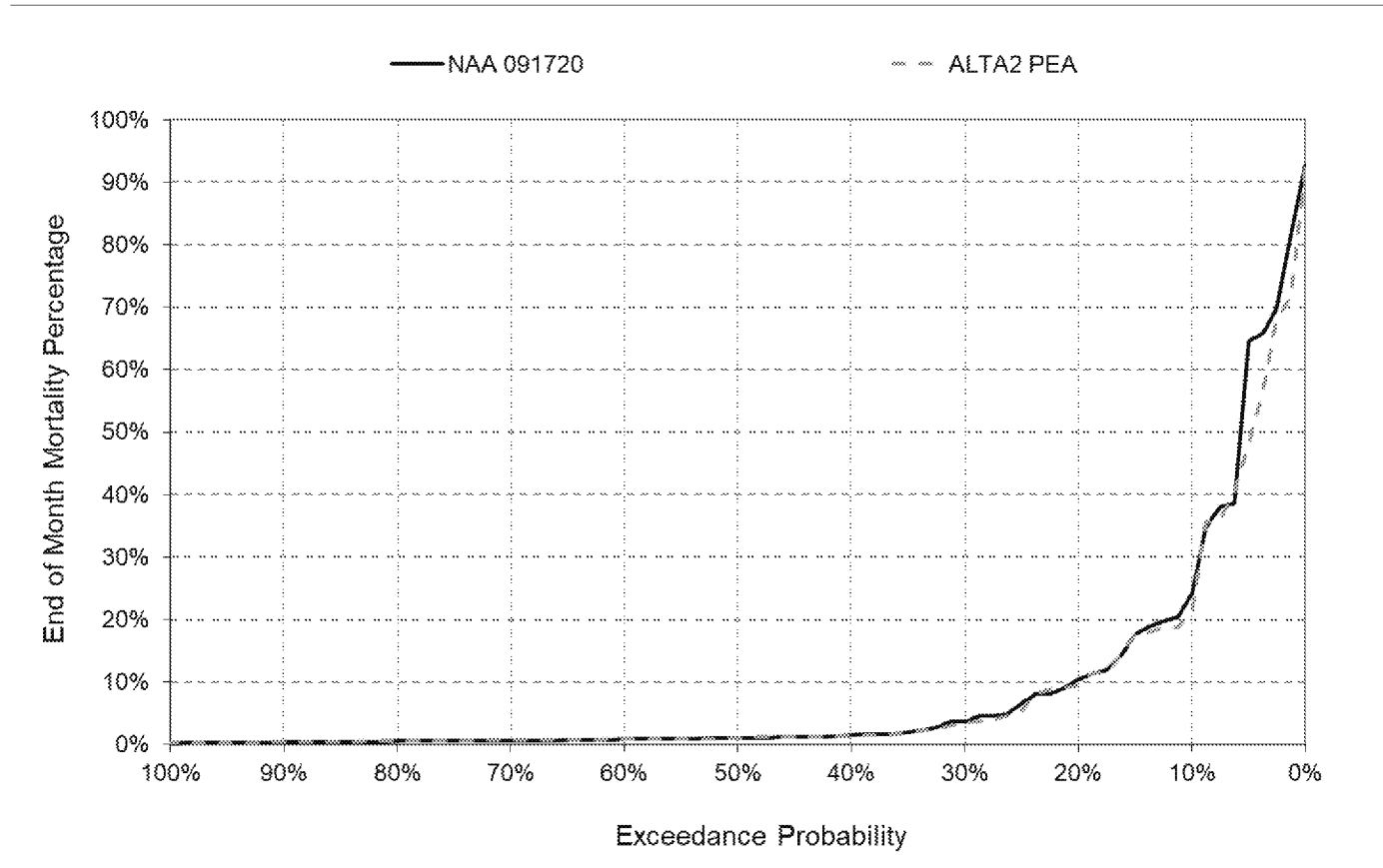
Preliminary Effects Analysis



Anderson Model Mortality



Martin Model Mortality



Questions?



Next Steps



From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/25/2020 3:41:11 PM
To: Jerry Brown [jbrown@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Talking points and PPT for Jerry

Hi,
The far right column has the “relaxed” diversion criteria used for the model results that were in the PDF’s I sent out yesterday.

Please let me know if you have any questions.

	Criteria	Alternative A2 - 91 TAF CVP OpFlex - CDFW Scenario B w/ Tisdale Weir criteria	Alternative A2 - 91 TAF CVP OpFlex - Preliminary Effects Analysis (relaxed criteria)
Baseline			
	Baseline model	RoC on LTO PA	RoC on LTO PA
Fixed Flows			
	American River	No	No
	Trinity River	Yes - All	Yes - All
Regulations (Not Sites Specific)			
	Fremont Weir	Fremont Weir Notch	Fremont Weir Notch
Sites Project Facilities			
	Sites Reservoir		
	Reservoir Capacity	1.5 MAF	1.5 MAF
	Dead Pool Size	120 TAF	120 TAF
	Dead pool transfer to TCCA in drought periods	60 TAF	60 TAF
	Red Bluff Diversion/Tehama-Colusa Canal		
	Red Bluff Diversion Capacity	2,100 cfs	2,100 cfs
	Red Bluff Bypass Flow	3,250 cfs	3,250 cfs
	Hamilton City Diversion/Glenn-Colusa Canal		
	Hamilton City Diversion Capacity	1,800 cfs	1,800 cfs
	Hamilton City Bypass Flow	4,000 cfs	4,000 cfs
	GCC Maintenance Window	2 weeks (Jan/Feb)	2 weeks (Jan/Feb)
	Dunnigan Pipeline		
	Dunnigan release capacity	1,000 cfs	1,000 cfs
	Dunnigan Pipeline endpoint	Colusa Basin Drain	Colusa Basin Drain
Regulations (Sites Specific)			
	Bend Bridge Pulse Protection	First pulse	First pulse
	Scaled Diversions	None	None
	Wilkins Slough Bypass Flow	8,000 cfs April/May; all other times, 5,000 cfs	8,000 cfs April/May; all other times, 5,000 cfs
	Fremont Weir Notch Criteria	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 5%	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 9%
	Flows into the Sutter Bypass System	Prioritize flows over Moulton, Colusa, and Tisdale Weirs within 5%	Prioritize flows over Moulton, Colusa, and Tisdale Weirs within 25%

	Freeport Bypass Flow	Modeled WaterFix Criteria (applied on a daily basis) Post-Pulse Protection (applied on a moving 7-day average) Post-Pulse (3 levels) = Jan-Mar Level 2 starts Jan 1 st Level 1 is initiated by the pulse trigger	Maintain Delta Water Quality (15,000 cfs in January; 13,000 cfs in December and February through June; 11,000 cfs all other times)
	Net Delta Outflow Index (NDOI) Prior to Project Diversions	44,500 cfs between March 1st and May 31st	None
Delivery Operations			
	CVP Operational Flexibility	91 TAF	91 TAF
	South of Delta Delivery	Delta Participants use Banks PP conveyance and Oroville storage reoperation and CVP participates with Op Flex for additional CVP water supply and Shasta Lake reoperation	Delta Participants use Banks PP conveyance and Oroville storage reoperation and CVP participates with Op Flex for additional CVP water supply and Shasta Lake reoperation
	Conveyance to Sacramento River	Dunnigan Pipeline to the Colusa Basin Drain	Dunnigan Pipeline to the Colusa Basin Drain
Sites Account Volumes (TAF)			
	PWA	1045	1045
	TCCA	100	100
	GCID	20	20
	RD 108	20	20
	Other Sac Valley	50	50
	South of Delta	855	855
	State	244	244
	Refuge L4 Deliveries	124	124
	Yolo Bypass	120	120
	Federal	91	91
	CVP OpFlex	91	91

John Spranza

D 916.679.8858 M 818.640.2487

From: Jerry Brown [mailto:jbrown@sitesproject.org]

Sent: Sunday, October 25, 2020 1:14 PM

To: Alicia Forsythe <aforsythe@sitesproject.org>

Cc: Spranza, John <John.Spranza@hdrinc.com>

Subject: Re: Talking points and PPT for Jerry

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Got it and thanks!

From: Alicia Forsythe <aforsythe@sitesproject.org>

Date: Sunday, October 25, 2020 at 11:00 AM

To: Jerry Brown <jbrown@sitesproject.org>
Cc: "John Spranza (john.spranza@hdrinc.com)" <john.spranza@hdrinc.com>
Subject: FW: Talking points and PPT for Jerry

Jerry –

You should have in your inbox the presentations that we plan to use for the 2 meetings tomorrow morning.

Below and attached are a few talking points for your 8 am coordination meeting.

- Model refinements are close to complete
 - Team is working through various iterations to understand possible project impacts
 - Initial results indicate slightly lower releases than were assumed in value planning, but it is expected numbers will come up for dry and critically dry years before model is finalized (estimated to increase by 10%) and will likely hit VP targets, with wet year numbers staying below VP estimates.
 - Initial results are showing minimal environmental impacts, if any. Coldwater pool benefits are expected to increase slightly once model is finalized – full Shasta exchanges not yet included in the model.
 - These initial results will be reviewed with the Reservoir Ops and Engineering Work Group at their next meeting.
 - The early results should be considered initial. Model refinements are not yet completed. However, early model tests have been run to keep the process and discussions moving. The results will change – but we don't expect them to change dramatically.
-
- Two multi-agency meetings to brief staff are planned for Monday 10/26:
 - The first is a general/high-level discussion of the 2020 CalSim II model updates and initial diversions, releases, Sacramento River flows and Delta Outflow results for any interested Reclamation, USFWS, NMFS and CDFW staff.
 - The second is a workshop for state and federal regulatory staff to review and discuss additional model results with the Site's aquatics team. The focus will be on assessing effects from the revised project, working through agency concerns and refining diversion criteria. For this second meeting we are having the authors of a few recent peer reviewed papers come talk to the group about if and how their recent scientific work is relevant to the Sites Project.

Let John or I know if you need additional information or have additional questions.

John – Can you remind us – what were the diversion criteria used for these initial model results?

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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Topic: **Joint Authority Board and Reservoir Committee Meeting Agenda Item 3.2** 2020 September 17

Subject: **Key Operations Modeling Refinements**

Requested Action:

Review and comment on the key refinements and new capabilities of the updated Sites Project CalSim model.

Detailed Description/Background:

During Amendment 1B, staff and consultants worked to update and improve the capability of the Sites Project CalSim model that is being used as the basis for the environmental planning, environmental permitting, and feasibility report efforts as part of Amendment 2.

As a result of project changes related to the Sites Project Value Planning Alternatives Appraisal Report as well as the October 2019 Biological Opinions on Long-term Operations of the Central Valley Project and State Water Project (ROC on LTO BiOps) and the March 2020 Incidental Take Permit for Long-term Operations of the State Water Project (SWP ITP), several refinements to the Sites Project Calsim model have been made.

Several components of the model have been refined over the past year to make the model current with regulatory and Sites Project Authority decisions. Refinements include the following:

1. Use of ROC on LTO BiOps as the baseline, with further adjustments forthcoming based on an updated SWP Delivery Capability Report (DCR) 2019 with SWP ITP actions
2. Participation levels to reflect Amendment 2
3. Facilities to reflect Value Planning changes
4. Operational changes related to the Bureau of Reclamation participation from the Federal Feasibility Report

Due to previous model limitations, the team has “tested” a number of components using post-processing methodologies – applying rules and parameters to Calsim modeling results to get an approximation without fully coding the refinements in the Sites Project Calsim model. Over the past year, the team has improved the ability of the Calsim model to refine and test a number of different scenarios in the model itself. Improved abilities in the Sites Project Calsim model include the following:

- Federal participation options have been expanded:
 - Reclamation as an exchange partner with Shasta Lake (which could also apply to Folsom Lake)
 - Reclamation as a financial participant with a storage account in Sites Reservoir (refinements made to previous assumptions)
 - No federal participation
- SWP facility coordination options have been expanded:

- Deliveries made in coordination with Oroville operations (refinements made to previous assumptions)
 - Deliveries through SWP conveyance facilities only
- South of Delta (SOD) Participant demand assumptions revised:
 - Model now explicitly tracks water deliveries to SOD Participants through the export facilities
- Diversion and environmental criteria updated:
 - Sutter Bypass weir spills (Ord Ferry, Moulton Weir, Colusa Weir, Tisdale Weir). The magnitude, duration and timing of inundation were refined and can be adjusted.
 - Fremont Weir Notch and Yolo Bypass. The magnitude, duration and timing of inundation were refined and can be adjusted.
 - Freeport bypass flow criteria options revised to allow for adjustments
 - Pulse flow protections were refined
 - Delta Outflow criteria was added
 - Red Bluff, Hamilton City, and Wilkins Slough bypass or scaled flows was refined to allow for adjustments
 - Diversion and release maintenance windows were revised
- Environmental water management flexibility:
 - Flows into Colusa Basin Drain conveyed to Cache Slough via the Knights Landing Ridge Cut (previous assumption)
 - Incremental Level 4 Refuge water supply (previous assumption)
 - Working with California Department of Fish and Wildlife to confirm and refine environmental water uses and ensure flexibility in the analysis
- Sites Project Facilities refinements to reflect Value Planning:
 - Reservoir capacity adjustments
 - Dunnigan Pipeline facilities were added

The fundamental principles of the modeling have not changed, particularly as it relates to water rights and overall diversion priorities. In general, the model assumes that Sites is a junior water rights holder and therefore can divert after all other water rights are met, including water rights, contractual obligations and Tribal trust responsibilities in the Trinity River system. In addition, diversions can only take place when environmental requirements are met and when "excess" conditions exist in the Delta. The model is being refined to remove the anomalies and correctly indicate there are no effects or impacts on the Trinity River from the Sites Project.

Initial CalSim results are being checked by the operations and fisheries team. Following the initial review, iterative model simulations will be run to assess aquatic resource and water quality effects and further refinements to diversion criteria. Full modeling results will be available for the December Reservoir Committee and Authority Board meetings.

Prior Action:

None.

Fiscal Impact/Funding Source:

None.

Staff Contact:

Ali Forsythe

Attachments:

None.

October 23, 2020

MEETING NOTICE

WATER STORAGE EXPLORATORY COMMITTEE

Board Members of the Water Storage Exploratory Committee

Director Gary Kremen, Committee Chair

Director Richard P. Santos

Director John L. Varela

Staff Support of the Water Storage Exploratory Committee

Rick Callender, Esq., Chief Executive Officer

Melanie Richardson, Assistant Chief Executive Officer

Aaron Baker, Chief Operating Officer, Water Utility

Rachael Gibson, Interim Chief of External Affairs

Sue Tippets, Interim Chief Operating Officer, Watersheds

Stanly Yamamoto, District Counsel

Brian Hopper, Senior Assistant District Counsel

Vincent Gin, Deputy Operating Officer, Water Supply Division

Christopher Hakes, Deputy Operating Officer, Dam Safety & Capital Delivery Division

Heath McMahon, Deputy Operating Officer, Water Utility Capital Division

Don Rocha, Interim Deputy Administrative Officer, Office of Government Relations

Gregory Williams, Interim Deputy Operating Officer, Raw Water Division

Emmanuel Aryee, Interim Assistant Officer, Dam Safety & Capital Delivery Division

Jerry De La Piedra, Assistant Officer, Water Supply Division

Erin Baker, Asset Management Manager

Cindy Kao, Imported Water Manager, Imported Water Unit

Ryan McCarter, Pacheco Project Manager, Pacheco Project Delivery Unit

Metra Richert, Unit Manager, Water Supply Planning & Conservation Unit

Charlene Sun, Treasury and Debt Manager

Katrina Jessop, Senior Engineer, Imported Water Unit

Andrew Garcia, Senior Water Resources Specialist, Imported Water Unit

Samantha Greene, Senior Water Resources Specialist, Water Supply Planning & Conservation Unit

A regular meeting of the Santa Clara Valley Water District (SCVWD) Water Storage Exploratory Committee is to be held on **Friday, October 30, 2020, at 12:00 p.m.** Join Zoom Meeting <https://valleywater.zoom.us/j/96324042161>.

Enclosed are the meeting agenda and corresponding materials. Please bring this packet with you to the meeting.

Enclosures



Water Storage Exploratory Committee Meeting

Join Zoom Meeting

<https://valleywater.zoom.us/j/96324042161>

Meeting ID: 963 2404 2161

One tap mobile

+16699009128,,96324042161# US

(San Jose)

Dial by your location

+1 669 900 9128 US (San Jose)

Meeting ID: 963 2404 2161



Santa Clara Valley Water District Water Storage Exploratory Committee Meeting

Via Zoom
Join Zoom Meeting
<https://valleywater.zoom.us/j/96324042161>

REGULAR MEETING AGENDA

Friday, October 30, 2020
12:00 PM

District Mission: Provide Silicon Valley safe, clean water for a healthy life, environment and economy.

**WATER STORAGE EXPLORATORY
COMMITTEE**

Gary Kremen, Chair, District 7
Richard P. Santos, District 3
John L. Varela, District 1

All public records relating to an item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the Office of the Clerk of the Board at the Santa Clara Valley Water District Headquarters Building, 5700 Almaden Expressway, San Jose, CA 95118, at the same time that the public records are distributed or made available to the legislative body. Santa Clara Valley Water District will make reasonable efforts to accommodate persons with disabilities wishing to attend the committee meeting. Please advise the Clerk of the Board Office of any special needs by calling (408) 265-2600.

JERRY DE LA PIEDRA
Committee Liaison

GLENNA BRAMBILL
Management Analyst II
Office/Clerk of the Board
(408) 630-2408
gbrambill@valleywater.org
www.valleywater.org

Note: The finalized Board Agenda, exception items and supplemental items will be posted prior to the meeting in accordance with the Brown Act.

**Santa Clara Valley Water District
Water Storage Exploratory Committee**

**REGULAR MEETING
AGENDA**

Friday, October 30, 2020

12:00 PM

Via Zoom

IMPORTANT NOTICES

This meeting is being held in accordance with the Brown Act as currently in effect under the State Emergency Services Act, the Governor's Emergency Declaration related to COVID-19, and the Governor's Executive Order N-29-20 issued on March 17, 2020 that allows attendance by members of the Committee, staff, and the public to participate and conduct the meeting by teleconference, videoconference, or both.

Members of the public wishing to address the Committee during a video conferenced meeting on an item not listed on the agenda, or any item listed on the agenda, should use the "Raise Hand" or "Chat" tools located in Zoom meeting link listed on the agenda. Speakers will be acknowledged by the Committee Chair in the order requests are received and granted speaking access to address the Committee.

Santa Clara Valley Water District (Valley Water) in complying with the Americans with Disabilities Act (ADA), requests individuals who require special accommodations to access and/or participate in Valley Water Committee meetings to please contact the Clerk of the Board's office at (408) 630-2711, at least 3 business days before the scheduled meeting to ensure that Valley Water may assist you.

This agenda has been prepared as required by the applicable laws of the State of California, including but not limited to, Government Code Sections 54950 et. seq. and has not been prepared with a view to informing an investment decision in any of Valley Water's bonds, notes or other obligations. Any projections, plans or other forward-looking statements included in the information in this agenda are subject to a variety of uncertainties that could cause any actual plans or results to differ materially from any such statement. The information herein is not intended to be used by investors or potential investors in considering the purchase or sale of Valley Water's bonds, notes or other obligations and investors and potential investors should rely only on information filed by Valley Water on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System for municipal securities disclosures and Valley Water's Investor Relations website, maintained on the World Wide Web at <https://emma.msrb.org/> and <https://www.valleywater.org/how-we-operate/financebudget/investor-relations>, respectively.

1. Roll Call.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON THE AGENDA.

Notice to the Public: Members of the public who wish to address the Committee on any item not listed on the agenda should access the "Raise Hand" or "Chat" tools located in Zoom meeting link listed on the agenda. Speakers will be acknowledged by the Committee Chair in order requests are received and granted speaking access to address the Committee. Speakers comments should be limited to two minutes or as set by the Chair. The law does not permit Committee action on, or extended discussion of, any item not on the agenda except under special circumstances. If Committee action is requested, the matter may be placed on a future agenda. All comments that require a response will be referred to staff for a reply in writing. The Committee may take action on any item of business appearing on the posted agenda.

3. APPROVAL OF MINUTES:

- 3.1. Approval of Minutes. 20-0962
- Recommendation: Approve the October 14, 2020, Meeting Minutes.
- Manager: Michele King, 408-630-2711
- Attachments: Attachment 1: 10142020 WSEC DRAFT Mins
- Est. Staff Time: 5 Minutes

4. ACTION ITEMS:

- 4.1. Update on Sites Reservoir Project: Second Amendment to 2019 Reservoir Project Agreement for Continued Participation. 20-0838
- Recommendation:
- A. Receive update and report on the Sites Reservoir Project,
 - B. Recommend to Board to authorize the Chief Executive Officer to execute the Second Amendment to 2019 Reservoir Project Agreement with Sites Project Authority and the Project Agreement Members for a minimum participation level of 3.2 percent of the total project and a minimum funding commitment of up to \$0.78 Million, and,
 - C. Recommend to Board to direct Valley Water staff to continue engagement in Sites Reservoir Committee and negotiate future parameters for participation.
- Manager: Vincent Gin, 408-630-2633
- Attachments: Attachment 1: Second Amendment to 2019 Agreement
Attachment 2: WSEC Q-A 0192020
Attachment 3: Risk Mitigation Table
Attachment 4: Project Participation Summary
Attachment 5: Powerpoint
- Est. Staff Time: 15 Minutes

- 4.2. Update on Los Vaqueros Reservoir Expansion Project: Joint Powers Authority, Usage Fees, and South Bay Aqueduct. 20-0963
- Recommendation: Receive and discuss information regarding the creation of a Joint Powers Authority for the construction and operation of the Los Vaqueros Reservoir Expansion Project, proposed usage fees charged by Contra Costa Water District for the use of their facilities, and the South Bay Aqueduct.
- Manager: Jerry De La Piedra, 408-630-2257
- Attachments: Attachment 1: Draft JPA Agreement
Attachment 2: CCWD Usage Fees Presentation
Attachment 3: Staff Presentation
- Est. Staff Time: 15 Minutes
- 4.3. Pacheco Reservoir Expansion/San Luis Low Point Improvement Projects Update 20-0964
- Recommendation: Receive and discuss information regarding status of the Pacheco Reservoir Expansion/San Luis Low Point Improvement Projects. This is an information-only item and no action is required.
- Manager: Christopher Hakes, 408-630-3796
- Attachments: Attachment 1: PowerPoint
- Est. Staff Time: 15 Minutes
- 4.4. Potential Water Storage Projects (Comparison Matrix). 20-0979
- Recommendation: Receive and discuss draft comparison matrix of potential storage projects to diversify from Semitropic groundwater bank.
- Manager: Vincent Gin, 408-630-2633
- Attachments: Attachment 1: Matrix Comparison of Storage Projects-2
Attachment 2: Storage Projects Objectives and Evaluation Criteria
- Est. Staff Time: 15 Minutes

4.5. Standing Items Information.

20-0965

- Recommendation:
- A. This agenda item allows the Committee to receive verbal or written updates and discuss the following subjects. These items are generally informational; however, the Committee may request additional information from staff:
 - B. This is informational only and no action is required. *Staff may provide a verbal update at the 10-30-2020, meeting if there is reportable/updated information.*
 - 1. Update on Los Vaqueros Reservoir Expansion Project (LVE) Transfer Bethany Pipeline (TBP) and Update on Management of South Bay Aqueduct (SBA) Facilities (10-30-2020, agenda item)
 - 2. Lake Del Valle
 - 3. Del Puerto
 - 4. Water Banking Opportunities including but not limited to Pleasant Valley Water District (10-30-2020, agenda item)
 - 5. Pacheco/San Luis Reservoir Low Point (discuss Pacheco Authority and Proposition 1 Water Storage Investment Program Update) (10-30-2020, agenda item)
 - 6. Semitropic
 - 7. Sites (10-30-2020, agenda item)
 - 8. B.F. Sisk Dam Raise Project
 - 9. Shasta

Manager: Michele King, 408-630-2711

Est. Staff Time: 10 Minutes

4.6. Review Water Storage Exploratory Committee Work Plan and the Committee's Next Meeting Agenda.

20-0966

Recommendation: Review the Committee's Work Plan to guide the Committee's discussions regarding policy alternatives and implications for Board deliberation.

Manager: Michele King, 408-630-2711

Attachments: Attachment 1: WSEC 2020 Work Plan

Est. Staff Time: 5 Minutes

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE REQUESTS.

This is an opportunity for the Clerk to review and obtain clarification on any formally moved, seconded, and approved requests and recommendations made by the Committee during the meeting.

6. CLOSED SESSION:

- 6.1. EXISTING LITIGATION – Government Code Section 54956.9(d)(1) SCVWD v. Edmund Jin, et al., Santa Clara Co. Superior Court, No. 19CV352227
- 6.2. CONFERENCE WITH LEGAL COUNSEL - INITIATION OF LITIGATION Pursuant to Government Code Section 54956.9(d)(4) – Two Potential Cases
- 6.3. District Counsel Report on Closed Session.

7. ADJOURN:

- 7.1. Adjourn.



Santa Clara Valley Water District

File No.: 20-0962

Agenda Date: 10/30/2020
Item No.: 3.1.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Approval of Minutes.

RECOMMENDATION:

Approve the October 14, 2020, Meeting Minutes.

SUMMARY:

A summary of Committee discussions, and details of all actions taken by the Committee, during all open and public Committee meetings, is transcribed and submitted for review and approval.

Upon Committee approval, minutes transcripts are finalized and entered into the District's historical records archives and serve as historical records of the Committee's meetings.

ATTACHMENTS:

Attachment 1: 10142020 WSEC Draft Mins

UNCLASSIFIED MANAGER:

Michele King, 408-630-2711

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Page 10



SANTA CLARA VALLEY WATER DISTRICT (VALLEY WATER)
WATER STORAGE EXPLORATORY COMMITTEE

DRAFT MINUTES

WEDNESDAY, OCTOBER 14, 2020
1:00 PM

(Paragraph numbers coincide with agenda item numbers)

A regular meeting of the Water Storage Exploratory Committee (Committee) was held on October 14, 2020, via Zoom.

1. CALL TO ORDER

The Water Storage Exploratory Committee was called to order by Chair Director Gary Kremen at 1:01 p.m.

1.1 ROLL CALL

Board Members in attendance were: Director Gary Kremen-District 7, Director Richard P. Santos-District 3, and Director John L. Varela-District 1.

Valley Water Staff in attendance were: Emmanuel Aryee, Aaron Baker, Erin Baker, Glenna Brambill, Debra Butler, Keila Cisneros, Andrew Garcia, Vincent Gin, Christopher Hakes, Brian Hopper, Cindy Kao, Michele King, Kathleen Low, Michael Martin, Ryan McCarter, Heath McMahon, Metra Richert, Donald Rocha, Eli Serrano, Ranithri Slayton, Charlene Sun and Beckie Zisser.

Guests in attendance were: John Weed (Alameda County Water District-ACWD), Maureen Martin, Ph.D., and Marguerite Patil (Contra Costa Water District-CCWD), Steve Jordan and Danielle McPherson (BAWSCA), Laura Reeves (Tanner Pacific, Inc.).

Public in attendance were: Director Tony Estremera and Director Linda J. LeZotte (Valley Water), Renee Crawford, Phil Gregory, Chuck Hammerstad, Doug Muirhead, and CM Tompkison.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON AGENDA

There was no one present who wished to speak.

Attachment 1
Page 1 of 4

3. APPROVAL OF MINUTES

3.1 APPROVAL OF MINUTES

It was moved by Director John L. Varela, seconded by Director Richard P. Santos, and unanimously carried to approve the minutes of the August 21, 2020, meeting of the Water Storage Exploratory Committee as presented by roll call vote and all Directors voting yes.

4. ACTION ITEMS

4.1 SEMITROPIC GROUNDWATER BANK UPDATE

Ms. Cindy Kao and Mr. Andrew Garcia reviewed the materials as outlined in the agenda item.

The Committee (Directors Kremen, Santos and Varela) discussed the following: interplay between the GSA-Water Storage District, Kern County Water Authority and regulatory/political structure of the bank and who owns what, GSP, contract expiration 2035, 123-TCP's/PFAS/water quality, need a closed session to discuss the legal issues/concerns, balance sheets/purchases, contaminants/canal standards, Semitropic's obligation to share that the water is viable, additional cost effective water banking programs, meetings with user groups/participants/partnerships, SGMA, and potentially going on a visit or meeting with Semitropic-building relationships (zoom meeting).

Mr. John Weed noted DWR's work around process with zero allocation events, semitropic water delivered (drought years), and credit for water pumped and being able to take credit from San Luis. Secondly, water from semitropic is not going to local consumer but rather it is going south.

Ms. Cindy Kao, Mr. Vincent Gin and Mr. Brian Hopper were available to answer questions.

The Committee took no action.

4.2 POTENTIAL GROUNDWATER BANKING PROJECTS (COMPARISON MATRIX)

Mr. Andrew Garcia reviewed the materials as outlined in the agenda item

The Committee (Directors Kremen, Santos and Varela) discussed the following: ratings/water quality, criteria, contractual controls/political/regulatory, reservoir projects participation/transferability, costly decisions to make, updating the matrix as much as possible (evaluate wider range of investments of the portfolio, expand framework and criteria) for the next meeting, and commended staff for these presentations.

Mr. John Weed encouraged the Committee to contact Irvine Ranch WD, which bailed on Semi-Tropic and purchased land for a fully controlled (owned) Water Bank. He suggested modeling this approach.

Ms. Cindy Kao, Mr. Vincent Gin, and Mr. Aaron Baker were available to answer questions.

The Committee took no action.

4.3 STANDING ITEMS REPORT

Ms. Glenna Brambill reviewed the materials as outlined in the agenda item.

Ms. Metra Richert reported on the following:

On October 30, 2020: Staff is bringing an update on LVE and the following:

- updated usage fee proposal
- preliminary draft JPA formation documents
- SBA update
- Recommendation from Committee in July-staff is bringing Amendment 2 to 2019 multi-party agreement for Board's consideration on November 10, 2020.

Ms. Cindy Kao reported on the following:

- No update on Lake Del Valle
- No update on Del Puerto
- Sites Reservoir Project is coming to the Committee on October 30, 2020
- B. F. Sisk Dam Raise Project:
 - Public comments on DEIR/EIS came out (due September 28, 2020), State Water Contractors/Department of Water Resources (DWR) submitted critical comments expressing concerns on potential impacts to the State Water Project's supply and safety of dam project's schedule and integrity. Project proponents including the San Luis and Delta Mendota Water Authority (Authority) and Bureau are responding to those comments. The Bureau and Authority are revising their feasibility report and are not planning on providing public draft for review but are planning on submitting feasibility report to meet WIIN Act deadline year-end (request to include 'comments' in Non-Agenda Packet)
- Shasta:
 - 18.5 feet increase reservoir by up to 634,000 acre-feet (af)
 - The Bureau put out a supplemental EIS for public comment (due October 5, 2020)
 - California Attorney General submitted comment letter claiming Reclamation is misinterpreting state law threatening the McCloud River and salmon liability Reclamation disagrees and is working on responding to those comments

4.4 REVIEW WATER STORAGE EXPLORATORY COMMITTEE WORK PLAN AND THE COMMITTEE'S NEXT MEETING AGENDA

Ms. Glenna Brambill reviewed the materials as outlined in the agenda item.

The following agenda items are coming to the October 30, 2020, meeting: LVE, Sites, Pacheco/San Luis Reservoir and Potential Groundwater Banking Projects comparison matrix.

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE ACTIONS

Ms. Glenna Brambill noted there were no action items for Board consideration.

6. ADJOURNMENT

Chair Director Gary Kremen adjourned the meeting at 2:01 p.m. to the next scheduled meeting, Friday, October 30, 2020, at 12:00 p.m.

Glenna Brambill
Board Committee Liaison
Office of the Clerk of the Board

Approved:



Santa Clara Valley Water District

File No.: 20-0838

Agenda Date: 10/30/2020
Item No.: 4.1.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Update on Sites Reservoir Project: Second Amendment to 2019 Reservoir Project Agreement for Continued Participation.

RECOMMENDATION:

- A. Receive update and report on the Sites Reservoir Project,
- B. Recommend to Board to authorize the Chief Executive Officer to execute the Second Amendment to 2019 Reservoir Project Agreement with Sites Project Authority and the Project Agreement Members for a minimum participation level of 3.2 percent of the total project and a minimum funding commitment of up to \$0.78 Million, and,
- C. Recommend to Board to direct Valley Water staff to continue engagement in Sites Reservoir Committee and negotiate future parameters for participation.

SUMMARY:

On August 21, 2020 and July 13, 2020, the Santa Clara Valley Water District's Water Storage Exploratory Committee (Committee) received and discussed updates on the Sites Reservoir Project (Sites Project). The Committee requested staff to provide additional information on the Second Amendment to 2019 Reservoir Project Agreement with Sites Project Authority (Attachment 1, Second Amendment) and evaluation of Valley Water's level of participation including the lowest level of participation in the Sites Project. A summary of responses to address the Committee's comments and questions posed at the August Committee meeting is provided as Attachment 2. Execution of the Second Amendment would obligate Valley Water to contribute funds to support continued Phase 2 work activities from June 2020 through December 2021 (Phase 2, Years 2 and 3) based on a specific participation level. The Sites Project Authority requested a decision on project participation from Valley Water by November 2020.

The Sites Project is a proposed off-stream reservoir that would be located north-of-Delta (NOD), approximately 10 miles west of the town of Maxwell in Colusa County. Valley Water's Water Supply Master Plan (WSMP) identifies this project as a potential alternative to help secure Delta-conveyed supplies. As with any large infrastructure project in California, there are a variety of risks and challenges associated with development, permitting, and future operations. A summary of major project risks, challenges, and mitigation measures is provided in Attachment 3.

The Second Amendment will fund completion and release of draft EIR/EIS documents for public comment, development of guidelines for coordinated operations of the Sites Project with the State Water Project and Central Valley Project, negotiations with regulatory agencies on permit approvals,

evaluation of water rights issues, and further development of Sites Project policies and governance. The next phase will also be critical in satisfying requirements to secure funding from the Proposition 1 Water Storage Investment Program (Proposition 1). Should Valley Water decline and withdraw participation, it may be possible to rejoin in the future if there is unsubscribed participation in the Project, however reinstating first priority rights to the project benefits would be subject to approval of the Sites Project Reservoir Committee (Reservoir Committee).

Recommended Participation Level

The Sites Project Authority has not set a minimum participation level for the project. Valley Water board members have expressed an interest in developing opportunities to join the Sites Project Authority, a Joint Powers Authority, in order to better manage Valley Water’s investment in the project, while some Sites Project Authority members have expressed a desire to maintain local control of the Sites Project. If Valley Water continues to seek a seat on the Sites Project Authority, staff recommends continuing participation in the Sites Project at a participation level of at least 7,800 acre-foot (AF), identified as Option A in prior staff presentations and below in Table 1.

Option A would result in a reduction in funding commitment and yield while still sustaining participation at 3.2 percent of total project cost, thereby maintaining Valley Water’s support for the project. A 7,800 AF participation level would commit Valley Water to \$0.78 million in funding contributions through December 2021 and would be slightly lower than that of the top third of participants. Option A would provide Valley Water a low but reasonable amount of water supply (roughly 5,000 acre-feet delivered and 45,000 acre-feet of storage) that could justify the ongoing administrative cost necessary for proper engagement with the project to assure effective project operations and management.

Table 1: Comparison of Participation Options

	Last Board Decision (February 26, 2019) -- larger project no longer pursued	Option A	Option B
		Maintain 3.2% of Participation in Total Project	Maintain Estimated Share of Project Yield
PROJECT DESCRIPTION			
Total Capital Cost (2019 Dollars)	\$6 Billion	\$3 Billion	\$3 Billion
Reservoir Size (MAF)	1.8	1.5	1.5
Total Estimated Project Annual Yield (AF)	500,000	240,000	240,000
PARTICIPATION SIZE			
Valley Water Share of Total Project Cost and Benefit	3.20%	3.20%	6.60%

Valley Water Participation Request (AF) ²	16,000	7,800	16,000
Valley Water Participation amongst Project Agreement Members	8.30%	4.10%	8.30%
PRELIMINARY ESTIMATED BENEFITS (STORAGE AND YIELD)			
Valley Water Average Delivered Yield (AF) ³	11,100	4,700 to 6,100	9,600 to 12,400
Valley Water Average Dry/Critical (Drier) Year Delivered Yield (AF) ³	21,500	6,500 to 8,200	13,200 to 16,800
Valley Water Storage Share (AF)	55,000	45,000	90,000
FUNDING			
Valley Water Share of Total Capital Cost (2019 Dollars)	\$192 Million	\$97 Million	\$195 Million
Valley Water Share of Total Capital Cost (Fully Inflated Dollars) ⁴	\$242 Million	\$125 Million	\$255 Million
Estimated Levelized Unit Cost (constant 2020 dollars per AF of delivered yield) ⁵	Not available	\$600/AF - \$800/AF	\$600/AF - \$800/AF
Valley Water Funding Commitment	\$0.96 Million	\$0.78 Million	\$1.60 Million

¹ Capital cost were reported in 2015 dollars at the February 26, 2019 Board meeting and are escalated to 2019 dollars in this report. The previously reported 2015 dollar values were \$5.5 billion for the total project and \$177 million for Valley Water's 3.2% share of a 1.8 MAF reservoir project.

² Value requested and used by Sites Project managers to calculate participation levels relative to other participants. Actual annual yield of the project will differ from participation level.

³ Delivered yields assume a 25% carriage water loss.

⁴ Total Capital Cost published by the Sites Project were fully inflated by Valley Water financial staff to determine estimated construction costs.

⁵ Levelized unit cost of water is the cost that, if assigned to every acre-foot of water produced (or saved) by the project over the operational period, will produce sufficient revenue to recover the cost of the project in present value terms. Calculated using Valley Waters 100-year operational period and inputs based on Sites Value Planning Report financial model.

Project Funding

Execution of the Second Amendment would obligate Valley Water to provide funding for continued work on Phase 2 of the Sites Project and provide Valley Water with a continuing seat on the Reservoir Committee through December 2021. The total Phase 2 Years 2 and 3 budget, is roughly \$40 million, of which about \$19 million is to be funded by water user participants that comprise the

Reservoir Committee. The remaining budget is expected to be funded using Proposition 1 early funding and funds secured from provisions under the Water Infrastructure Improvements for the Nation Act. To date, all of existing participants except Valley Water have agreed to continue participation in the project. Attachment 4 lists the existing participants and their requested yields as well as two new potential participants.

The allocation of costs to the Reservoir Committee members is outlined in the Second Amendment. Maintaining Valley Water's participation level of 3.2 percent of total project, Option A, would commit Valley Water to provide \$0.78 million in funding; a participation level of 6.6 percent of total project, Option B, would commit Valley Water to provide \$1.6 million in funding. This correlates to a commitment by Valley Water of \$100 dollars in funding per each incremental 1 AF in participation request. The FY2021 Imported Water Program, Project No. 91131004 budget, includes \$1.6 million to support continued participation in this project.

ATTACHMENTS:

- Attachment 1: Second Amendment
- Attachment 2: Responses to WSEC Comments and Questions
- Attachment 3: Major Project Risk, Challenges, and Mitigation Table
- Attachment 4: Project Participation Summary
- Attachment 5: PowerPoint

UNCLASSIFIED MANAGER:

Vincent Gin, 408-630-2633

SECOND AMENDMENT TO 2019 RESERVOIR PROJECT AGREEMENT

BY AND AMONG
SITES PROJECT AUTHORITY

and

THE PROJECT AGREEMENT MEMBERS LISTED HEREIN

Dated as of July 1, 2020

THIS SECOND AMENDMENT TO 2019 RESERVOIR PROJECT AGREEMENT (this “Second Amendment”), dated as of July 1, 2020, by and among SITES PROJECT AUTHORITY, a joint powers authority duly organized and existing under the laws of the State of California (the “Authority”), and the project agreement members listed in the Agreement referenced below (the “Project Agreement Members”) and amends that certain 2019 Reservoir Project Agreement dated as of April 1, 2019 (the “Original Agreement”), as previously amended by the First Amendment to 2019 Reservoir Project Agreement dated as of January 1, 2020 (the “First Amendment” and, together with the Original Agreement, the “Agreement”), each by and among the Authority and the Project Agreement Members;

WITNESSETH:

WHEREAS, Authority and the Project Agreement Members have determined to approve an Amendment 2 Work Plan and to extend the term of the Agreement to December 31, 2021; and

WHEREAS, under Section 11 of the Agreement, the Agreement may be amended by a writing executed by the Authority and at least 75% of the total weighted vote of the then current Committee members as provided in Subsection 3(g); and

WHEREAS, all acts, conditions and things required by law to exist, to have happened and to have been performed precedent to and in connection with the execution and the entering into of this Second Amendment do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the parties hereto are now duly authorized to execute and enter into this Second Amendment;

NOW, THEREFORE, THIS SECOND AMENDMENT WITNESSETH, the Authority and the Project Agreement Members agree, as follows:

ARTICLE I

DEFINITIONS

Section 1.01. **Definitions.** All capitalized terms not otherwise defined herein shall have the meaning set forth in the Agreement.

ARTICLE II

AMENDMENTS TO AGREEMENT

Section 2.01. **Project Agreement Members.**

(a) Effective September 1, 2020, the Project Agreement Members attached as Exhibit A to the Agreement shall be succeeded in their entirety by the Project Agreement Members attached hereto as Exhibit A.

Section 2.02. **Work Plan.**

(a) Effective September 1, 2020, the 2019 Work Plan attached as Exhibit B to the Agreement shall be supplemented by the Work Plan attached hereto as Exhibit B (the “Amendment 2 Work Plan”).

Section 2.03. **Funding.**

The Agreement is hereby amended to remove Section 4(a) in its entirety and replace it with the following:

“(a) **Budget.** The Committee shall, in cooperation with the Authority’s Board, provide and approve both a Fiscal Year operating budget and reestablish a Phase 2 budget target, annually or more frequently as needed. The Project Agreement Members shall contribute their respective pro-rata share of the budgeted sums reflected in the 2019 Work Plan (prior to November 1, 2020) and the Amendment 2 Work Plan (on and after November 1, 2020) in accordance with Section 5 of this Project Agreement; provided, however, that in no event shall the amount paid by a Project Agreement Member exceed \$160 per acre-foot (with \$60 of such amount being attributable to the 2019 Work Plan and \$100 of such amount being attributable to the Amendment 2 Work Plan) without the approval of such Project Agreement Member. The contribution with respect to the pro-rata budgeted sums reflected in the Amendment 2 Work Plan shall be payable by each Project Agreement Member in two installments. The first installment shall be in an amount equal to \$60 per acre-foot and shall be payable by no later than November 1, 2020. The second installment shall be in an amount up to \$40 per acre-foot and shall be payable by no later than April 1, 2021. The exact amount per acre-foot of the second installment shall be established by the Committee, in cooperation with the Authority’s Board, and notice of such amount shall be provided by the Authority to each Project Agreement Member.”

Section 2.04. **Future Development of the Sites Reservoir Project.**

The Agreement is hereby amended to remove Section 6(b) in its entirety and replace it with the following:

“(b) Without limiting the foregoing, any Project Agreement Member that elects to continue participating in the development, financing, and construction of the Sites Reservoir Project to the time when the Authority offers contracts for a water supply or other services, will be afforded a first right, equal to that Project Agreement Member’s Participation Percentage, to contract for a share of any water supply that is developed, and for storage capacity that may be available from, the Sites Reservoir Project. In any successor phase agreements, Project Agreement Members who are parties to this Project Agreement that submitted a proposal to participate before February 28, 2019, shall be granted rights to contract for a share, in an amount equal to that Project Agreement Member’s Participation Percentage as of the effective date of such successor phase agreement, of any water supply that is developed, and for storage capacity that may be available from the Sites Reservoir Project prior to the rights of those becoming parties to this Project Agreement after that date.

If a participating Project Agreement Member as of February 28, 2019 identifies a lesser amount in the Second Amendment than its Original Agreement requested amount, that participating Project Agreement Member’s first rights of refusal in the future are to be based on the Second Amendment amounts and not the February 28, 2019 amounts.

Provided, however, that if a Project Agreement Member withdraws from the Project Agreement pursuant to Section 9 of this Agreement but later requests to be reinstated, then to the extent there is unsubscribed participation in the Project as determined by the Committee, the

Committee may vote to readmit said withdrawn Member with a reinstated first right of refusal provided said withdrawing Member provides funding to the Project commensurate with the funding requirements met by all current Project Agreement Members in the current phase of the Project as well as any prior phase, as adjusted for any credits, payments and/or reimbursements made under the Authority's credit reimbursement policy (the "Credit Reimbursement Policy").

Further provided, that if a Project Agreement Member desires to increase its participation after execution of the Second Amendment, then to the extent there is unsubscribed participation in the Project as determined by the Committee, the Committee may vote to approve said increase, or portion thereof, with a first right of refusal attendant thereto, provided said increasing Project Agreement Member provides funding to the Project commensurate with the funding requirements met by all current Project Agreement Members in the current phase of the Project as well as any prior phase, as adjusted for any credits, payments and/or reimbursements made under the Credit Reimbursement Policy.

The Authority and the Project Agreement Members will cooperate on the drafting of provisions in the water supply contract that will allow a Project Agreement Member or other eligible entity that commits to purchase a Sites Reservoir Project water supply to transfer water that the entity may not need from time to time on terms and conditions acceptable to the Project Agreement Member."

Section 2.05. **Term.** The Agreement is hereby amended to remove Section 8(b) in its entirety and replace it with the following:

"(b) The term of this Project Agreement shall continue until December 31, 2021. In the event that this Second Amendment is not approved by Project Agreement Members with the requisite percentage of the total weighted vote as set forth in the Agreement by June 30, 2020, the Agreement shall be revived immediately upon approval by such requisite percentage, without any additional approval of the Project Agreement Members, and this Second Amendment shall become effective."

Section 2.06. **Executive Director.** All references to the "General Manager" in the Agreement shall be changed to "Executive Director."

ARTICLE III

PROJECT AGREEMENT MEMBER PARTICIPATION

Section 3.01. **Project Agreement Participation.** Each Project Agreement Member shall specify its participation in the Sites Reservoir Project by indicating its elected water participation amount in the Sites Reservoir Project and the associated cost in the space provided therefor on the signature page to this Second Amendment. Based upon the respective participation elections of the Project Agreement Members, the Authority shall update Exhibit A pursuant to Section 5 of the Agreement.

ARTICLE IV

MISCELLANEOUS

Section 4.01. **Effectiveness of Agreement.** Except as expressly amended by this Second Amendment, the Agreement is hereby ratified and confirmed and shall continue in full force and effect in accordance with the terms and provisions thereof. The amendments set forth in this Second Amendment shall be incorporated as part of the Agreement upon their effectiveness in accordance with Section 11 of the Agreement.

Section 4.02. **Execution in Several Counterparts.** This Second Amendment may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the Authority and the Project Agreement Members shall preserve undestroyed, shall together constitute but one and the same instrument.

Section 4.03. **Authorization, Ratification and Confirmation of Certain Actions.** The Authority and the Project Agreement Members each hereby authorize, ratify and confirm the extension of the term of the Agreement, as previously extended pursuant to the First Amendment, to June 30, 2020, and the expenditure of funds collected under the Agreement with respect to the 2019 Work Plan on and prior to June 30, 2020.

Section 4.04. **Laws Governing Second Amendment.** The effect and meaning of this Second Amendment and the rights of all parties hereunder shall be governed by, and construed according to, the laws of the State.

IN WITNESS WHEREOF, the Authority and Project Agreement Members hereto, pursuant to resolutions duly and regularly adopted by their respective governing bodies, have caused their names to be affixed by their proper and respective officers on the date shown below:

Dated: _____

SITES PROJECT AUTHORITY

By: _____

Name:

Title:

[PROJECT AGREEMENT MEMBER]

Dated: _____

(Authority & Project Agreement Member)

By: Santa Clara Valley Water District

Name: Rick L. Callender, Esq.

Title: Chief Executive Officer

PARTICIPATION AMOUNT

[PROJECT AGREEMENT MEMBER] hereby elects to participate in the Sites Reservoir Project in the amount and at the cost identified below.

**Participation
(Second Amendment
Annualized Acre-Foot):**

**Second Amendment Cost:
Not to Exceed \$100 per
Acre-Foot**

EXHIBIT A

PROJECT AGREEMENT MEMBERS

Participant	Participation (Second Amendment Annualized Acre-Foot)	
	Preliminary	Percent
American Canyon, City of		
Antelope Valley-East Kern Water Agency		
Carter Mutual Water Company #		
Coachella Valley Water District		
Colusa County		
Colusa County Water District		
Cortina Water District		
Davis Water District		
Desert Water Agency		
Dunnigan Water District		
Glenn-Colusa Irrigation District		
LaGrande Water District		
Metropolitan Water District of S. CA		
Pacific Resources Mutual Water Company #		
Reclamation District 108		
San Bernardino Valley Municipal Water District		
San Geronio Pass Water Agency		
Santa Clara Valley Water District		
Santa Clarita Valley Water Agency		
Westside Water District		
Wheeler Ridge-Maricopa Water Storage District		
Zone 7 Water Agency		
Potential new participants		
Total:		

Participation Percentages exclude State of California and United States Bureau of Reclamation share of the Project.

Denotes a non-public agency. Refer to California Corporations Code Section 14300 et. seq. with additional requirements provided in both the Public Utilities Code and Water Code.

EXHIBIT B
AMENDMENT 2 WORK PLAN

Exhibit B
Reservoir Committee
2020 and 2021 Work Plan

Reservoir Committee Annual Budget for FY 2020 and FY 2021 (\$000)

	Subject Area	2020	2021	Total
Revenue	Beginning Balance	\$6,847	\$0	\$6,847
	Participation Revenue	\$11,520	\$7,680	\$19,200
	Federal Revenue	\$0	\$4,000	\$4,000
	State Revenue	\$5,134	\$5,502	\$10,636
Revenue Total		\$23,501	\$17,182	\$40,683
Expenses	Permitting	(\$2,558)	(\$5,011)	(\$7,569)
	Early Mitigation	(\$243)	(\$2,257)	(\$2,500)
	Environmental Planning	(\$3,511)	(\$2,376)	(\$5,887)
	Operations Modeling	(\$3,486)	(\$536)	(\$4,022)
	Engineering	(\$4,360)	(\$2,180)	(\$6,540)
	Geotechnical	(\$1,142)	(\$2,003)	(\$3,145)
	Real Estate	(\$145)	(\$272)	(\$417)
	Communications	(\$489)	(\$579)	(\$1,068)
	Project Controls	(\$1,333)	(\$1,528)	(\$2,861)
	Funding	(\$777)	(\$590)	(\$1,367)
	Growth	(\$819)	(\$910)	(\$1,729)
	Management	(\$461)	(\$1,219)	(\$1,681)
Support	(\$248)	(\$388)	(\$636)	
Expenses Total		(\$19,573)	(\$19,848)	(\$39,422)
Grand Total		\$3,928	(\$2,666)	\$1,261

Annual expense budgets are based on the projected spend rate for the Amendment 1B and Amendment 2 work plans combined (Pg 2 and 3).

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Amendment 1B Budget by Month (\$000s)

Reservoir Committee Work Plan Summary

Subject Area	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Total
Revenue									
Beginning Balance*	\$6,847								\$6,847
Participation Revenue									\$0
Federal Revenue									\$0
State Revenue	\$3,300								\$3,300
Revenue Sum	\$10,147								\$10,147
Expenses									
Environmental Planning	(\$269)	(\$245)	(\$269)	(\$269)	(\$245)	(\$257)	\$0	\$0	(\$1,555)
Operations Modeling	(\$519)	(\$472)	(\$355)	(\$220)	(\$116)	(\$85)	(\$55)	(\$53)	(\$1,876)
Engineering	\$0	(\$151)	(\$237)	(\$239)	(\$247)	(\$272)	(\$248)	(\$205)	(\$1,600)
Geotechnical	\$0	\$0	(\$27)	(\$118)	(\$107)	(\$118)	(\$118)	(\$113)	(\$601)
Real Estate	(\$7)	(\$6)	(\$7)	(\$7)	(\$6)	(\$7)	(\$7)	(\$7)	(\$55)
Communications	(\$38)	(\$35)	(\$38)	(\$38)	(\$35)	(\$38)	(\$38)	(\$36)	(\$297)
Project Controls	(\$255)	(\$77)	(\$85)	(\$85)	(\$77)	(\$85)	(\$85)	(\$81)	(\$828)
Funding	(\$74)	(\$109)	(\$120)	(\$121)	(\$104)	(\$61)	(\$37)	(\$35)	(\$661)
Growth	(\$93)	(\$84)	(\$93)	(\$93)	(\$84)	(\$93)	(\$93)	(\$88)	(\$719)
Management	\$0	\$0	\$0	(\$1)	(\$23)	(\$25)	(\$9)	\$0	(\$58)
Support	(\$15)	(\$14)	(\$15)	(\$15)	(\$14)	(\$15)	(\$15)	(\$15)	(\$120)
Expense Sum	(\$1,271)	(\$1,194)	(\$1,247)	(\$1,206)	(\$1,059)	(\$1,056)	(\$765)	(\$633)	(\$8,370)

*Adjusted from value published in work plan based on 2019 close-out

Amendment 2 Budget by Month (\$000s)

Reservoir Committee Work Plan Summary

Subject Area	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Oct 21	Sep 21	Nov 21	Dec 21	Total
Revenue																	
Participation Revenue			\$11,520					\$7,680									\$19,200
Federal Revenue							\$2,000				\$2,000						\$4,000
State Revenue			\$1,834			\$1,834						\$1,834			\$1,834		\$7,336
Revenue Total			\$13,354			\$1,834	\$2,000	\$7,680			\$2,000	\$1,834			\$1,834		\$39,536
Expenses																	
Permitting	(\$253)	(\$577)	(\$1,023)	(\$705)	(\$525)	(\$525)	(\$584)	(\$471)	(\$419)	(\$448)	(\$295)	(\$309)	(\$295)	(\$295)	(\$613)	(\$232)	(\$7,569)
Early Mitigation	\$0	\$0	(\$113)	(\$131)	(\$119)	(\$119)	(\$136)	(\$131)	(\$119)	(\$235)	(\$231)	(\$242)	(\$231)	(\$231)	(\$220)	(\$242)	(\$2,500)
Environmental Planning	(\$488)	(\$512)	(\$442)	(\$513)	(\$474)	(\$474)	(\$218)	(\$71)	(\$65)	(\$71)	(\$61)	(\$62)	(\$216)	(\$42)	(\$343)	(\$279)	(\$4,332)
Operations Modeling	(\$621)	(\$680)	(\$232)	(\$78)	(\$71)	(\$71)	(\$81)	(\$72)	(\$43)	(\$48)	(\$46)	(\$48)	(\$11)	(\$46)	\$0	\$0	(\$2,146)
Engineering	(\$1,134)	(\$768)	(\$398)	(\$461)	(\$108)	(\$185)	(\$355)	(\$292)	(\$221)	(\$190)	(\$161)	(\$186)	(\$155)	(\$155)	(\$147)	(\$25)	(\$4,941)
Geotechnical	(\$52)	(\$54)	(\$61)	(\$374)	(\$346)	(\$461)	(\$513)	(\$134)	(\$124)	(\$172)	(\$42)	(\$44)	(\$42)	(\$42)	(\$40)	(\$42)	(\$2,544)
Real Estate	(\$23)	(\$24)	(\$20)	(\$24)	(\$21)	(\$25)	(\$24)	(\$21)	(\$24)	(\$23)	(\$24)	(\$24)	(\$23)	(\$23)	(\$21)	(\$24)	(\$362)
Communications	(\$48)	(\$50)	(\$43)	(\$50)	(\$46)	(\$46)	(\$52)	(\$50)	(\$46)	(\$50)	(\$48)	(\$50)	(\$48)	(\$48)	(\$46)	(\$50)	(\$771)
Project Controls	(\$126)	(\$132)	(\$114)	(\$132)	(\$120)	(\$120)	(\$138)	(\$132)	(\$120)	(\$132)	(\$126)	(\$132)	(\$126)	(\$126)	(\$120)	(\$132)	(\$2,033)
Funding	(\$29)	(\$30)	(\$26)	(\$30)	(\$64)	(\$66)	(\$76)	(\$73)	(\$66)	(\$71)	(\$29)	(\$30)	(\$29)	(\$29)	(\$28)	(\$30)	(\$706)
Growth	(\$25)	(\$26)	(\$23)	(\$26)	\$0	\$0	(\$38)	(\$36)	(\$33)	(\$36)	(\$35)	(\$154)	(\$146)	(\$146)	(\$139)	(\$148)	(\$1,010)
Management	(\$101)	(\$106)	(\$91)	(\$106)	(\$96)	(\$96)	(\$110)	(\$106)	(\$96)	(\$106)	(\$101)	(\$106)	(\$101)	(\$101)	(\$96)	(\$106)	(\$1,623)
Support	(\$32)	(\$34)	(\$29)	(\$34)	(\$31)	(\$31)	(\$35)	(\$34)	(\$31)	(\$34)	(\$32)	(\$34)	(\$32)	(\$32)	(\$31)	(\$34)	(\$516)
Expenses Total	(\$2,994)	(\$3,294)	(\$2,310)	(\$2,360)	(\$2,010)	(\$2,214)	(\$2,262)	(\$1,634)	(\$1,494)	(\$1,310)	(\$1,230)	(\$1,422)	(\$1,454)	(\$1,314)	(\$1,240)	(\$1,243)	(\$31,312)

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**RESPONSES TO WATER STORAGE EXPLORATORY COMMITTEE
COMMENTS AND QUESTIONS**

Comment 1: A request was made for more time to make a decision regarding participation in the next phase of the project.

Response 1: After Valley Water's August 21, 2020 Water Storage Exploratory Committee (WSEC) meeting, Staff reached agreement with the Sites Reservoir Project (Sites Project) Executive Director that Valley Water will provide a decision on continued project participation in November of 2020.

Comment 2: Provide more information regarding details of the project financial analysis model to be provided through a Non-Agenda item for Board review

Response 2: Staff submitted a Non-Agenda Memo to provide additional information to questions posed by WSEC on the project financial analysis.

Comment 3: Provide information describing project challenges, risks, and mitigation measures.

Response 3: See Attachment 3.

Comment 4: Is the assumption that 100% of Sites water will be conveyed through the Delta and South Bay Aqueduct (SBA)?

Response 4: How Sites Project water will be conveyed to Valley Water depends on what infrastructure and agreements are in place after project construction. If the Delta Conveyance Facility is constructed, Sites Project water will likely be conveyed through that facility. In the absence of improved conveyance across the Delta, the water will be conveyed through the Delta and incur carriage water losses similar to transfer supplies. Agreements can be developed to allow the water to move either through the State Water Project (SWP) SBA or through the Central Valley Project (CVP) San Felipe Division to reach Santa Clara County.

Comment 5: Can water be transported during dry, critical dry years, and extended drought conditions?

Response 5: There is typically a great deal of available transfer capacity across the Delta in dry, critically dry and extended drought conditions, and, in the absence of improved Delta conveyance, the Sites Project will function best if the water is moved under these dry conditions. Water losses across the Delta could be as much as 35%, depending on water quality conditions;

these losses are expected to be minimal if the water is conveyed through a Delta Conveyance Facility.

Comment 6: Provide information regarding available capacity on the SBA to convey Sites water.

Response 6: Sites Project is being evaluated as a potential project to help Valley Water maintain its current deliveries of imported supplies in support of the Board's approved ensure sustainability strategy #1 to "securing existing supplies and infrastructure." Thus, investing in Sites Project is not expected to increase Valley Water's dependence on the SBA. Recently the three SBA Contractor Agencies, Alameda County Water District (ACWD), Valley Water, and Zone 7 Water Agency (Zone 7) collaborated with the Department of Water Resources (DWR) on an SBA capacity model. This model assumes maximum use of the SBA by Valley Water to meet county demands. The SBA capacity model identifies excess capacity that could be used by other non-SWP agencies after the three SBA Contractors demands are met. The model indicated more available capacity for other users in the winter months but did not indicate a strong correlation between water year type and available capacity. As the Sites Project develops along with other regional and statewide projects, staff will continue to evaluate how, and under which conditions the projects may increase Valley Water's dependence on the SBA.

Comment 7: How does this Project compare with constraints encountered with receiving water deliveries from Semitropic during the last drought?

Response 7: Semitropic is downstream of Valley Water and therefore water must be withdrawn and delivered to Valley Water by exchange with SWP water supplies delivered from the Delta. In droughts, there is limited water from the Delta to exchange. Sites Project is upstream of Valley Water and does not have this problem; the Sites Project water will be delivered directly to Valley Water after incurring some losses across the Delta. The Sites Project can help facilitate withdrawals of water from Semitropic because Valley Water may be able to exchange Semitropic water for Sites Project water allocated to SWP contractors located downstream of Semitropic when allocations are low.

Comment 8: Were the environmental restrictions considered in analysis, and if so, which BiOp? (one is less constraining than the other)

Response 8: Modeling analysis for the project incorporated regulatory constraints to protect fisheries and flows consistent with California State Water Resources Control Board (SWRCB) Decision D-1641 as well as the 2008 U.S Fish and Wildlife Service (USFWS) and 2009 National Marine Fisheries Service (NMFS) biological opinions, as indicated in the Site's

Attachment 2
Page 2 of 3

Project Value Planning Alternatives Appraisal Report, April 2020 and summarized in the State Water Project Final Delivery Capability Report 2015, July 2015. The 2008 and 2009 biological opinions have been replaced with the 2019 biological opinions, which extend the transfer window; however, the ability to convey supplemental water supplies across the Delta are similar under both sets of biological opinions.

Comment 9: Committee requested additional information and logic to assist in coming to a consensus on what a minimum level of participation in Project should be for Valley Water.

Response 9: The Sites Project Authority has not set a minimum participation level for the Sites Project. Should Valley Water elect to participate at an extremely low level, Valley Water would likely not have influence among partners and would not be able to reserve any meaningful benefit. It may be possible to increase participation later and regain priority status subject to Reservoir Committee approval. See Table1 in the WSEC Agenda Memo for a comparison of different participation levels.

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**Sites Reservoir Project
Major Project Risk, Challenges, and Mitigation Measures**

No.	MAJOR RISK AND CHALLENGES	DESCRIPTION	MITIGATION MEASURE
A.	WATER SUPPLY		
A1	Transportation across Delta during critically dry years	<ul style="list-style-type: none"> • Water quality and pumping limitations may impact conveyance. • Transfers routinely occur during dry years but conveyance losses have been between 20% and 35%. 	<ul style="list-style-type: none"> • Develop alternative conveyance pathways <ul style="list-style-type: none"> • Delta Conveyance Facility, • Transfer Bethany Pipeline, • other alternative.
A2	Deliveries thru South Bay Aqueduct (SBA)	<ul style="list-style-type: none"> • SBA had frequent outages in recent years – in need of repair. • Sites Reservoir Project (Sites Project) water will primarily be conveyed through SBA. • SBA must be rehabilitated irrespective of our participation in the Sites Project. 	<ul style="list-style-type: none"> • Continue engagement with Department of Water Resources (DWR) to rehabilitate SBA. • Develop agreements to use Central Valley Project (CVP) facilities as an alternative delivery option.
A3	Projected yield and storage capacity of the project	<ul style="list-style-type: none"> • Ongoing consultation with regulatory agencies may result in lower project yield. 	<ul style="list-style-type: none"> • Continue engagement with regulatory agencies to develop appropriate operating criteria.
A4	Coordinated operations with SWP and CVP	<ul style="list-style-type: none"> • Sites Project operations will require coordination with DWR and U.S. Bureau of Reclamation (Reclamation). 	<ul style="list-style-type: none"> • Develop coordinated operations agreements with DWR and Reclamation.

**Sites Reservoir Project
Major Project Risk, Challenges, and Mitigation Measures**

B. PERMITTING			
B1	Water rights from State Water Resources Control Board	<ul style="list-style-type: none"> • Assignment or release of a State filed application or new water right needed. • Protests and injury claims may be filed. • State Board may impose additional operating restrictions. 	<ul style="list-style-type: none"> • The project has contracted with legal counsel specifically to address water rights issues.
B2	CEQA/NEPA Approvals	<ul style="list-style-type: none"> • Fishery agencies may impose more severe restrictions on operations than anticipated. • CEQA litigation challenges. 	<ul style="list-style-type: none"> • Negotiation team assembled to work with regulatory agencies.
B3	Environmental opposition	<ul style="list-style-type: none"> • Some nongovernment organizations (NGOs) had opposed project. 	<ul style="list-style-type: none"> • Respond to public in recirculated draft EIR/EIS • Continue briefings with NGOs to solicit feedback and address concerns • Fund technical studies to address environmental concerns from mercury raised by NGOs.
C. CONSTRUCTION			
C1	Geotechnical uncertainties	<ul style="list-style-type: none"> • Major geotechnical analysis is being postponed until the design phase (beginning in 2022) to reduce cost. 	<ul style="list-style-type: none"> • Strategically spend limited funding on targeted geotechnical analysis to inform project decisions on critical path.

**Sites Reservoir Project
Major Project Risk, Challenges, and Mitigation Measures**

D.	COST		
D1	Securing adequate participation	<ul style="list-style-type: none"> • Sustaining adequate participation level as funding requests increase may be a challenge. 	<ul style="list-style-type: none"> • Develop strong outreach program and work to increase support. • Continue to reach out to potential investors.
D2	Proposition 1 Water Storage Investment Program Funding (Prop 1)	<ul style="list-style-type: none"> • Feasibility Study, public review EIS, Commission Findings, and 75% funding commitment must be met by January 1, 2022. 	<ul style="list-style-type: none"> • Focus project team on meeting Prop 1 requirements. • Assemble effective team of consultants and staff.
D3	Construction cost	<ul style="list-style-type: none"> • Costs may increase as more information is developed. 	<ul style="list-style-type: none"> • Project size and costs have been reduced. • Implement geotechnical mitigation measures. • Update risk assessment.

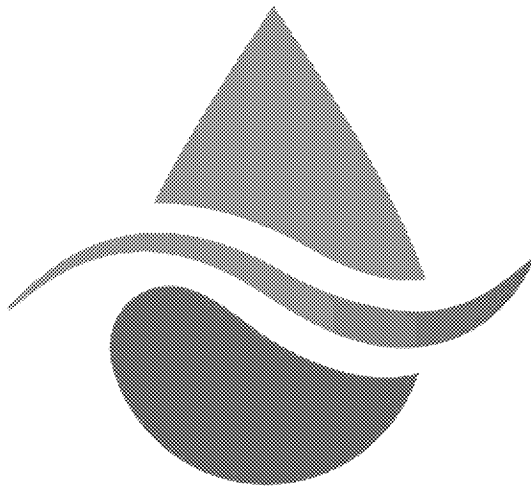
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Project Participation Summary

Participant	Phase 2 (2019) Participation Request (AF) – larger project no longer pursued	Amendment 2 Staff Recommended Participation Request (AF) ¹	Approval Status as of October 16, 2020 ¹	Variance (AF)	New Participation Interest (AF) ¹	Estimated Cost Share of Total Project
American Canyon, City of	4,000	4,000	Approved	0		1.6%
Antelope Valley-East Kern WA	500	500	Approved	0		0.2%
Carter MWC	300	300	Approved	0		0.1%
Coachella Valley WD	10,000	10,000	Approved	0		4.1%
Colusa County	10,000	10,000	Approved	0		4.1%
Colusa County WD	11,975	10,073	Approved	-1,902		4.1%
Desert WA	6,500	6,500	Approved	0		2.7%
Glenn-Colusa ID	5,000	5,000	Approved	0		2.1%
Metropolitan WD of S. CA	50,000	50,000	Approved	0		20.6%
Reclamation District 108	4,000	4,000	Approved	0		1.6%
San Bernardino Municipal WD	21,400	21,400	Approved	0		8.8%
San Geronio Pass WA	14,000	14,000	Approved	0		5.8%
Santa Clara Valley WD	16,000	7,800 min.	---	-8,200		3.2% min.
Santa Clarita Valley WA	5,000	5,000	Approved	0		2.1%
TC4: Cortina WD	450	450	Approved	0		0.2%
TC4: Davis WD	2,000	2,000	Approved	0		0.8%
TC4: Dunnigan WD	2,717	2,947	Approved	230		1.2%
TC4: LaGrande WD	1,000	1,000	Approved	0		0.4%
Westside WD	15,000	4,175	Approved	-10,825		1.7%
Wheeler Ridge-Marcopa WSD	3,050	3,050	Approved	0		1.3%
Zone 7 WA	10,000	10,000	Approved	0		4.1%
Irvine Ranch Water District	0	0	---	0	1,000	---
Rio Bravo Rosedale WD	0	0	---	0	500	---
TOTAL	192,892	172,195		-20,697	1,500	70.9%

1. Information as presented in the Sites Project Reservoir Committee meeting held on October 16, 2020.

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Page 40



Valley Water

Clean Water • Healthy Environment • Flood Protection

Water Storage Exploratory Committee Meeting
October 30, 2020



Update on Sites Reservoir Project: Second Amendment to 2019 Reservoir Project Agreement for Continued Participation

October 30, 2020

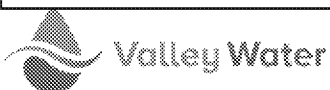


Staff Recommendations

- A. Receive and discuss updated information on the Sites Reservoir Project (Project).
- B. Recommend to Board to authorize CEO to execute the Second Amendment to 2019 Reservoir Project Agreement for continued participation in Project Phase 2 at a minimum participation level of 3.2 percent of the total project and a minimum funding commitment of up to \$0.78 million.
- C. Recommend to Board to direct staff to continue engagement in Sites Reservoir Committee and negotiate future participation parameters.

Preliminary Amendment 2 Participation

Participant	Phase 2 (2019) Participation Request (AF) – larger project no longer pursued	Amendment 2 Staff Recommended Participation Request (AF) ¹	Approval Status as of October 16, 2020 ¹	Variance (AF)	New Participation Interest (AF) ¹	Estimated Cost Share of Total Project ²
American Canyon, City of	4,000	4,000	Approved	0	0	1.6%
Antelope Valley-East Kern WA	500	500	Approved	0	0	0.2%
Carter MWC	300	300	Approved	0	0	0.1%
Coachella Valley WD	10,000	10,000	Approved	0	0	4.1%
Colusa County	10,000	10,000	Approved	0	0	4.1%
Colusa County WD	11,975	10,073	Approved	-1,902	0	4.1%
Desert WA	6,500	6,500	Approved	0	0	2.7%
Glenn-Colusa ID	5,000	5,000	Approved	0	0	2.1%
Metropolitain WD of S. CA	50,000	50,000	Approved	0	0	20.6%
Reclamation District 108	4,000	4,000	Approved	0	0	1.6%
San Bernardino Municipal WD	21,400	21,400	Approved	0	0	8.8%
San Geronio Pass WA	14,000	14,000	Approved	0	0	5.8%
Santa Clara Valley WD	16,000	7,800 min.	---	-8,200	---	3.2% min.
Santa Clarita Valley WA	5,000	5,000	Approved	0	0	2.1%
TC4: Cortina WD	450	450	Approved	0	0	0.2%
TC4: Davis WD	2,000	2,000	Approved	0	0	0.8%
TC4: Dunnigan WD	2,717	2,947	Approved	230	0	1.2%
TC4:LaGrande WD	1,000	1,000	Approved	0	0	0.4%
Westside WD	15,000	4,175	Approved	-10,825	0	1.7%
Wheeler Ridge-Marcopa WSD	3,050	3,050	Approved	0	0	1.3%
Zone 7 WA	10,000	10,000	Approved	0	0	4.1%
Irvine Ranch Water District	0	0	---	0	1,000	---
Rio Bravo Rosedale	0	0	---	0	500	---
TOTAL	192,892	172,195		-20,697	1,500	70.9%



1. Information as presented in the Sites Project Reservoir Committee meeting held on October 16, 2020.
2. Total project estimated to be 243,000 acre-foot (AF).

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Major Project Risk and Challenges (Water Supply)

No.	MAJOR RISK AND CHALLENGES	DESCRIPTION	MITIGATION MEASURE
A.	WATER SUPPLY		
A1	Transportation across Delta during critically dry years	<ul style="list-style-type: none"> Water quality and pumping limitations may impact conveyance. Transfers routinely occur during dry years but conveyance losses have been between 20% and 35%. 	<ul style="list-style-type: none"> Develop alternative conveyance pathways <ul style="list-style-type: none"> Delta Conveyance Facility, Transfer Bethany Pipeline, other alternative.
A2	Deliveries thru South Bay Aqueduct (SBA)	<ul style="list-style-type: none"> SBA had frequent outages in recent years – in need of repair. Sites water will primarily be conveyed through SBA. SBA must be rehabilitated irrespective of our participation in the Sites Project. 	<ul style="list-style-type: none"> Continue engagement with Department of Water Resources (DWR) to rehabilitate SBA. Develop agreements to use Central Valley Project (CVP) facilities as an alternative delivery option.
A3	Projected yield and storage capacity of the project	<ul style="list-style-type: none"> Ongoing consultation with regulatory agencies may result in lower project yield. 	<ul style="list-style-type: none"> Continue engagement with regulatory agencies to develop appropriate operating criteria.
A4	Coordinated operations with SWP and CVP	<ul style="list-style-type: none"> Sites operations will require coordination with DWR and Reclamation. 	<ul style="list-style-type: none"> Develop coordinated operations agreements with DWR and Reclamation.

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Major Project Risk and Challenges (Permitting)

No.	MAJOR RISK AND CHALLENGES	DESCRIPTION	MITIGATION MEASURE
B.	PERMITTING		
B1	Water rights from State Water Resources Control Board	<ul style="list-style-type: none"> • Assignment or release of a State filed application or new water right needed. • Protests and injury claims may be filed. • State Board may impose additional operating restrictions. 	<ul style="list-style-type: none"> • The project has contracted with legal counsel specifically to address water rights issues.
B2	CEQA/NEPA Approvals	<ul style="list-style-type: none"> • Fishery agencies may impose more severe restrictions on operations than anticipated. • CEQA litigation challenges. 	<ul style="list-style-type: none"> • Negotiation team assembled to work with regulatory agencies.
B3	Environmental opposition	<ul style="list-style-type: none"> • Some nongovernment organizations (NGOs) had opposed project. 	<ul style="list-style-type: none"> • Respond to public in recirculated draft EIR/EIS • Continue briefings with NGOs to solicit feedback and address concerns • Fund technical studies to address environmental concerns from mercury raised by NGOs.

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Major Project Risk and Challenges (Const. and Cost)

No.	MAJOR RISK AND CHALLENGES	DESCRIPTION	MITIGATION MEASURE
C.	CONSTRUCTION		
C1	Geotechnical uncertainties	<ul style="list-style-type: none"> Major geotechnical analysis is being postponed until the design phase (beginning in 2022) to reduce cost. 	<ul style="list-style-type: none"> Strategically spend limited funding on targeted geotechnical analysis to inform project decisions on critical path.
D.	COST		
D1	Securing adequate participation	<ul style="list-style-type: none"> Sustaining adequate participation level as funding requests increase may be a challenge. 	<ul style="list-style-type: none"> Develop strong outreach program and work to increase support. Continue to reach out to potential investors.
D2	Proposition 1 Water Storage Investment Program Funding (Prop 1)	<ul style="list-style-type: none"> Feasibility Study, public review EIS, Commission Findings, and 75% funding commitment must be met by January 1, 2022. 	<ul style="list-style-type: none"> Focus project team on meeting Prop 1 requirements. Assemble effective team of consultants and staff.
D3	Construction cost	<ul style="list-style-type: none"> Costs may increase as more information is developed. 	<ul style="list-style-type: none"> Project size and costs have been reduced. Implement geotechnical mitigation measures. Update risk assessment.

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Phase 2 Project Participation Options

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Option	Valley Water							
	Target Level of Participation ¹		Estimated Benefits (Storage and Yield)			Cost		
	Total Project (%)	Request (AF)	Average Delivered Yield (AF) ²	Average Drier Year Delivered Yield (AF) ²	Storage Share (AF)	Total Capital Cost (\$ Million)	Total Capital Cost Fully Inflated (\$ Million)	Funding Commitment (\$ Million) ³
Feb. 2019	3.2	16,000	11,100	21,500	55,000	192	242	0.96
A	3.2	7,800	4,700 to 6,100	6,500 to 8,200	45,000	95	125	0.78
B	6.6	16,000	9,600 to 12,400	13,200 to 16,800	90,000	195	255	1.60

1. The Site Project Authority has not set a minimum requirement for participating in the project.
2. Yields delivered to Valley Water assume a 25% carriage water loss applied to North of Delta yield numbers.
3. Amendment No. 2 (Phase 2, Years 2 and 3 of project) commitment is \$100 per 1 AF.

* Staff estimates a \$600-\$800 per AF 100-year levelized unit cost (2020 constant dollars).



Evaluation of Participation Options

Option	Valley Water Participation Level ^{1,2}	Advantages	Disadvantages
A	3.2% (\$0.78 M)	<ul style="list-style-type: none"> • Lower cost than previous funding commitments • Potential for partial refund of previous investment 	<ul style="list-style-type: none"> • Reserves a smaller portion of yield and storage benefits (8 TAF drier year yield, 45 TAF storage) • Reduced level of influence, 4.4% weighted voting on Reservoir Committee³ • May be difficult to increase participation at a later date
B	6.6% (\$1.6 M)	<ul style="list-style-type: none"> • Maintain current level of influence, 6.5% weighted voting on Reservoir Committee³ • Reserves a larger portion of yield and storage benefit (17 TAF drier year yield, 90 TAF storage) • May reduce participation later 	<ul style="list-style-type: none"> • Higher cost

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¹ Valley Water participation level in total project and associated funding commitment for the Second Amendment.

² There is currently no set minimum requirement for participating in the project.

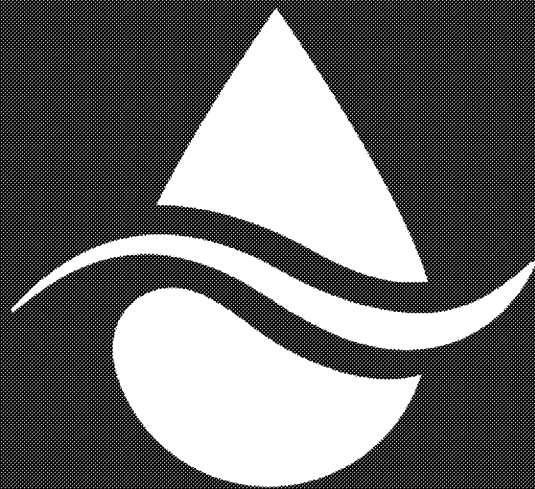
³ Estimate assumes continued participation by all agencies with a total participation equal to 193 TAF.

Key: TAF = thousand acre-foot



Staff Recommendations

- A. Receive and discuss updated information on the Sites Reservoir Project (Project).
- B. Recommend to Board to authorize CEO to execute the Second Amendment to 2019 Reservoir Project Agreement for continued participation in Project Phase 2 at a minimum participation level of 3.2 percent of the total project and a minimum funding commitment of up to \$0.78 million.
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Valley Water

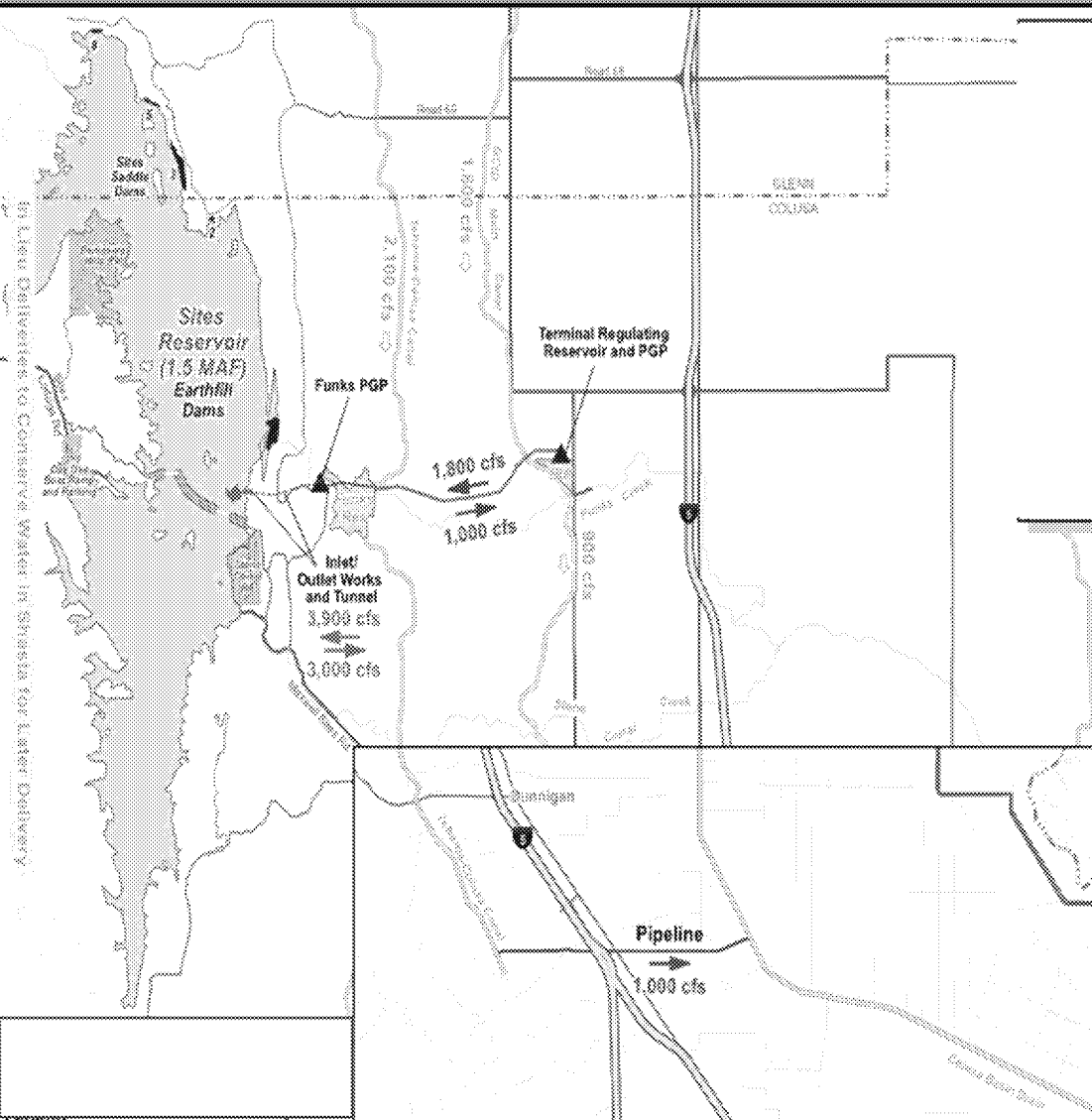
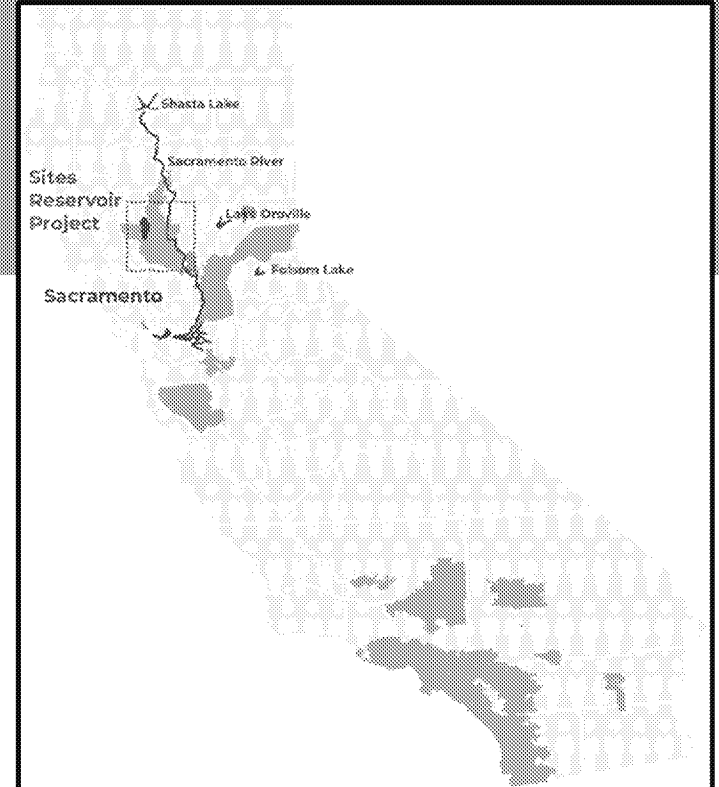
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Supplemental Slides



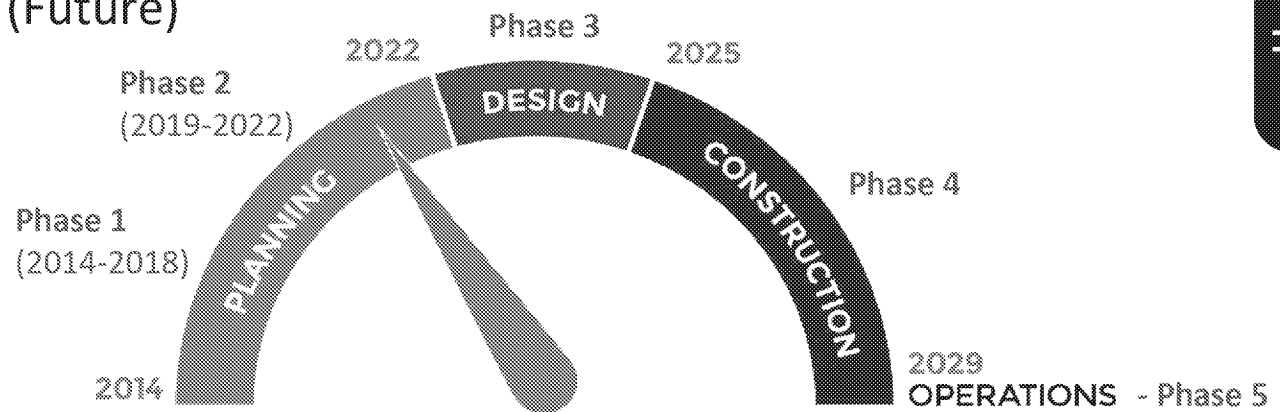
Sites Reservoir Project

Location: Colusa and Glenn Counties, California



Path Forward: Project Phasing

- Phase 1: Planning – State/Federal funding applications and EIR/EIS development. (Complete)
- **Phase 2: Planning – EIR/EIS completion, feasibility studies, predesign, critical permits, water rights, and interim financing. (In Progress)**
- Phase 3: Design – Geotech exploration, final design, land and right of way acquisition, and remaining permits. (Future)
- Phase 4: Construction. (Future)
- Phase 5: Transfer of operations. (Future)



Phase 2 Project Participation Options

Option	Valley Water							
	Target Level of Participation ¹		Estimated Benefits (Storage and Yield)			Cost		
	Total Project (%)	Request (AF)	Average Delivered Yield (AF) ²	Average Drier Year Delivered Yield (AF) ²	Storage Share (AF)	Total Capital Cost (\$ Million)	Total Capital Cost Fully Inflated (\$ Million)	Funding Commitment (\$ Million) ³
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B	6.6	16,000	9,600 to 12,400	13,200 to 16,800	90,000	195	255	1.60
C	0.0004	1	Negligible	Negligible	6	Less than 1	Less than 1	0.0001

1. There is currently no set minimum requirement for participating in the project.
2. Yields delivered to Valley Water assume a 25% carriage water loss applied to North of Delta yield numbers.
3. Amendment No. 2 (Phase 2, Years 2 and 3 of project) commitment is \$100 per 1 AF.



¹ Staff estimate a \$600-\$800 per AF 100-year levelized unit cost (2020 constant dollars).

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Evaluation of Participation Options

Option	Valley Water Participation Level ¹	Advantages	Disadvantages
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B	6.6% (\$1.6 M)	<ul style="list-style-type: none"> • Maintain current level of influence, 6.5% weighted voting on Reservoir Committee² • Reserves a larger portion of yield and storage benefit (17 TAF drier year yield, 90 TAF storage) • May reduce participation later 	<ul style="list-style-type: none"> • Higher cost
C	0.0004% (\$0.0001 M)	<ul style="list-style-type: none"> • Despite minimal participation, maintains 2.38% weighted voting on Reservoir Committee² • Potential for partial refund of previous investment 	<ul style="list-style-type: none"> • Reduced level of influence • No preservation of benefit to Valley Water • Project may continue to move forward without Valley Water support • May be difficult to participate at a later date

¹ Valley Water participation level in total project and associated funding commitment for the Second Amendment.

² Estimate assumes continued participation by all agencies with a total participation equal to 193 TAF.

Key: TAF = thousand acre-foot





Santa Clara Valley Water District

File No.: 20-0963

Agenda Date: 10/30/2020
Item No.: 4.2.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Update on Los Vaqueros Reservoir Expansion Project: Joint Powers Authority, Usage Fees, and South Bay Aqueduct.

RECOMMENDATION:

Receive and discuss information regarding the creation of a Joint Powers Authority for the construction and operation of the Los Vaqueros Reservoir Expansion Project, proposed usage fees charged by Contra Costa Water District for the use of their facilities, and the South Bay Aqueduct.

SUMMARY:

The Santa Clara Valley Water District (Valley Water) continues to evaluate participating in the Los Vaqueros Reservoir Expansion Project (LVE Project) led by Contra Costa Water District (CCWD). This memo provides background on the project, an update on LVE Project governance, the draft Joint Powers Authority (JPA) Agreement, progress on negotiating usage fees for Local Area Partners' (LAPs) use of CCWD and East Bay Municipal Utility District (EBMUD) facilities, and an update on the South Bay Aqueduct.

Background

The LVE Project would expand Los Vaqueros Reservoir storage from 160 thousand acre-feet (TAF) to 275 TAF and build the Transfer-Bethany Pipeline to connect the reservoir to the State Water Project's (SWP) South Bay Aqueduct (SBA). The LVE Project may provide Valley Water regional storage, new water through CCWD's diversion rights, and increased operational flexibility in the conveyance of imported water. Valley Water is considering a Second Amendment to the 2019 Cost-Share Agreement to continue project development through 2021 and with an additional cost share of between approximately \$800,000 and \$1 million. Funding will go towards making progress on permits, design, preparing services agreements, and the formation of the JPA.

CCWD estimates the total LVE Project development and construction 40-year life cycle costs to be \$868 million in constant 2018 dollars. The California Water Commission approved a Prop 1 WSIP grant award of up to \$459 million for the LVE Project, including \$22.95 million in early funding. The U.S. Bureau of Reclamation (USBR) received \$2.155 million of federal funding for the LVE Project through the WINN Act for Fiscal Year (FY) 2020. CCWD and the LAPs are continuing efforts to procure additional WINN Act funding beyond FY 2020, ultimately seeking \$223 million in total.

Through June 2020, Valley Water has spent approximately \$618,000 towards LVE Project cost-

sharing for the WSIP application and project development, including in-kind labor costs.

CCWD completed a Draft Feasibility Report with the USBR in January 2018, and the Final Supplement to the EIR/EIS was published in the Federal Register in February 2020. Neither the Draft Feasibility Report nor the EIR/EIS received legal challenges or significant public opposition. On May 13, 2020, CCWD's Board adopted a resolution certifying the Final Supplement to the Final EIS/EIR and approved the LVE Project. The LVE Project is now proceeding with permitting and design.

Valley Water continues to work with CCWD and the LAPs to evaluate long-term participation levels, how it translates to water storage and/or supply benefits, costs, and risks. In addition, Valley Water is working with regional partners to evaluate how storage and conveyance components could support other regional projects, such as the Bay Area Regional Desalination Project and the Refinery Recycled Water Project.

Formation of a Joint Power Authority

Although CCWD has led LVE Project planning, environmental review, and initial design, remaining tasks and operations will be led by the JPA. The JPA will have a Board of Directors with a representative from each JPA member agency. The JPA will oversee the construction and operation of facilities, ensure stable funding, and the reliable delivery of water. Specific activities of the JPA will include:

- Financing of project construction
- Executing agreements with CCWD and others for the design and construction of the project
- Executing agreements for administration of the JPA and operations of the project
- Managing contracts for administration of public benefits
- Coordinating requests for services among JPA Members

The development of the JPA has been led by independent counsel (Lagerlof, LLP) working with a Legal Working Group made up of legal staff from CCWD and the LAPs. Staff has been active in the Working Group to ensure Valley Water's interests are addressed. The initial version was based on principles in the 2018 Cost-share Agreement, with working drafts developed by independent counsel and reviewed by the Legal Working Group. Some consensus was achieved by the Legal Working Group on standard terms while other policy areas were presented to the LAP General Managers for further discussion at a September 14, 2020 meeting.

Key policy discussions considered by the LAP General Managers include:

- Eligibility to serve on JPA Board
- Voting of members
- Veto rights and special voting rules for CCWD and EBMUD
- JPA Board Chair, Officers, Employees and/or Consultants
- Finances
- Withdrawal
- Termination and Amendment

The October 2, 2020 draft of the JPA is provided in Attachment 1. Further changes will be made based upon the results of the Attorneys Working Group call on October 20th and the anticipated input from a finance working group in late October. New language from EBMUD and CCWD is also anticipated in late October or early November regarding their proposed veto rights (section 3.3). There will also be further discussion on withdrawal terms proposed by the SFPUC (sec. 8.3.X). A further draft is expected for circulation by mid-November. Approval of the JPA by all parties is now expected in December 2020 or January 2021.

Usage Fees

CCWD initially released a draft usage fees proposal in October 2018 to establish a methodology for recovering costs for use of their facilities. The LAPs formed a Usage Fees Working Group and hired an independent financial consultant (Bartle Wells & Associates) to review CCWD's proposal. Bartle Wells provided recommendations to the LAPs and CCWD near the end of 2019. CCWD updated the usage fees memo in March, June, and August of 2020 to address comments raised in the Bartle Wells report and ongoing dialogue with the Usage Fees Working Group (Attachment 2). Under the original proposal, CCWD would have charged LAPs approximately \$7.0 million per year for conveyance facilities and \$4.3 million per year for storage fees. The current proposal would result in \$3.7 million per year conveyance facility fees and \$4.2 million per year storage fees.

CCWD hosted a meeting with the LAPs regarding usage fees on September 25, 2020. The LAPs expressed they still have two concerns:

- 1) The costs associated with the use of facilities where CCWD constructed excess capacity and redundancy into their system. CCWD states that the LAPs benefit from the redundancy; LAPs argue that costs should be based on capacity available to them, especially considering that CCWD has priority use of the system and it is not always available to partners.
- 2) Determining a fair cost of the use of land including watershed lands for the reservoir.

CCWD stated they have gone as far as they can on lowering costs and are not intending to take the matter back to its Board; they consider the August 17, 2020 version final and ready for discussion by the General Managers.

The LAPs are discussing forming a smaller workgroup to continue to address the outstanding issues. CCWD usage fees would represent between 5 and 10 percent of total project costs. CCWD recommended the development of a joint Letter of Understanding (LOU) with the LAPs to memorialize the discussion, cost calculation methodology, and CCWD's usage fees determination so those topics do not have to be revisited in the future while other aspects of the LVE project (and the JPA) are negotiated. The LOU would not create any binding financial commitments; hence it would be appropriate for the GMs/CEO of the LAPs to sign.

EBMUD released a draft usage fees proposal for LAP use of their facilities (Mokelumne Aqueduct and Freeport Intake) at the same time as CCWD. The LAPs and Bartle Wells have provided comments on the usage fees and are continuing to meet with EBMUD to discuss LAP comments.

South Bay Aqueduct

The SBA connects Valley Water to Bethany Reservoir and most contract water from the SWP arrives

via the SBA. The California Department of Water Resources (DWR) owns the SBA and has been holding meetings with the SBA Contractors (Valley Water, Alameda County Water District, and Zone 7) about reliability of the facility. DWR has been focusing on short-term improvements to install internal pipe joint seals potentially occurring this December and January. DWR is also planning for permanent long-term fixes and the potential scope and costs of these repairs are expected to be completed in late 2021 or early 2022.

The SBA Contractors have also been looking at capacity in the SBA regarding the San Francisco Public Utilities Commission (SFPUC) and the Bay Area Water Supply & Conservation Agency (BAWSCA) moving water from the LVE Project through the SBA. The preliminary data has been shared with SFPUC and BAWSCA. These agencies will use this data to inform their analysis of the LVE Project.

Next Steps

The following are the key long-term decision points and milestones for the LVE Project:

- Fall 2020: LAP meetings with EBMUD and CCWD to discuss usage fees.
- November 2020: Board meeting to consider a Valley Water resolution to adopt the Second Amendment to the 2019 Multi-party Agreement, which includes additional cost-share of between approximately \$800,000 to \$1 million, depending on the number of participants.
- December 2020 or January 2021: Board meeting to consider Valley Water participation in JPA.
- Late-2021: JPA executes Service Agreements (storage and/or conveyance services) with CCWD and the LAPs and the JPA executes Facilities Usage Agreements with CCWD and EBMUD for existing facilities (i.e., establishes user fees).
- 2022: Construction starts on the initial LVE Project elements
- 2023-2025: Construction of Transfer-Bethany Pipeline.
- 2027-2029: Construction of Los Vaqueros dam raise, upgraded pumping facilities, and other conveyance improvements.

ATTACHMENTS:

Attachment 1: Draft JPA Agreement (10/2/20 version)

Attachment 2: CCWD Usage Fees Presentation

Attachment 3: Staff Powerpoint

UNCLASSIFIED MANAGER:

Jerry De La Piedra, 408-630-2257

**LOS VAQUEROS RESERVOIR
JOINT EXERCISE OF POWERS AGREEMENT**

THIS JOINT POWERS AGREEMENT ("Agreement") is made and entered into as of the Effective Date defined below, by and between the parties listed on Exhibit A attached hereto, which is incorporated herein by this reference. Those parties are referred to in this Agreement individually as a "Member" and collectively as the "Members."

RECITALS

- A. Each Member is a public agency authorized and empowered to contract for the joint exercise of powers under Articles 1 through 4, Chapter 5, Division 7, Title 1 (commencing with Section 6500) of the Government Code of the State of California; and
- B. Each Member has the power to plan for, design, construct, operate, maintain, repair, and replace water-related facilities, as contemplated in the Project, as defined in Section 1.1.23, below; and
- C. The Members desire to use any and every power common to them for the purpose of designing, constructing, operating, repairing and maintaining the Project, or taking such other actions that will make the use of the Project more efficient or effective providing the Members and their respective ratepayers a more reliable water supply;
- D. The Members desire, by means of this Agreement, to establish a new public agency that is separate and apart from each of the Members for the design, construction, operation, and administration of the Project, and for related purposes.

NOW THEREFORE, in consideration of the above Recitals and of the mutual promises and agreements contained herein, the Members agree as follows:

**ARTICLE 1
GENERAL PROVISIONS**

1.1 Definitions. Unless the context otherwise requires, the words and terms defined in this Section 1.1 shall, for the purposes of this Agreement, have the meanings herein specified.

1.1.1 Act means Articles 1 through 4, Chapter 5, Division 7, Title 1 of the Government Code of the State of California (commencing with Section 6500) relating to the joint exercise of powers common to public agencies.

1.1.2 Administrative Agreement means the agreement between the Authority and the Administrator under which the Administrator will provide administrative services to the Authority and will be reimbursed for the costs of those services.

1.1.3 Administrator means the person or entity engaged by the Board of Directors to manage and administer the financial and administrative activities of the Authority in accordance with Section 4.5, below.

1.1.4 Agreement means this Joint Exercise of Powers Agreement.

1.1.5 Authority means the Los Vaqueros Reservoir Joint Powers Authority, which is created by this Agreement.

1.1.6 Board or Board of Directors means the Board of Directors referred to in ARTICLE 2 of this Agreement, which is the governing body of the Authority.

1.1.7 CCWD means Contra Costa Water District, a county water district formed under Division 12 of the Water Code, and the owner of the Los Vaqueros Reservoir.

1.1.8 CCWD-Provided Facility means an existing facility owned and operated by CCWD with excess capacity that has been made available for use by the Authority in accordance with the Facilities Usage Agreement between CCWD and the Authority. CCWD-Provided Facilities are listed and identified in Exhibit B, as it may be subsequently amended to reflect changes to the Project in accordance with Section 8.2, below.

1.1.9 Costs of Service mean the costs of Services included in the payments, or other non-monetary benefits, the Authority will receive from Members pursuant to the Service Agreements. The Costs of Service include, but are not limited to, Project development costs; debt service, to the extent applicable under any agreed upon financing vehicle, including interest, on bonds the Authority will issue; amounts payable to CCWD and EBMUD under the Facilities Usage Agreements; operations and maintenance costs of the Project; Authority administrative expenses; capital reserve payments; and payments to a renewal and replacement fund the Authority will establish.

1.1.10 Design & Construction Agreement means the design and construction agreements the Authority will enter into with CCWD for the New Facilities and Modified Facilities for which CCWD is designated as the builder and operator on Exhibit B hereto; and with EBMUD for the New Facilities and Modified Facilities for which EBMUD is designated as the builder and operator on Exhibit B hereto. Those agreements will address the design and construction services to be provided by the contracting party in accordance with industry standards.

1.1.11 Director means a member of the Board appointed to the Board pursuant to Section 2.2 of this Agreement.

1.1.12 Early Funding Agreement means the agreement between the California Water Commission and CCWD, dated December 20, 2018, to provide advances of up to \$22.95 million to partially fund Project development activities.

1.1.13 EBMUD means East Bay Municipal Utility District, a municipal utility district formed under Division 6 of the Public Utilities Code.

1.1.14 EBMUD-Provided Facility means an existing facility owned and operated by EBMUD with excess capacity that has been made available for use by the Authority in accordance with the Facilities Usage Agreement between EBMUD and the Authority. EBMUD-Provided Facilities are listed and identified in Exhibit B as it may be subsequently amended to reflect changes to the Project in accordance with Section 8.2, below.

1.1.15 Effective Date means January 1, 2021.

1.1.16 Facilities Usage Agreement means the agreements entered into by the Authority and CCWD as to CCWD-Provided Facilities and by the Authority and EBMUD as to EBMUD-

Provided Facilities, pursuant to which the use of capacity in those facilities is made available to the Project and paid for by the Authority through payments to be specified in those agreements.

1.1.17 Fiscal Year means the period commencing on July 1 of each year and ending on and including the following June 30.

1.1.18 Interim Funding Agreement means the agreement entered into among CCWD and the Members, following formation of the Authority, to provide an interim source of funding for Project development costs, including the initial expenses related to the formation of the Authority, prior to the time where permanent sources of Authority revenues are in place.

1.1.19 Member means any of the members of the Authority, as listed on Exhibit A hereto, and any other entity added to this Agreement by a subsequent amendment.

1.1.20 Modified Facilities means existing facilities owned by CCWD or EBMUD that will be modified as part of the Project through financing of the Authority's proportional share of development, design, construction, operations and maintenance costs through Design & Construction Agreements and O & M Agreements between the Authority and CCWD and EBMUD, as applicable, which agreements shall set forth the Authority's rights and obligations with respect to any particular Modified Facility. The Modified Facilities are identified on Exhibit B hereto, as it may be subsequently amended to reflect changes to the Project in accordance with Section 8.2, below.

1.1.21 New Facilities means facilities necessary for the Project that are expected to be financed by the Authority and designed, built, operated and maintained by CCWD or EBMUD through Design & Construction Agreements and O & M Agreements between the Authority and CCWD and EBMUD, as applicable, which agreements shall set forth the Authority's rights and obligations with respect to any particular New Facility. The Authority, including CCWD and EBMUD in their capacity as Members, is expected to be solely responsible for all costs and liabilities related to the New Facilities. The New Facilities are identified on Exhibit B hereto, as it may be subsequently amended to reflect changes to the Project in accordance with Section 8.2, below.

1.1.22 O & M Agreement means the operations and maintenance agreements the Authority will enter into with CCWD for the New Facilities and Modified Facilities for which CCWD is designated as the builder and operator on Exhibit B hereto; and with EBMUD for the New Facilities and Modified Facilities for which EBMUD is designated as the builder and operator on Exhibit B hereto. Those agreements will address operations and maintenance services to be provided by the contracting party in accordance with industry standards, and the payment for such services the Authority will make.

1.1.23 Project means the second phase of the efforts to expand existing conveyance facilities, and construct new conveyance facilities, at the Los Vaqueros Reservoir owned and operated by CCWD. The Project will expand Los Vaqueros Reservoir to a capacity up to 275,000 acre-feet and will interconnect CCWD's intake system to new and existing conveyance facilities that will serve the Members to create a regional system. The Project is expected to provide statewide public benefits, including ecosystem benefits to south-of-Delta wildlife refuges, drought and non-drought emergency water supply benefits for the Members, and recreation benefits. The Project is also expected to provide benefits to regional water supply agencies, integration with state and federal water systems, Central Valley Project operational flexibility, and enhanced opportunities for sustainable groundwater and recycled water management. The Project includes the components specified in Exhibit B hereto, including New Facilities, Modified Facilities, CCWD-Provided Facilities and EBMUD-Provided Facilities.

1.1.24 Services mean the services of the Project provided to the Members pursuant

to the respective Service Agreements, consisting, in general, of water storage and conveyance through the various facilities to which the Authority has contracted to have access and use in accordance with the Facilities Usage Agreements. Specific services to be provided to Members will depend on Members' requests, water delivery priorities specified in the Service Agreements, hydrological conditions and permit and regulatory conditions.

1.1.25 Service Agreement means an agreement entered into by a Member and the Authority pursuant to which the Authority provides Services to the Member and receives payment, or other non-monetary benefits, from that Member as consideration for those services. Service Agreements shall allocate the Costs of Service among the Members in proportion to their anticipated use of Project facilities and other benefits a Member derives from the Project in accordance with the "beneficiary pays" principle. The Service Agreements will also allocate costs in a manner to negate any cross-subsidy among Members (i.e., where any Member obtains an unreasonable financial benefit through financial contributions of another Member or other Members), taking into consideration any grant funding the Authority or any Member has received for Project-related costs.

1.2. Findings. The Members find and declare the following:

1.2.1. The Members represent a diverse group of government entities engaged in water management, conservation, and/or delivery in the San Francisco Bay-Delta and Central Valley region. This area's regional water systems are vulnerable to water shortages due to emergencies such as earthquakes, fire, or drought, and to dry year supply decreases due to insufficient regional storage.

1.2.2. The Project will improve Bay-Delta and Central Valley water supply reliability and water quality while providing additional habitat and Delta ecosystem benefits.

1.2.3. The Authority is created to enable local governments responsible for water distribution to work collaboratively with a regional focus to improve water supply reliability.

1.3 Purposes and Objectives. The purposes of this Agreement are to: (1) create the Authority; (2) provide for the administration of the Authority; (3) plan for, design, construct, operate, maintain, repair, and replace the Project for the benefit of the Members and the region; and (4) coordinate the performance of services related to the Project and approved by the Board of Directors. The primary objectives of the Authority are to:

1.3.1 Provide governance of the Project by the Members;

1.3.2 Ensure sufficient stable funding for the Project and related administrative and support activities to be provided through the Service Agreements and Administrative Agreement;

1.3.3 Ensure costs are reasonable and cost allocations are equitable and transparent, as provided through the Service Agreements; and

1.3.4 Ensure reliable delivery of water to the Members consistent with the terms of the Service Agreements.

1.4 Creation of Authority. Pursuant to the Act, there is hereby created a public entity known as the "Los Vaqueros Reservoir Joint Powers Authority." The Authority shall be a public entity separate and apart from the Members and shall administer this Agreement in accordance with the terms set forth herein.

1.5 Term. The term of this Agreement shall commence on the Effective Date and shall continue until terminated by the Members as provided in ARTICLE 8 of this Agreement.

1.6 Powers of Authority.

1.6.1 General Powers. The Authority shall exercise, in the manner herein provided, the powers common to the Members, powers otherwise permitted under the Act, and powers necessary to accomplish the purposes of this Agreement.

1.6.2 Specific Powers. The Authority is hereby authorized, in its own name, to do all acts necessary, convenient and appropriate for the exercise of the foregoing powers for the purposes set forth in this Agreement and to do any or all of the following:

- (a) To make and enter contracts;
- (b) To employ agents and employees;
- (c) To lease, acquire, construct, manage, maintain or operate any building, works or improvements;
- (d) To acquire, hold or dispose of property;
- (e) To supervise and manage the Project so as to deliver state, federal, and Member benefits commensurate with state, federal, and Member investment in the Project;
- (f) To incur debts, liabilities, or obligations, which, except as otherwise provided in Section 9.2, do not constitute a debt, liability, or obligation of any Member;
- (i) To receive gifts, contributions, and donations of property, funds, services, and other forms of assistance from persons, firms, corporations, and governmental entities, provided that the Authority consents to such gifts, contributions, and donations;
- (j) To prescribe the duties, compensation, and other terms and conditions of employment of other agents, officers, and employees;
- (k) To adopt reasonable rules and regulations for the conduct of the day-to-day operations of the Authority;
- (l) To apply for, accept, receive, and disburse grants and loans from local, state, or federal agencies or from individuals or businesses;
- (m) To sue and be sued in its own name;
- (n) To fund and maintain adequate reserve funds to support debt and operational requirements;
- (o) To invest money in its treasury, pursuant to Government Code Section 6505.5 et seq., that is not required for the immediate necessities of the Authority, as the Authority determines advisable, in the same manner and on the same

conditions as local agencies, pursuant to Section 53601 of the Government Code;

- (p) To enter into state funding agreements and federal funding agreements relating to the Project, and assume rights and obligations pursuant to these agreements;
- (q) To finance Project development activities through a combination of early Water Storage Investment Program funding and pay-as-you-go contributions from the Members;
- (r) To enter into one or more Design & Construction Agreements and O & M Agreements with CCWD and EBMUD, as applicable;
- (s) To enter into the Facilities Usage Agreements with CCWD and EBMUD in connection with the Authority's use of CCWD-Provided Facilities and EBMUD-Provided Facilities, respectively;
- (t) To enter into the Administrative Agreement with CCWD;
- (u) To enter into agreements with individuals or entities providing program management, Watermaster, legal, financial, accounting, auditing, and other services as required;
- (v) To enter into agreements with the California Department of Water Resources, the California Department of Fish and Wildlife, the United States Department of Interior, the United States Bureau of Reclamation, and other local, state or federal entities as may be required to comply with the requirements of any state or federal funding agreements and to implement the Project, including the administration of public benefits;
- (w) To issue Project revenue bonds, secured by revenues of the Project and other Member financial commitments that may be required in connection with that issuance, to provide financing for the Project;
- (x) To deliver Services to the Members, and receive payment from the Members, pursuant to the Service Agreements;
- (y) To exercise any and all powers which are provided for in the Act and in Government Code Section 6584 *et seq.*, including, without limitation Government Code Section 6588, as they exist on the Effective Date of this Agreement or may hereafter be amended;
- (z) To take action by resolution, ordinance, or motion, as approved by the Board of Directors as specified herein;
- (aa) To carry out and enforce all provisions of this Agreement with respect to the activities necessary to undertake the development, construction, and operation of the Project;
- (bb) To conduct such other activities as are necessary and appropriate to the above; and

(cc) To exercise any power necessary or incidental to the foregoing powers.

1.7 Manner of Exercising Authority Powers. The Authority shall exercise its powers in the manner by which Contra Costa Water District exercises its powers, except to the extent this Agreement or the Act specifically provide otherwise.

ARTICLE 2 BOARD OF DIRECTORS

2.1 Creation. The Authority shall be governed by a Board of Directors consisting of one (1) Director for each Member, which is hereby established. The governing board shall be known as the "Board of Directors of the Los Vaqueros Reservoir Joint Powers Authority." All voting power shall reside in the Board and be exercised as specified in Section 3.3, below. By establishing the Authority and creating the Board of Directors, the Members do not intend to create any incompatibility between the service of a Member's governing body member on the Member's governing body, and his or her service as a Director of the Authority, and this Agreement shall be interpreted, if and where necessary, so that no such incompatible office exists.

2.2 Directors.

2.2.1 Directors Appointed; Term. Within thirty (30) days of the Effective Date of this Agreement, each Member shall designate and appoint, by a formal action of its governing body, either one (1) member of its governing body (provided that any Member which itself consists of one or more member agencies may appoint any member of one of its member agencies' governing bodies), or a management-level employee of the Member, or of any member agency of a Member, to act as its representative on the Board of Directors; and one (1) other governing body member or Member employee, either by name or position title, to act as an alternate to that Director so appointed. If a Director's or alternate's membership on the appointing Member's governing body ceases or that person ceases to be on the governing body of a Member's member agency, if applicable, or if the Director is an employee of the Member, or of a Member's member agency, and the Director's employment by the Member ceases, his or her membership on the Board shall also cease. If an alternate is an employee of a Member, and the alternate's employment by the Member ceases, his or her position as an alternate shall also cease. The alternate appointed by each Member shall have the authority to attend and participate in any meeting of the Board, but shall only be allowed to vote at any meeting of the Board when the regular Director is absent. At any meeting of the Board when the regular Director is absent, the alternate shall have the full authority of the Member to vote on any issue before the Board. Each Director shall hold office until his or her successor is selected by the appointing Member. Directors shall serve at the pleasure of the governing board of the appointing Member and may be removed at any time, with or without cause, in the sole discretion of the appointing Member's governing board. If a Director ceases to serve on the Board, the Member that appointed that Director shall select that Director's replacement, and may allow the alternate then serving to fill that Director's position on a temporary or permanent basis, in that Member's discretion.

2.2.2 Board Compensation. The Board shall serve without compensation from the Authority. Compensation may be provided as approved by the Member that appoints its representative Director and alternate, and any such compensation will be the responsibility of that Member.

2.3 Powers and Responsibilities of the Board. All of the power and authority vested in the Authority shall be exercised by the Board of Directors, which may delegate such power in its discretion. Notwithstanding the above, the Board shall not delegate its legislative powers. In exercising these powers, the Board shall undertake the following roles and responsibilities:

2.3.1 Fulfill the Authority's purposes;

2.3.2 Engage key Authority executives, including the Executive Director, as desired by the Board, and Legal Counsel;

2.3.3 Approve the engagement of a Financial Manager, Program Manager, Watermaster, and other consultants and advisors;

2.3.4 Approve annual budgets;

2.3.5 Approve agreements through which Project will be implemented;

2.3.6 Fund the Authority and Project through issuance of bonds and collections from Members; and

2.3.7 Establish committees for activities such as design, construction, and operations.

2.4 Provision for Bylaws. The Board may cause to be developed and may adopt, from time to time, such bylaws for the Authority to govern its day-to-day operations. Each Member shall receive a copy of any bylaws developed and adopted under this section.

ARTICLE 3 MEETINGS OF THE BOARD

3.1 Meetings. The Board shall meet as frequently as the Board deems necessary to conduct the Authority's business, but at least quarterly, and shall provide for the date, hour, and place of its regular meetings by Resolution of the Board filed with the governing body of each Member. The Board may meet by teleconference or by video conferencing, and in joint session with other public agencies and advisory bodies in accordance with California law.

3.2 Ralph M. Brown Act. All meetings of the Board, including without limitation, regular, adjourned regular, and special meetings, shall be called, noticed, held, and conducted in accordance with the provisions of the Ralph M. Brown Act, commencing with Section 54950 of the Government Code.

3.3 Voting. ***[Consensus was reached to have super-majority voting, but any litigation to be commenced by the JPA must be unanimously approved by the JPA Board. Per discussion on September 14, weighted voting alternative (Alternative 2, below) was added back into the Agreement for further discussion purposes.]***

ALTERNATIVE 1 – SUPER-MAJORITY; NON-WEIGHTED

3.3.1 Simple Majority Votes. Subject to the veto rights provided in subdivision 3.3.5, below, and the provisions of Sections 3.4 and 3.5, below, each Member shall have one vote, to be exercised by that Member's Director. Except as otherwise provided by law or as set forth in subdivisions 3.3.2, 3.3.3 and 3.3.4, below, all actions of the Board shall be approved on the affirmative vote of a majority of the Board members present at the meeting at which the action is considered.

3.3.2 Items Requiring at Least Sixty Percent for Approval. Notwithstanding subdivision 3.3.1, above, the following actions of the Board must be approved by at least sixty percent (60%) of the total number of Directors, but subject to Sections 3.4 and 3.5, below:

- 3.3.2.1 Approval of Operating Budget and Non-Operating Budget;
- 3.3.2.2 Approval of Capital Improvement Budget whenever that budget exceeds \$5,000,000;
- 3.3.2.3 Approval of an increase to a change order that exceeds the lesser or \$500,000 or 10% of the original contract amount, or which would result in exceeding the total previously approved budget for the specific facility;
- 3.3.2.4 Approval of any additional funding contributions under Section 7.9.2, below;
- 3.3.2.5 Any decision subject to Section 3.3.5, below; and

3.3.2.6 Approval of any contract with Cal-PERS or any other public employee retirement system.

3.3.3 ~~Items Requiring at Least Three-Quarters Votes for Approval.~~ Notwithstanding subdivision 3.3.1, above, the following actions of the Board must be approved by at least three-quarters (seventy-five percent (75%)) of the total number of Directors, but subject to Sections 3.4 and 3.5, below:

- 3.3.3.1 Approval of the admission of a new Member;
- 3.3.3.2 Approval of an amendment to the Agreement; provided that if the proposed amendment is to change the requirement for unanimous approval of action as set forth in Section 3.3.4, then any such amendment must have unanimous Board approval; and
- 3.3.3.3 Termination of the Agreement.

3.3.4 ~~Items Requiring Unanimous Approval.~~ Notwithstanding subdivision 3.3.1, above, the following actions of the Board must be unanimously approved by the Board:

- 3.3.4.1 Commencement of litigation by the Authority against any local, state or federal agency relating to the funding or operation of the Project; or against any Member to interpret or enforce this Agreement or otherwise relating to the Member's obligations concerning the Project; provided that the Member against whom that litigation is contemplated shall not be included in that unanimous vote requirement.
- 3.3.4.2 Any disproportionate disbursement made upon termination of this Agreement pursuant to Section 8.5, below.

++++ Continue with Section 3.3.5, renumbering will be reflected in further draft, regarding CCWD and EBMUD Veto Rights (page 13, below).

ALTERNATIVE 2 – WEIGHTED VOTING COMPONENT (redlined to show changes from Alternative 1)

3.3.1 Simple Majority Votes. Subject to the veto rights provided in subdivision 3.3.6, below, and the provisions of Sections 3.4 and 3.5, below, each Member shall have one vote

and the weighted votes determined in accordance with Section 3.3.2.1, below, where weighted voting is applicable in accordance with Section 3.3.2.2. A Member's votes shall be exercised by that Member's Director. Except as otherwise provided by law or as set forth in subdivisions 3.3.3, 3.3.4 and 3.3.5, below, all actions of the Board shall be approved on the affirmative vote of a majority of the Board members present at the meeting at which the action is considered and, where weighted voting is applicable in accordance with Section 3.3.2.2, by a majority of the weighted votes determined in accordance with Section 3.3.2.1, below. In the event of a tie in the number of votes cast, the Chair of the Board of Directors may cast a second vote to break that tie.

3.3.2 Weighted Voting.

3.3.2.1 For purposes of weighted voting under this Agreement, each Member's vote shall be allocated a weight determined by the Member's share of the total combined storage capacity and conveyance capacity of the Project, as set forth in that Member's Service Agreement, in proportion to the total combined storage capacity and conveyance capacity held by all of the Members, as allocated under all Members' Service Agreements. [weighted allocation provision subject to discussion if weighted voting is to be used]

3.3.2.2 Any Director may demand that approval of any matter presented for action by the Board of Directors be determined on the basis of weighted votes, as determined in Section 3.3.2.1, above. Such a demand must be made in writing and be conveyed to the Board at least seventy-two (72) hours before the meeting at which the vote will be considered. If a Director makes such a demand, then approval of the matter shall require the affirmative vote of Directors present at the meeting holding the percentage of votes required under this Section 3.3.

3.3.3 Items Requiring at Least Sixty Percent for Approval. Notwithstanding subdivision 3.3.1, above, the following actions of the Board must be approved by at least sixty percent (60%) of the total number of Directors, or if demand is made under Section 3.3.2.2, above, at least sixty percent (60%) of the total weighted votes, but subject to Sections 3.4 and 3.5, below:

3.3.3.1 Approval of Operating Budget and Non-Operating Budget;

3.3.3.2 Approval of Capital Improvement Budget whenever that budget exceeds \$5,000,000;

3.3.3.3 Approval of an increase to a change order that exceeds the lesser or \$500,000 or 10% of the original contract amount, or which would result in exceeding the total previously approved budget for the specific facility;

3.3.3.4 Approval of any additional funding contributions under Section 7.8.2, below;

3.3.3.5 Any decision subject to Section 3.3.6, below; and

3.3.3.6 Approval of any contract with Cal-PERS or any other public employee retirement system.

3.3.4 Items Requiring at Least Three-Quarters of Votes for Approval. Notwithstanding subdivision 3.3.1, above, the following actions of the Board must be approved by at least three-quarters (seventy-five percent (75%)) of the total number of Directors, or if demand is made under Section 3.3.2.2, above, at least three-quarters (seventy-five percent (75%)) of the total weighted votes, but subject to Sections 3.4 and 3.5, below:

3.3.4.1 Approval of the admission of a new Member;

3.3.4.2 Approval of an amendment to the Agreement; provided that if the proposed amendment is to change the requirement for unanimous approval of action as set forth in Section 3.3.5, then any such amendment must have unanimous Board approval; and

3.3.4.3 Termination of the Agreement; provided that termination of the Agreement shall not be subject to weighted voting.

3.3.5 Items Requiring Unanimous Approval. Notwithstanding subdivision 3.3.1, above, the following actions of the Board must be unanimously approved by the Board:

3.3.5.1 Commencement of litigation by the Authority against any local, state or federal agency relating to the funding or operation of the Project; or against any Member to interpret or enforce this Agreement or otherwise relating to the Member's obligations concerning the Project; provided that the Member against whom that litigation is contemplated shall not be included in that unanimous vote requirement.

3.3.5.2 Any disproportionate disbursement made upon termination of this Agreement pursuant to Section 8.5, below.

+++++ Continue with remainder of Article 3

3.3.6 [or 3.3.5 if no weighted voting] Veto Rights of CCWD and EBMUD. Notwithstanding subdivision 3.3.1, above, for any decisions by the Board of Directors that would adversely and materially affect a New Facility, a Modified Facility, a CCWD-Provided Facility or an EBMUD-Provided Facility, CCWD or EBMUD, as applicable in connection with the facility(ies) to be affected, shall have the right to veto that decision following an effort to meet and confer with other Members as follows: If CCWD or EBMUD declares its intention to veto an action during a meeting, the vote on that action may be delayed to a future meeting upon majority vote of the Board to allow the development of an alternative or modified recommended action, to be proposed at the next Board meeting, or as soon thereafter as Authority staff, the Administrator, the Executive Director (if one has been appointed), or the Members can obtain any further information or clarifying direction as needed to propose an alternative or modified recommended action. No proposed action shall be delayed pursuant to this section more than once, except with the consent of the Member which declared its intent to veto the action.

For purposes of this subdivision, an "adverse and material effect" includes the following: (a) a decision that would unreasonably increase operational costs of the subject facility by at least ten percent (10%) as compared to that facility's existing operational costs; (b) a decision that would decrease capacity of the subject facility; (c) a decision that would materially restrict CCWD or EBMUD,

as applicable, in their operation of the subject facility or in its ability to provide an adequate water supply within its service area; (d) a decision that would result in a material adverse impact on the quality of water conveyed from the Project; or (e) a decision that would cause the Project to fail to meet one or more of the conditions set forth in Resolution No. 03-24 adopted by CCWD's Board of Directors on June 18, 2003. In the event of such a veto, the Authority may not proceed with the action specified in that proposed decision. This subdivision shall be interpreted in a manner to protect CCWD's and EBMUD's interests in operating and managing the New Facilities, Modified Facilities, CCWD-Provided Facilities and EBMUD-Provided Facilities, respectively, while providing the other Members with the contemplated benefits from their investments in the Project.

3.4 Special Voting Rules regarding Contracts Entered into with a Member. Where the Authority is considering entering into an agreement with a Member, that Member shall not be entitled to vote in its capacity as a Member of the Authority on any such agreement to which that Member will be a party. In such a situation, for purposes of the determination of the vote needed for approval, that contracting Member shall not be counted as a voting Member of the Authority, such that the total number of voting Members is reduced by one in calculating total number of votes that may be cast and utilized in determining any applicable threshold for the Board's approval of any such action, and that Member's weighted voting allocation is removed from the total weighted voting calculation and the other Members' respective weighted voting amounts are recalculated without taking into account the contracting Member's proportionate storage capacity and conveyance capacity and that Member's storage capacity and conveyance capacity are removed from the Project's total for purposes of calculating any weighted vote. [last clauses would be deleted if weighted voting is not used]

3.5 Special Voting Rules Applicable to Grassland Water District. Due to the fact that Grassland Water District will not be making monetary contributions to the Authority, Grassland Water District will not be entitled to vote on financial matters impacting the Authority, including those items specified in Section 3.3.2, above; provided, however, that Grassland Water District shall be entitled to vote on financial matters concerning the administration of public benefits or the delivery of ecosystem benefits to south-of-Delta refuges. In any situation where Grassland Water District is not permitted to vote, for purposes of the determination of the vote needed for approval, Grassland Water District shall not be counted as a voting Member, such that the total number of voting Members is reduced by one in calculating total number of votes that may be cast and utilized in determining any applicable threshold for the Board's approval of any such action. [add provision similar to last clause in Section 3.4 if weighted voting is used]

3.6 Quorum. A majority of the Directors shall constitute a quorum for the transaction of business.

3.7 Board Action. The Board may act by resolution, ordinance, or motion. Unless otherwise provided in the bylaws or by law, ordinances shall not be required to be introduced and adopted at separate meetings of the Board.

3.8 Minutes. The Secretary of the Authority shall cause minutes of regular, adjourned regular, and special meetings to be kept and shall, as soon as possible after each meeting, cause a copy of the minutes to be forwarded to each Director and to each Member.

3.9 Rules. The Board may adopt from time to time such rules and regulations for the conduct of its and the Authority's affairs as may be required.

**ARTICLE 4
OFFICERS AND EMPLOYEES OF THE AUTHORITY**

4.1 Chair. At the Board of Directors' first meeting, and then in its January meeting of each year, it shall elect one of the Directors as Chair of the Board. The term of office for the Chair shall be one year. A Chair may not serve more than four (4) consecutive terms as Chair, and the foregoing term limit shall also apply to the Member on whose behalf the Chair is serving, such that no Member shall be allowed to have any Directors serving on its behalf serve more than a combined four (4) consecutive terms. The Chair of the Board shall preside at all meetings and shall perform such other duties as are specified by the Board of Directors. The position of Chair shall be elected on the basis of the individual Director and not on the basis of the underlying Member with which the Chair is affiliated.

4.2 Vice-Chair. At the Board of Directors' first meeting, and then in its January meeting of each year, it shall elect one of the Directors as Vice-Chair of the Board. The term of office for the Vice-Chair shall be one year. The Vice-Chair shall perform all the duties of the Chair in the absence of the Chair, or in the event the Chair of the Board is unable to perform such duties, and shall perform such other duties as are specified by the Board of Directors.

4.3 Secretary. The Board may appoint the Authority's Secretary or may delegate the appointment of the Authority's Secretary to the Administrator; provided that if the Administrator position has been removed, then the Board shall appoint the Authority's Secretary. If the Board does not elect to appoint an individual of its own choosing as the Secretary, the Secretary shall serve at the pleasure of the Administrator and may be removed at any time, with or without cause, in the sole discretion of the Administrator or, if the Administrator is an entity, the Administrator's governing board or a management-level employee of the Administrator. The Secretary shall be responsible for the minutes and other records of the proceedings of the Board of Directors and shall perform such other duties as specified by the Administrator pursuant to the Administrative Agreement, as applicable. If the Board elects to appoint another individual of its own choosing, the Secretary shall perform such other duties as the Board of Directors specifies.

4.4 Treasurer and Auditor/Controller. Pursuant to Government Code Sections 6505.5 and 6505.6, the Board may appoint the Authority's Treasurer and Auditor/Controller or may delegate the appointment of the Authority's Treasurer and Auditor/Controller to the Administrator; provided that if the Administrator position has been removed, then the Board shall appoint the Authority's Treasurer and Auditor/Controller. If the Administrator is an entity, it may appoint its senior financial officer (such as its chief financial officer, director of finance, or finance manager, as designated by the Administrator) as the Treasurer and Auditor/Controller. The Treasurer shall be the depository and have custody of all money of the Authority, from whatever source, and shall have all of the duties and obligations set forth in Sections 6505 and 6505.5 of the Government Code. The Treasurer shall also manage the Authority's billing and cash management, financial reporting and debt; engage the independent auditor to review the Authority's financial statements; and report to the Authority's Executive Director or to the Administrator if no Executive Director has been appointed. The offices of Treasurer and Auditor/Controller may be held by separate individuals, or combined and held by one individual as the Board may elect. If the Board does not elect to appoint another individual of its own choosing as the Treasurer and Auditor/Controller, the Treasurer and Auditor/Controller shall serve at the pleasure of the Administrator and may be removed at any time, with or without cause, in the sole discretion of the Administrator or, if the Administrator is an entity, the Administrator's governing board or a management-level employee of the Administrator.

4.5 Administrator.

4.5.1 Generally. The Board of Directors shall select the Administrator, which shall provide management and administrative services for the Authority, as more specifically described in Section 4.5.2, below. CCWD shall serve as the initial Administrator, as set forth in the Administrative Agreement. The Board may, in its discretion, upon the termination of the Administrative Agreement,

appoint a subsequent Administrator to replace CCWD, may transfer some or all of the Administrator's duties to the Executive Director hired under Section 4.6, below, or may combine the Administrator's position with the Executive Director; subject, however, to ensuring that any contractual obligations CCWD has undertaken with respect to the administration of the Project, including under the Early Funding Agreement, are met. Until such time as an Executive Director is hired, the Administrator shall report to the Board. After an Executive Director is hired, the Administrator shall report to the Executive Director and be subject to the Executive Director's supervision, subject to compliance with any existing contractual obligations of the Administrator.

4.5.2 Administrator Services. Subject to the Board's revision of duties of the Administrator, which may be transferred to the Executive Director in the Board's discretion, the Administrator shall perform all services reasonably necessary for the management and administration of the Authority including, but not limited to:

- (a) coordinating the planning, design, permitting (including compliance monitoring), operations modeling and analysis, and procurement activities necessary to construct and operate the Project, including through funds provided by the Early Funding Agreement, which CCWD shall continue to manage as the initial Administrator, and Interim Funding Agreement;
- (b) coordinating and preparing for Board meetings;
- (c) identifying and selecting key staff that will provide services to the Board and the Authority, including staff who may potentially serve as Secretary and Treasurer and Auditor/Controller, as the Board or Administrator may determine;
- (d) being responsible for the appointment, employment, management, and/or termination of any personnel (other than the Executive Director and Authority attorney), contractors, or consultants providing services to the Authority including, but not limited to, contractors and consultants necessary for the financing, planning, design, permitting and procurement of the Project;
- (e) performing administrative tasks related to the Board's selection and appointment of the Authority Attorney;
- (f) implementing the policies, decisions, and directions of the Board, as provided to the Administrator;
- (g) conducting communications and outreach support and website hosting;
- (h) coordinating and conferring with the Members' technical staffs relative to Project-related functions; and
- (i) such other duties as are determined by and assigned by the Board.

4.5.3 Compensation. The Administrator shall be compensated for the services it renders to the Authority as specified in the Administrative Agreement, or in any other contractual arrangement between the Administrator and the Authority.

4.5.4 Administrator Staff. If the Administrator is an entity, the Administrator shall identify key staff that shall provide services required of the Administrator, including one employee who shall serve as the main point of contact for the Authority. Such key staff identified by the Administrator shall be qualified to perform services required of the Administrator. Unless otherwise agreed in writing by the Authority, such key staff shall at all times remain under the exclusive direction and control of the Administrator and the Authority shall not have any right to discharge or discipline any member of the Administrator's staff. Subject to payment by the Authority as provided in the Administrative Agreement or other agreement, the Administrator shall be responsible for all compensation, supervision, and administrative costs relating to its staff. If the Administrator is an individual, the Administrator shall coordinate the retention of any outside staff with the Board and obtain approval of such staff positions from the Board before hiring or retaining any such staff.

4.5.5 Independent Contractor. Until such time, if any, as the Administrator is hired as an Authority employee, to the extent allowed by law, the Administrator shall be retained as an independent contractor and not an employee of Authority. No employee or agent of the Administrator shall become an employee of the Authority, except as may be agreed in writing. Any Administrator employees or agents assigned to provide services under this Agreement shall remain under the exclusive control of the Administrator.

4.6 Executive Director. The Board of Directors may hire an Executive Director to work with the Administrator in connection with the duties specified under Section 4.5.2, above. The Executive Director may be an employee of the Administrator. Upon the hiring of an Executive Director, the Board may transfer any of the Administrator's duties to the Executive Director, as may be feasible based on applicable contractual limitations set forth in the Early Funding Agreement. The Executive Director shall be an employee of the Authority, unless that position is also filled by an employee of the Administrator or of a Member. It is contemplated that the Executive Director would report directly to the Board and would manage Authority activities, ensure that the Board receives appropriate and timely information, supervise the Administrator, including coordinating Project activities with the Administrator, and ensure that the Authority provides services to the Members in accordance with the respective Service Agreements.

4.7 Authority Attorney.

4.7.1 Appointment. The Attorney for the Authority shall be appointed by the Board of Directors, provided that an individual, office, or firm providing general counsel services to one of the Members shall not serve as the Authority Attorney. Such individuals, offices, or firms may, however, provide special counsel services to the Authority. Notwithstanding the above, the general counsel to one of the Members may provide interim general counsel services until the Board appoints an Authority Attorney.

4.7.2 Duties. The Attorney for the Authority or a designated deputy shall attend all meetings of the Board of Directors; provided, however, that the absence of the Authority Attorney shall not affect the validity of any meeting. The Attorney shall perform such other duties as the Board of Directors specifies, including, but not limited to, obtaining specialized legal services.

4.8 Program Manager. The Board may authorize the hiring of a Program Manager, who shall report to the Executive Director. The Program Manager shall coordinate with the Administrator and/or Executive Director regarding various design and construction activities for the Project, including coordination with CCWD and EBMUD in accordance with the Design and Construction Agreement and O & M Agreements with respect to decisions likely to have a cost impact on the Authority and the Members. Such coordination shall include, but not be limited to, budget tracking, scheduling and quality control/quality assurance, with the understanding that CCWD and EBMUD have primary responsibility for the design and construction of their respective facilities, as will be

specified in the Design & Construction Agreements. The Program Manager, in consultation with the Executive Director and subject to Board approval in accordance with Authority policies, may contract for additional services that may be required.

4.9 Watermaster. The Board may authorize the hiring of a Watermaster, who shall report to the Executive Director. The Watermaster shall oversee the operations of the Project in coordination with CCWD as to CCWD-Provided Facilities and with EBMUD as to EBMUD-Provided Facilities. The Watermaster's duties shall include scheduling necessary diversions and deliveries of stored water in response to Members' requests on behalf of the Members, coordinating Members' storage and conveyance needs with CCWD's system operator, tracking the delivery of Services to the Members, and ensuring compliance with all reporting requirements and coordinated operations agreements with the United States Department of Interior, Bureau of Reclamation and the California Department of Water Resources. The Watermaster shall perform his or her duties in accordance with the Facilities Usage Agreements and operating protocols to be adopted by the Board of Directors, but such protocols shall not restrict CCWD's or EBMUD's ability to manage their respective facilities. Any Watermaster decision shall be subject to an appeals process to be established by the Board.

4.10 Official Bond. Pursuant to Government Code section 6505.1, the public officer, officers or persons who have charge of, handle or have access to any property of the Authority shall file an official bond in an amount to be fixed by the Board of Directors of the Authority.

4.11 Additional Officers and Employees. The Board shall have the power to appoint such additional officers and to make modifications to the Authority's organization chart—and the Executive Director shall have the power to hire and terminate such employees, assistants, contractors, consultants, and others, as may be appropriate.

ARTICLE 5 COMMITTEES

5.1 Committees. The Board of Directors, by a majority vote, may form committees for any purpose. Such vote shall designate the method for appointing committee members, the scope of the duties and responsibility of the committee, whether the committee is a standing or ad hoc committee, and such other matters as the Board may deem appropriate. Standing committee meetings are subject to the Ralph M. Brown Act, commencing with Section 54950 of the Government Code. Such committees may include committees consisting solely of Members' staffs to provide technical review and input concerning Project-related issues.

ARTICLE 6 PROJECT OPERATIONS

6.1 Sub-Projects. Upon approval by a majority of the Board of Directors, some of the Members may establish a sub-project that such Members will undertake through the Authority for matters not deemed to be of general benefit to all Members, provided that no Member shall be involved in any such sub-project without the approval of its governing body. A specific written sub-project Agreement between the Members who consented to participate in the specific sub-project and the Authority shall be established for each sub-project to set forth the respective obligations, functions, and rights of the participating Members and of the Authority. A budget for each sub-project shall be established in accordance with Section 7.5, below. The Directors representing the Members who will be involved in financing and implementing the specific sub-project, or their respective designees, shall constitute a "Sub-Project Committee," for purposes of administration and implementation of the specific sub-project. Notwithstanding the foregoing, no debt shall be incurred by the Authority for a specific sub-project without the unanimous consent of the Board. Any contributions approved by the Sub-Project Committee and approved by the participating Members

shall be paid by the participating Members. To the extent allowed by law, the Members participating in any sub-project shall indemnify and hold harmless the Authority and the Members not participating in the sub-project from any and all claims, demands, damages, liabilities, fines, expenses and related costs and fees, including attorneys' and experts' fees, arising from or related to the particular sub-project, except to the extent of the Authority's or non-participating Member's negligent or intentional acts or omissions.

6.2 CCWD-Provided Facilities. In accordance with the voting provisions set forth in Section 3.3.4, above, CCWD will retain a veto right with respect to any decision by the Board of Directors that would adversely and materially affect a New Facility or Modified Facility for which CCWD is designated as the builder and operator on Exhibit B hereto, and CCWD-Provided Facilities. CCWD may authorize the Authority to take actions and/or make decisions with respect to those facilities in accordance with the applicable Design & Construction Agreements and O & M Agreements.

6.3 EBMUD-Provided Facilities. In accordance with the voting provisions set forth in Section 3.3.4, above, EBMUD will retain a veto right with respect to any decision by the Board of Directors that would adversely and materially affect a New Facility or Modified Facility for which EBMUD is designated as the builder and operator on Exhibit B hereto, and EBMUD-Provided Facilities. EBMUD may authorize the Authority to take actions and/or make decisions with respect to those facilities in accordance with the applicable Design & Construction Agreements and O & M Agreements.

ARTICLE 7 FINANCES

7.1 Fiscal Year. The Fiscal Year of the Authority shall be as defined in Section 1.1 of this Agreement.

7.2 Operating Budget. Prior to the start of each Fiscal Year, the Board shall adopt an Operating Budget (the "Operating Budget") for all expenditures to be made by the Authority during that Fiscal Year, based upon the total Costs of Service, excluding expenditures included in the Non-Operating Budget and Capital Project Budget (the "Operating Budget Costs of Service") set forth in the Service Agreements and related financial projections. For the Authority's initial year, the Operating Budget shall be based upon initial Operating Budget Costs of Service set forth in the Project's pro-forma financial model and as established by a CalSim simulation model, subject to adjustment based on actual circumstances. The Board shall allocate Operating Budget Costs of Service to each Member in proportion to the Member's use of Project facilities, operational priorities and other benefits, in accordance with the Member's Service Agreement, and shall take into account any non-monetary contributions being received from Grassland Water District. The Operating Budget shall take into consideration the amounts the Authority will receive under the Service Agreements, and shall be prepared in sufficient detail to constitute an operating outline for the purpose of establishing contributions to be billed to and paid by, or otherwise contributed with respect to any non-monetary contributions, the Members in accordance with their respective Service Agreements. The Operating Budget shall outline anticipated revenues and planned expenditures to be made during the Fiscal Year by functional category such as operations and maintenance, administration, projects, programs, planning, study and any applicable contributions to operate related reserves.

7.3 Non-Operating Budget. Prior to the start of each Fiscal Year, the Board shall adopt a non-operating budget (the "Non-Operating Budget") that sets forth revenue requirements to pay debt service on all bonds, loans or other indebtedness of the Authority and other anticipated revenues and planned expenditures for non-operating financial activities for the Fiscal Year. The Non-

Operating Budget shall take into consideration the amounts the Authority will receive under the Service Agreements, and shall be prepared in sufficient detail to constitute an operating outline for the purpose of establishing contributions to be billed to and paid by, or otherwise contributed with respect to any non-monetary contributions, the Members in accordance with their respective Service Agreements. The contributions approved by the Board shall be paid by the Members pursuant to Section 7.7, below. Any Member which has opted under Section 7.8, below, to pay its share of Project capital costs through a lump sum contribution, rather than financing that contribution through participating in the Authority's bond issuance(s), shall not be required to make further payments under any Non-Operating Budget until that lump sum contribution is exhausted and further contribution from that Member is necessary to meet that Member's share of costs of non-operating financial activities of the Authority.

7.4 Capital Project Budget. Prior to the start of each Fiscal Year, the Board shall adopt a capital project budget (the "Capital Project Budget") to assess contributions and expenditures to be paid by the Members during the Fiscal Year for capital projects needed for major repair, replacement, expansion and efficiency of Project facilities, as approved by the Board. The Capital Project Budget shall take into consideration the amounts the Authority will receive under the Service Agreements, and shall be prepared in sufficient detail to constitute an operating outline for the purpose of establishing contributions to be billed to and paid by, or otherwise contributed with respect to any non-monetary contributions, the Members in accordance with their respective Service Agreements. The Authority shall coordinate with CCWD regarding the establishment of that Capital Project Budget to ensure that costs are properly allocated as between the Authority and CCWD. The contributions approved by the Board shall be paid by the Member Agencies pursuant to Section 7.7, below. Any Member which has opted under Section 7.8, below, to pay its share of Project capital costs through a lump sum contribution, rather than financing that contribution through participating in the Authority's bond issuance(s), shall not be required to make further payments under any Capital Project Budget until that lump sum contribution is exhausted and further contribution from that Member is necessary to meet that Member's share of Authority capital costs that would be payable under any Capital Project Budget.

7.5 Specific Sub-Project Budgets. In addition to the foregoing Operating Budget, Non-Operating Budget and Capital Project Budget, Authority staff, in consultation with the applicable Sub-Project Committee, shall develop a budget for any sub-project established in accordance with Section 6.1, above. Any contributions approved by the Sub-Project Committee and approved by the participating Members shall be paid by the participating Member Agencies pursuant to Section 7.7, below.

Each sub-project budget shall include, without limitation, the following:

- (a) Administrative expenses;
- (b) Studies and planning costs;
- (c) Engineering and construction costs;
- (d) The allocation of costs, including debt service costs, if any, among participating Members;
- (e) Annual maintenance and operating expenses for the sub-project; and
- (f) A formula for allocating annual maintenance and operating expenses, if any.

7.6 Failure to Obtain Budget Approvals. In the event the Board does not approve one or

more budgets prior to the start of a Fiscal Year the Authority shall continue to operate at the level of expenditure as authorized below:

7.6.1. Operating Budget. The Operating Budget shall be at the expenditure level authorized by the last approved Operating Budget, and the allocation of Operating Budget Costs of Service to each Member shall be in proportion to the allocation of such costs in the last approved Operating Budget. The CPI shall mean the change in CPI for Urban Wage Earners and Clerical Workers for San Francisco-Oakland-Hayward, California for the all items category for the 12-month period ending the February prior to the beginning of the Fiscal Year budgeted, as determined by the U.S. Department of Labor, Bureau of Labor Statistics, or other mutually agreeable source if such a CPI is no longer available. This factor will be applied to the budget until such time as a new Operating Budget is approved by the Authority. Any shortfall in revenues will be made up from available reserves dedicated by the Board for such a purpose, and if those available reserves are insufficient to cover the shortfall, any other available reserve funds not designated by the Board for other purposes or otherwise legally restricted may be used to meet that shortfall. In the event that a shortfall in available funds exceeds available unrestricted reserves of the Authority, such resulting unfunded shortfall shall be carried forward into the subsequent Fiscal Year. Members shall have no obligation to cure such unfunded shortfall other than as may be provided in the applicable Service Agreement. As used herein, "reserves" shall mean any available cash or investments.

7.6.2. Non-Operating Budget. The Non-Operating Budget shall automatically be established at the required level necessary to meet annual debt service requirements including any revenue coverage covenants and the allocation of any applicable Costs of Service to each Member shall be in proportion to the allocation of such costs in the last approved Operating Budget.

7.6.3. Capital Project Budget. The capital project budget shall automatically be established at the required level necessary to implement capital projects previously approved by the Authority and the allocation of any applicable Costs of Service to each Member shall be in proportion to the allocation of such costs in the last approved Operating Budget.

7.7 Payments of Amounts Due; True-Up of Costs. The payments owed for contributions from each Member to the Authority shall conform to amounts payable, or any non-monetary contributions to be provided to the Authority, under each Member's Service Agreement and in accordance with the budgets approved by the Board pursuant to Sections 7.2 through 7.5, inclusive. Amounts to be paid to the Authority may be divided into a fixed, annual component and a variable component payable on a monthly or other periodic basis. Any amounts to be paid to the Authority shall be due, payable, and delivered by the Members to the Authority within forty-five (45) days after receipt of a billing therefor from the Authority. To the extent permitted by state law, the Authority may impose interest at the rate of ten percent (10%) per annum on any unpaid and past due contributions, from the date due to the date payment is received by the Authority. At the end of each Fiscal Year, the Authority will compare the actual costs incurred as compared to the budgeted costs paid by Members. If a Member has paid in excess of its share of the Authority's actual costs, the Member shall have the option to either receive a refund of that excess or have that excess carry over as a credit to the benefit of that Member for the next Fiscal Year. If a Member's share of the Authority's actual costs exceeds what that Member has previously paid to the Authority, the Authority shall invoice that Member, which amount shall be due and payable as specified above.

7.8 Member Lump Sum Payments of Project Capital Costs. Notwithstanding any other provision of this Agreement, a Member may elect to pay its share of Project capital costs, as determined under its Service Agreement, in lieu of participating in any bonds the Authority will issue. Any such lump sum payments shall be used to offset that Member's share of Project capital costs or other non-operating costs included in any Non-Operating Budget or Capital Project Budget, as applicable, until such time as the lump sum payment amount has been exhausted. In the event the

lump sum payment amount is nearing exhaustion (that is, has reached a level of \$10,000 or less), the Authority shall provide written notice to the Member of the need to deposit additional amounts with the Authority, in such amount as the Authority, acting through its Administrator or Executive Director, shall determine in its reasonable discretion, and the Member shall deposit that amount within sixty (60) days of receipt of notice from the Authority.

7.9 Funds, Accounts and Reports. There shall be strict accountability of all funds and reporting of all receipts and disbursements.

7.9.1 Sources of Funds. The sources of funds available to the Authority may include, but are not limited to, the following:

- (a) Grants, donations, and loans received by the Authority from local, state, or federal agencies, including any amounts received under the Early Funding Agreement.
- (b) Funds collected from Members under the Service Agreements.
- (c) Funds collected from Members, including, but not limited to, funds paid pursuant to the Interim Funding Agreement.
- (d) Funds received from state and federal disaster relief agencies.
- (e) Funds obtained by issuing bonds, notes, warrants and other evidences of indebtedness.
- (f) "In kind" contributions from Members, include refuge resources provided by Grassland Water District; provided that the Board of Directors shall establish a procedure to ensure that any "in kind" contributions comply with any applicable contractual or regulatory requirements and are fair and reasonable in relation to the benefits provided to the contributing Member, and further the Authority's interests.
- (g) Funds from any other source derived.

7.9.2 Interim Funding Plans. The Members intend for the Authority to fund initial Authority costs through the Interim Funding Agreement, and other agreements and revenue sources available to the Authority for such purposes, including through the Service Agreements. Notwithstanding the foregoing, in the event the Board determines, by at least a two-thirds (2/3rds) vote in accordance with Article 3, above, which must include San Francisco Public Utilities Commission among the approving Members, that certain costs cannot be funded through such revenue sources, each Member agrees that it will contribute to a fund or budget approved by the Board in such proportion as the Board shall reasonably determine, as set forth in this article, taking into consideration any non-monetary contributions being received from Grassland Water District. Notwithstanding the foregoing, any financial obligation of San Francisco under this section is subject to Section 7.13.

7.9.3 Long-Term Funding Plans. The Members intend that all Authority activities will ultimately be funded through various Service Agreements under which the Members will pay or otherwise contribute for services provided by the Authority. The Members intend that the Service Agreements will, when taken together, be sufficient to fund all activities of the Authority, including, but not limited to, all administrative, capital expense, and operation and maintenance costs of the Authority and the Project.

7.9.4 Accounts. Revenues or funds received or made available to the Authority from any source whatsoever, shall be deposited into accounts that may be established by the Authority, and may be expended by the Authority in any legal manner, subject to such reservations as may be imposed by the Authority from time to time.

7.9.5 Reports. The Treasurer shall, within one hundred and eighty (180) days after the close of each Fiscal Year, give a complete written report of all financial activities for such Fiscal Year to the Board of Directors and to each Member. The Authority's books and records shall be open to inspection at all reasonable times by representatives of each Member. The Treasurer shall prepare and provide such additional reports, including audited financial statements and ongoing disclosure reports, as are required by separate agreements entered into by the Authority.

7.10 Payments and Advances. No expenditures in excess of those budgeted shall be made unless otherwise approved by the Authority's Board.

7.11 Audit. In accordance with Sections 6505 through 6505.6 of the Government Code, the Treasurer shall cause an annual audit of the accounts and records of the Authority to be made and reported. The audit shall be conducted by an independent certified public accountant or public accountant. The audit shall conform to generally accepted auditing standards. Such report shall be filed within twelve (12) months of the end of the Fiscal Year under examination.

7.12 Procurement Methods. The Board may adopt such policies relating to procurement of services, equipment, supplies, and other materials needed to accomplish the purposes of this Agreement.

7.13 San Francisco Certification of Funds; Budget and Fiscal Provisions. The financial obligations of the City and County of San Francisco (the "City," acting through the San Francisco Public Utilities Commission as a Member of the Authority) under this Agreement are subject to and contingent upon the budget and fiscal provisions of the City and County of San Francisco's Charter. Charges will accrue to San Francisco only after prior written authorization certified by the City's Controller, and the amount of City's obligation hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization. San Francisco's funding obligations under this Agreement will terminate without penalty, liability or expense of any kind to City at the end of any fiscal year if funds are not appropriated for the next succeeding fiscal year. If

funds are appropriated for a portion of the fiscal year, San Francisco's funding obligations under this Agreement will terminate, without penalty, liability or expense of any kind at the end of the term for which funds are appropriated. City has no obligation to make appropriations for this Agreement in lieu of appropriations for new or other agreements. City budget decisions are subject to the discretion of the Mayor and the Board of Supervisors. The Authority's assumption of risk of possible non-appropriation is part of the consideration for this Agreement. This section controls against any and all other provisions of this Agreement. In the event the City fails to appropriate adequate funds in any fiscal year to meet the City's obligations under its Service Agreement or other financial obligations under this Agreement, the Authority may, in the sole discretion of the Authority's Board of Directors, suspend any benefits the City would receive from the Project under the City's Service Agreement with the Authority until such time as all financial obligations owed to the Authority are satisfied, provided that the Authority has first given the City a minimum of sixty (60) days' advance written notice of such suspension. If the City does not satisfy its financial obligations following receipt of the Authority's written notice for a period of one (1) year from the effective date of the suspension, the City shall be deemed to have withdrawn from the Authority for purposes of Section 8.4, below. The Authority shall not impose interest on the City's financial obligations during this one (1) year period.

ARTICLE 8 TERMINATION / AMENDMENT; WITHDRAWAL

8.1 Duration and Termination. This Agreement shall become effective as of the Effective Date and shall continue in full force and effect until terminated by action taken by at least three-quarters (3/4ths) of the Board and ratified by at least three-quarters (3/4ths) of the governing bodies of the Members. Notwithstanding any other provision of this Agreement, the decision to terminate this Agreement shall not be subject to weighted voting. If at any time there are only two (2) Members of the Authority and one (1) of those Members intends to withdraw, the other Member's written consent to terminate this Agreement shall not be unreasonably conditioned or delayed. Notwithstanding the prior provisions of this Section 8.1, this Agreement and the Authority shall continue to exist for the purpose of disposing of all claims, distribution of assets, and all other functions necessary to conclude the affairs of the Authority.

8.2 Amendment. This Agreement may be amended at any time by action taken by at least three-quarters (3/4ths) of the Board (but subject to the provision of Section 3.3.3.2 [or 3.3.4.2], above), and if demand is made under Section 3.3.2.2, above, at least three-quarters (seventy-five percent (75%)) of the total weighted votes; and ratified by at least three-quarters (3/4ths) of the governing bodies of the Members; provided that Exhibit B to this Agreement may be amended by the Administrator or Executive Director, with majority vote of the Board approving such amendment to Exhibit B, to reflect changes to the Project's facilities approved by the Board of Directors.

8.3 Withdrawal. A Member may only withdraw from the Authority as follows:

8.3.1 Failure to Execute Interim Funding Agreement. In the event a Member does not execute the Interim Funding Agreement or other agreement provided under Section 7.9.2 to provide interim funding to the Authority on or before June 30, 2021, or such later date as the Board shall establish, that Member shall be deemed to have withdrawn from the Authority and shall have no further rights or obligations under this Agreement.

8.3.2 Failure to Execute Service Agreement. In the event a Member does not execute its Service Agreement on or before September 30, 2021, or such later date as the Board shall establish, that Member shall be deemed to have withdrawn from the Authority and shall have no further rights or obligations under this Agreement.

8.3.3. Additional Funding Contribution Required Under Section 7.9.2. Subject to Section 8.3.8, in the event a Member is required to make an additional monetary contribution pursuant to Section 7.9.2, above, which that Member does not desire to make or otherwise disagrees with, the Member may withdraw from the Authority upon at least sixty (60) days' written notice to the other Members; provided that the Member desiring to withdraw shall meet and confer with the other Members during that notice period in an attempt to resolve any disputed issues. In the event of such a withdrawal, the withdrawing Member shall forego any funds previously contributed to the Authority, unless otherwise agreed in writing or as set forth under Section 8.4, below.

8.3.4 Engineer's Estimate is Too Expensive or Construction Bids are Too High. Subject to Section 8.3.8, in the event a Member concludes the engineer's estimate for any work on the Project is too expensive or where construction bids exceed the engineer's estimate by at least twenty percent (20%), then a Member may initiate a meet and confer process among the Members to discuss those cost issues, which meeting shall take place within thirty (30) days after the Member gives notice of its desire for that meeting. If upon conclusion of that meet and confer process the Member that initiated that process is not satisfied with the estimate or bids, then that Member may withdraw from the Authority upon at least sixty (60) days' written notice to the other Members.

8.3.5 Withdrawal of Other Members. Subject to Section 8.3.8, in the event that at least two (2) Members have withdrawn from the Authority under this Section 8.3 and the result of such withdrawals has made remaining in the Authority cost prohibitive for a Member, then any other Member may withdraw from the Authority upon at least sixty (60) days' written notice to the other Members.

8.3.6 Revocation or Unacceptable Conditioning of State or Federal Funding. In the event the State of California or the federal government withdraws any previously approved funding for the Project or conditions such funding in a manner a Member deems unacceptable prior to the time when the Authority has issued any revenue bonds for the Project, any Member may withdraw from the Authority upon at least sixty (60) days' written notice to the other Members.

8.3.7 Unacceptable Permit Conditions. Subject to Section 8.3.8, in the event any entity or jurisdiction whose approval must be obtained to design, construct, or operate the Project conditions its approval in a manner a Member deems unacceptable, such Member may withdraw from the Authority upon at least sixty (60) days' written notice to the other Members.

8.3.X Additional Terms for Withdrawal by San Francisco. In the event that San Francisco is unable to: (1) obtain agreements with the California Department of Water Resources and/or the South Bay Aqueduct (SBA) Contractors to allow for the conveyance of water supplies through the SBA for use by San Francisco and its wholesale customers, (2) secure approval of a permanent water supply source for storage in the Los Vaqueros Reservoir, and/or (3) obtain agreements necessary to convey that source water or its equivalent to the Los Vaqueros Reservoir, San Francisco may withdraw from the Authority upon at least sixty (60) days' written notice to the other Members.

8.3.8 Approval once Revenue Bonds are Issued. Notwithstanding the foregoing subsections in this Section 8.3, after such time as the Authority has issued revenue bonds for the Project, a Member may withdraw from the Authority only if some or all of the other Members have agreed to assume the withdrawing Member's obligations under such bonds, unless the withdrawing Member has prepaid its entire financial obligation to the Authority and accordingly has not pledged its revenues towards repayment of the bonds. The Authority shall not issue revenue bonds before all construction bids have been received and any meet and confer process undertaken pursuant to Section 8.3.4 has concluded.

8.4 Effect of Withdrawal.

8.4.1 A withdrawal from the Authority constitutes a withdrawal of that Member's representative Director from the Board of Directors, including in the event a Member's obligations under any revenue bonds have been assumed by another Member as stated in Section 8.3.8, above. If at any time there are only two (2) Members, any desired withdrawal shall be subject to the termination provisions of this Agreement. Unless otherwise agreed upon by all of the remaining Members, the withdrawal of a Member shall not terminate its responsibility to contribute its share of any obligation incurred by the Authority, as determined by the Board of Directors based upon that Member's obligations under the Interim Funding Agreement, its respective Services Agreement (if the Member has executed that agreement), or otherwise under this Agreement, or to perform any other obligation arising from a separate agreement or other legally binding obligation, including amounts determined by the Board for (1) liabilities and claims accrued during the time the agency was a Member (including any future obligations arising from retirement benefits for past and existing employees of the Authority, if any) or (2) budgeted expenses for the Fiscal Year in which notice of intent to withdraw is given. Except as the withdrawing Member may agree in writing with the Authority, the withdrawing Member shall automatically relinquish all rights as a Member under this Agreement, on the effective date of the withdrawal.

8.4.2 For any Member that has prepaid its entire financial obligation to the Authority and subsequently decided to withdraw from the Authority, the Board shall determine an equitable allocation of such monies previously paid to the Authority and return to that withdrawing Member any uncommitted funds, provided that any such refund may be structured to ensure it does not materially adversely impact the Authority's financial condition. The Board's determination of that equitable allocation shall take into consideration the amount of Project costs that have been paid through payment of principal under any revenue bonds the Authority has issued in the period since the withdrawing Member prepaid its financial obligation.

8.5 Disbursement Upon Termination; Post-Termination Liabilities. Upon termination of this Agreement and after payment of all liabilities, costs, expenses, and charges validly incurred under this Agreement, the Board may, in its discretion and by a unanimous vote of the then-current Directors, distribute all remaining assets of the Authority based on an apportionment the Board deems equitable. Any further liabilities that may accrue after termination of this Agreement shall be allocated among the former Members in the same proportion as the Authority's expenses are allocated under the Operating Budget at the time of the termination; provided that the Board shall take into consideration any non-monetary contributions Grassland Water District may provide with respect to its share of such liabilities.

ARTICLE 9 SPECIAL PROVISIONS

9.1 Insurance. The Authority shall maintain types and levels of insurance coverage for the Authority as the Board of Directors determines to be reasonably adequate.

9.2 Liability of Authority, Board, Officers, Employees. As allowed by Government Code Section 6508.1, the debts, liabilities, and obligations of the Authority, with the exception of retirement liabilities of the Authority, if any, shall be the debts, liabilities, and obligations solely of the Authority and not the debts, liabilities, and obligations of any of the Members or any of their respective members, officers, directors, employees, or agents. The Authority, its Directors, officers, employees, staff, and agents shall use ordinary care and reasonable diligence in the exercise of their powers and in the performance of their duties pursuant to this Agreement. No Member, its officers, directors, or employees shall be responsible for any action taken or omitted by any other Member, or its members, officers, directors, or employees. To the extent allowed by law, the Members repudiate the provision

for joint and several liability provided under Government Code Section 895.2, and agree, pursuant to Government Code Section 895.4, that each Member shall fully indemnify and hold harmless each other Member and its agents, officers, employees, and contractors from and against all claims, damages, losses, judgments, liabilities, expenses, and other costs, including litigation costs and attorney fees, arising out of, resulting from, or in connection with any action taken or omitted to be taken by such Member under this Agreement. The Members intend that each Member provide indemnity or contribution in proportion to that Member's responsibility for any such claim, damage, loss, judgment, liability, expense or other cost.

9.3 New Members. It is recognized that public agencies other than the original Members to this Agreement may wish to participate in the Authority. As determined by the Board of Directors, in its sole discretion, any such public agency must have the common powers specified in Recitals A and B, above, must be credit worthy, and must provide benefits to the Project and other Members. Any proposed new Member must meet all established principles or requirements adopted by any Member with respect to potential participation in the Project that are in effect at the time the proposed new Member applies to become a Member. Additional public agencies may become Members upon such terms and conditions as approved by at least three-quarters (3/4ths) of the Board, including establishment of an appropriate cost allocation for that new Member and payment by the new Member of an acceptable financial contribution to offset prior expenses incurred by the existing Members in developing and operating the Project. Any new Member must be approved by at least three-quarters (3/4ths) of the governing boards of the existing Members of the Authority, evidenced by the execution of a written amendment to this Agreement signed by the new Member.

9.4 Retirement System. The Authority shall not enter into a contract with the California Public Employees' Retirement System and/or any other public retirement system without the approval of two-thirds (2/3rds) of the Board and ratification by at least two-thirds (2/3rds) of the governing bodies of the Members. The Members acknowledge that if the Authority enters into any such contract, as referenced in Section 9.2., above, the Members may have responsibility under Government Code Section 6508.2 for the Authority's retirement liabilities in the event this Agreement is terminated or the Authority terminates that contract. In such a situation, the Members shall attempt to reach mutual agreement on the allocation of those liabilities among the Members, and understand that if they unable to reach such a mutual agreement, those liabilities shall be allocated among the Members in the same proportion as the Authority's expenses are allocated under the Operating Budget at the time of the termination of this Agreement or of the retirement system contract.

9.5 Indemnity. The Authority shall indemnify, defend and hold harmless the Board of Directors, the individual Members, and their members, officers, directors, employees, and agents from and against any and all liability, loss, damages, expenses, costs (including, without limitations, costs and fees of litigation or arbitration) of every nature, arising out of any act or omission related to this Agreement, except such loss or damage which was caused by the willful misconduct of any individual Member, or their members, officers, directors, employees, and agents. The Authority's duty to indemnify each Member pursuant to this Agreement shall survive that Member's withdrawal from the Agency.

9.6 Conflict of Interest Code. The Authority shall, by resolution, adopt a conflict of interest code as required by law.

**ARTICLE 10
MISCELLANEOUS PROVISIONS**

10.1 Severability. If any section, clause or phrase of this Agreement or the application thereof to any Member or any other person or circumstance is for any reason held to be invalid by a court of competent jurisdiction, it shall be deemed severable, and the remainder of the Agreement or the application of such provisions to any other Member or to other persons or circumstances shall not be affected thereby. In the event a provision is held to be invalid, the Members shall work in good faith to restore the intent of any provision that held to be invalid. Each Member hereby declares that it would have entered into this Agreement, and each subsection, sentence, clause and phrase thereof, irrespective that one or more sections, subsections sentences, clauses or phrases or the application thereof might be held invalid.

10.2 Dispute Resolution. If a dispute arises as to the construction, interpretation or implementation of any portion of this Agreement or any matters that arise in connection with this Agreement, the Members in dispute (including the Authority if the dispute is between one or more Members and the Authority, in which case the Board shall determine who will represent the Authority in the meet and confer and mediation processes) shall meet and confer in person in an attempt to resolve that dispute within thirty (30) days of a Member or the Authority giving the other Members or the Authority notice of the dispute. If the Members or the Authority cannot resolve the dispute through that meet and confer process, the Members or the Authority in dispute shall proceed to mediation of the dispute in front of an independent, neutral mediator agreed to by those Members or the Authority, unless they both agree to waive that mediation. If the Members or the Authority in dispute cannot agree upon a mediator, the mediation service selected shall choose the mediator. The Members or the Authority in dispute shall equally divide and pay the mediation costs.

10.3 Notices. Notices required or permitted hereunder shall be sufficiently given if made in writing and delivered either personally, by registered or certified mail, postage prepaid, by nationally-recognized overnight courier, or by e-mail to the respective Members, at the addresses provided in Exhibit A attached hereto. With respect to delivery by e-mail, any such e-mail message shall be sent using a system that provides unmodifiable proof: (i) that the message was sent; (ii) that the message was delivered to the recipient's information processing system, and (iii) of the time and date the message was delivered to the recipient, along with a verifiable electronic record of the exact content of the message sent. The Members may from time to time change the address to which notice may be provided by providing notice of the change to the other Members.

10.4 Consent. Whenever in this Agreement or in any amendment thereto consent or approval is required, the same shall not be unreasonably withheld or delayed.

10.5 Other Agreements Not Prohibited. Other agreements by and between the Members or any other entity are neither prohibited nor modified in any manner by execution of this Agreement.

10.6 Section Headings. The section headings herein are for convenience of the Members only, and shall not be deemed to govern, limit, modify or in any manner affect the scope, meaning or intent of the provisions or language of this Agreement.

10.7 Governing Law; Venue. Any judicial action or proceeding that relates to the Agreement, the Authority or the Project between or among any or all of the Members and/or the Authority shall be initially brought in Contra Costa County Superior Court and will be transferred to a neutral venue. The litigants shall attempt to stipulate to a mutually agreeable neutral venue, and if unable to agree will resolve any venue dispute through a motion to transfer brought pursuant to California Code of Civil Procedure section 394. The parties to any litigation will support transfer to a neutral venue and will not object to transfer to a neutral venue.

10.8 Construction of Language. It is the intention of the Members that if any provision of this Agreement is capable of two constructions, one of which would render the provision void and the other of which would render the provision valid, then the provision shall have the meaning which renders it valid.

10.9 Cooperation. The Members recognize the necessity and hereby agree to cooperate with each other in carrying out the purposes of this Agreement.

10.10 Successors. This Agreement shall be binding upon and shall inure to the benefit of the successors of the Members.

10.11 Enforcement. The Authority is hereby authorized to take any and all legal or equitable actions, including but not limited to an injunction and specific performance, necessary or permitted by law to enforce this Agreement.

10.12 Integration. This Agreement constitutes the full and complete Agreement of the Members.

10.13 Counterparts. This Agreement may be executed in counterparts, each of which shall constitute an original and all of which together shall constitute one and the same agreement.

SIGNATURES ON FOLLOWING PAGE(S)

DRAFT

IN WITNESS WHEREOF, the Members have caused this Joint Exercise of Powers Agreement to be executed and attested by their proper officers thereunto duly authorized on the day and year set forth below.

DRAFT

EXHIBIT A
AUTHORITY MEMBERS

- Alameda County Flood Control & Water Conservation District, Zone 7
- Alameda County Water District
- Contra Costa Water District (to include City of Brentwood)
- East Bay Municipal Utility District
- Grassland Water District
- Santa Clara Valley Water District
- San Francisco Public Utilities Commission (to include Bay Area Water Supply & Conservation Agency)
- San Luis & Delta-Mendota Water Authority, consisting of:
 - Byron-Bethany Irrigation District
 - Del Puerto Water District
 - Panoche Water District
 - Westlands Water District

**EXHIBIT B
LIST OF FACILITIES**

No.	Description	Type	Builder	Operator
1	Delta-Transfer Pipeline	New Facility	CCWD	CCWD
2	Los Vaqueros Dam Raise	New Facility	CCWD	CCWD
3	Neroly High-Lift Pump Station	New Facility	CCWD	CCWD
4	Transfer Facility Expansion	New Facility	CCWD	CCWD
5	Transfer-Bethany Pipeline	New Facility	CCWD	CCWD
6	Los Vaqueros Recreation Facilities	Modified Facility	CCWD	CCWD
7	Rock Slough PP#1 Replacement	Modified Facility	CCWD	CCWD
8	Transfer Facilities Improvements	Modified Facility	CCWD	CCWD
9	Mokelumne Aqueduct Lining	Modified Facility	EBMUD	EBMUD
10	Walnut Creek VFDs	New Facility	EBMUD	EBMUD
11	Mokelumne Aqueduct	EBMUD-Provided Facility	EBMUD is responsible for construction, operation, and maintenance and is compensated through the EBMUD Facilities Usage Agreement	
12	Freeport Intake	EBMUD-Provided Facility		
13	EBMUD-CCWD Intertie	CCWD-Provided Facility	CCWD is responsible for construction, operation, and maintenance and is compensated through the CCWD Facilities Usage Agreement	
14	Los Vaqueros Dam	CCWD-Provided Facility		
15	Los Vaqueros Pipeline	CCWD-Provided Facility		
16	Middle River Intake	CCWD-Provided Facility		
17	Middle River Pipeline	CCWD-Provided Facility		
18	Old River Intake	CCWD-Provided Facility		
19	Old River Pipeline	CCWD-Provided Facility		
20	Rock Slough Facilities	CCWD-Provided Facility		
21	Transfer Pipeline	CCWD-Provided Facility		

LOS VAQUEROS RESERVOIR EXPANSION PROJECT



Agenda

- **Background**
- **Usage Fee Overview**
- **Key Issues**
- **Next Steps**

Background

CCWD Board Principles condition their support for the Los Vaqueros Reservoir Expansion Project. Most relevant principles related to usage fees include:

- **CCWD continues as owner and manager of the Los Vaqueros Watershed;**
- **CCWD maintains control over recreation in the Los Vaqueros Watershed;**
- **CCWD continues as operator of the Los Vaqueros Reservoir system;**
- **CCWD will be reimbursed for the value of the existing Los Vaqueros Project assets shared, replaced, rendered unusable, or lost with the expansion project;**

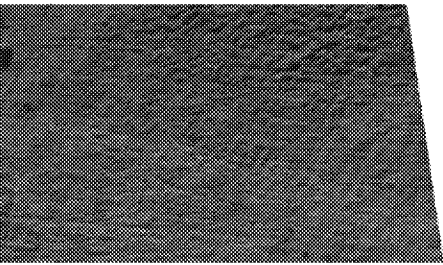
Background

- **CCWD facilities implemented through significant investment and risk; Regional project increases risk;**
- **Usage fees seek to balance equitable compensation to CCWD customers, risks, and overall cost competitiveness;**
- **CCWD incorporated significant changes to assumptions and methodology resulting from LAP input;**
- **Current usage fees meet CCWD's Board principles.**

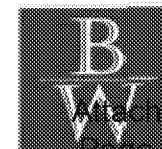
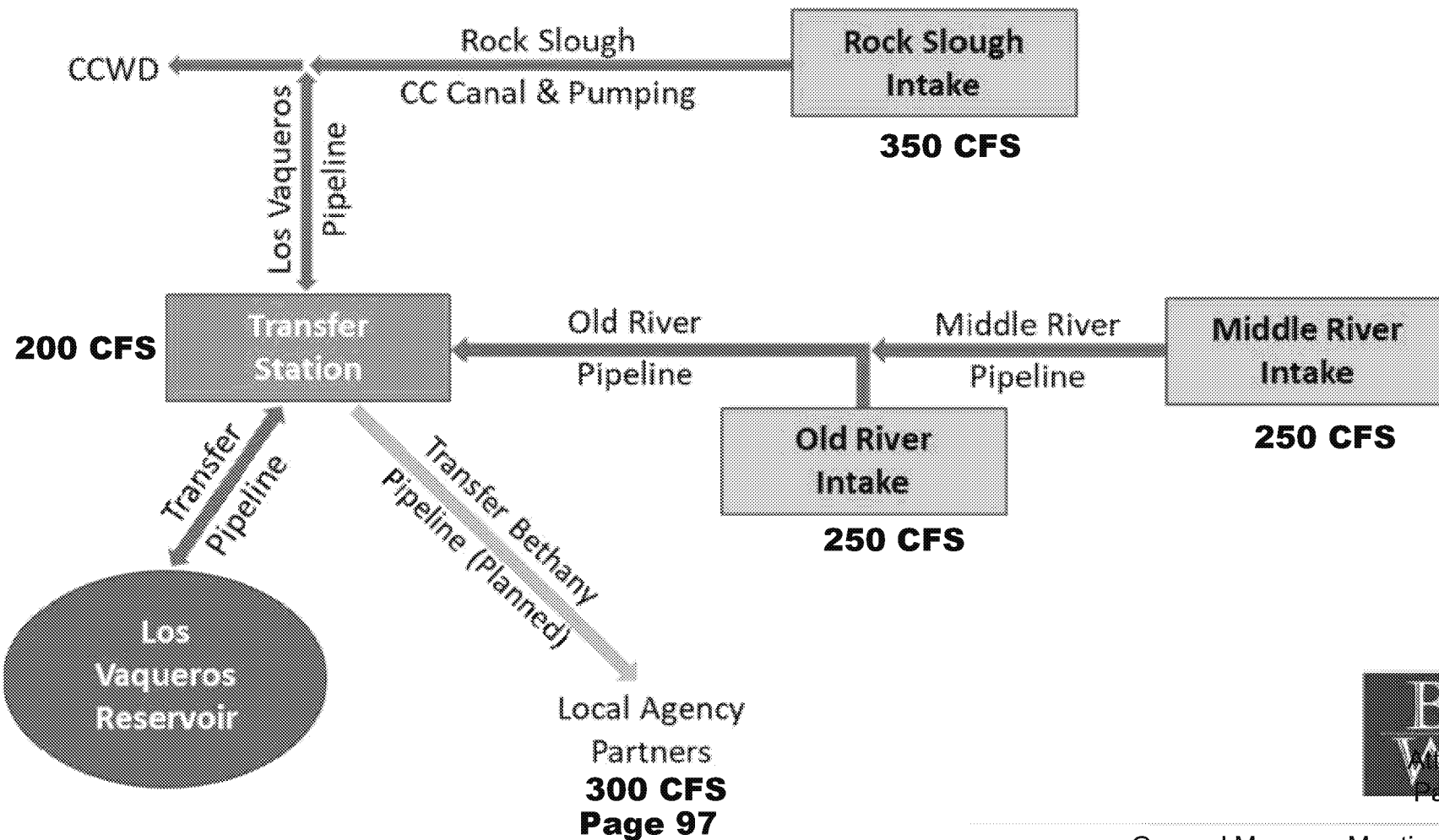
Usage Fee Review History

- **CCWD Original Usage Fees (two separate components)**
 - **Capacity Rental – based on debt service interest**
 - **Renewal/Replacement – based on annual depreciation**
- **Third-Party Review Recommendations**
 - **Conveyance: Single charge based on present value of facilities**
 - **Storage: Fixed payment for LAP's share of costs for land and shared foundational facilities**
- **Comments/Recommendations received from LAPs**

Conveyance



Conveyance Facilities/Pathways



Usage Fees - Conveyance

Operations and Maintenance (O&M)

- **Fixed O&M costs allocated based on water deliveries**
 - Example: CCWD fixed O&M costs of \$3.3 million**
 - If JPA accounts for 35% of deliveries**
 - then JPA allocated \$1.15 million**
- **Variable O&M costs (power) passed on directly to JPA**
 - **Intakes: \$23/AF to \$47/AF**
 - **Los Vaqueros filling: \$70/AF**
- **O&M costs trued up, or based on rolling average**
- **No significant comments from third-party review or LAPs**

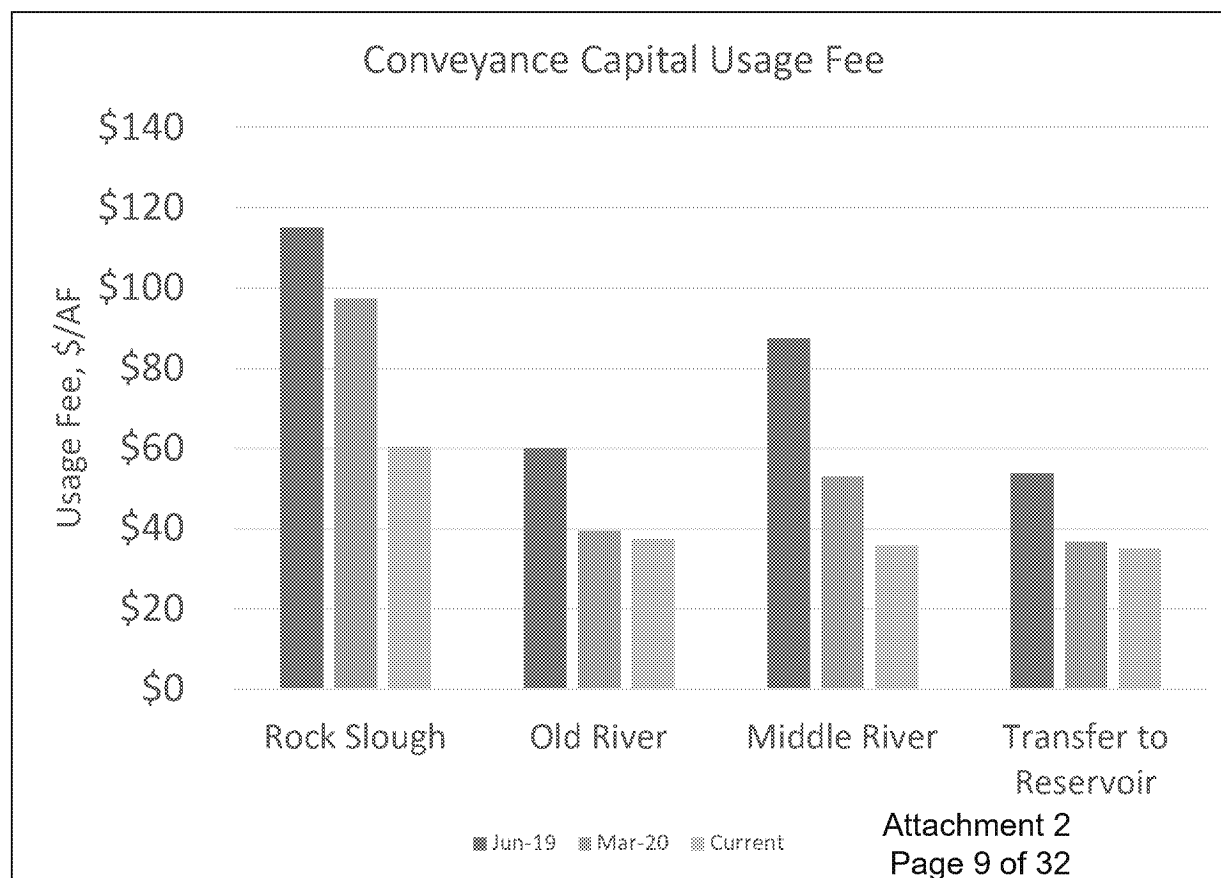
Usage Fees - Conveyance

Capital Component

- **Significant changes to assumptions and methodology resulting from LAP input**

Key Changes

- **Combined to single fee**
- **Recovery based on useful life**
- **Removal of grant funds**
- **Use of actual debt interest/issuance costs**
- **Firm Operational Capacity vs. Deliveries**



Usage Fees - Conveyance

Capital Component

$$\text{Usage Fee, \$/AF} = \frac{\text{Facility Value, \$}}{(\text{Useful Life, YRS}) * (\text{Deliveries or Capacity, AF/YR})}$$

- **Facility Value determined from present value of debt service**
 - **Consistent with third-party review alternatives**
 - **Common methodology used to value facilities**

- **Useful lives ranging from 50 to 75 years**

- **Throughput basis (deliveries or capacity) key area of discussion**

Usage Fees - Conveyance

Capital Component – Deliveries vs Capacity?

- **Capital costs typically allocated based on contracted capacity or peak use**

Example

Peak Capacity (JPA)

Total Capacity

- **Share of capital typically a fixed cost paid regardless of usage**
- **Challenges with Usage Fees**
 - **Peak capacity available is not defined**
 - **Capacity available varies from 0 to 100%**

Usage Fees - Conveyance

Capital Component – Deliveries vs Capacity?

- **CCWD proposed usage fees were based on water delivered**

Example

Water Delivered (JPA)

Total Water Delivered (JPA plus CCWD)

- **Fees are only paid when conveyance facilities are used**
 - **No fixed capital cost or demand charge**
 - **No “readiness to serve” charges**
- **Additional wear and tear on facilities is proportional to increase in water deliveries**

Usage Fees - Conveyance

Capital Component

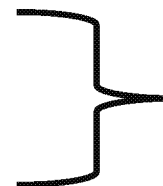
- **Using water deliveries is equitable method to determine usage fees. Average water deliveries are 32% to 35% of installed capacity.**
- **CCWD also considered “Firm Operational Capacity” based on third-party review and LAP comments**
 - **Ratio of Transfer Bethany pipeline capacity to CCWD’s Intake capacity**
 - **Similar result as water deliveries**

Transfer-Bethany Pipeline:

300 CFS

CCWD’s intake capacity:

850 CFS



35.3%

Usage Fees - Conveyance

Capital Usage Fee, \$/AF

Delivery Pathway	Original Version, \$/AF	Current Version, \$/AF
Rock Slough	\$115.05	\$60.50
Old River	\$60.09	\$37.59
Middle River	\$87.46	\$35.81
Weighted Conveyance	\$103.37	\$52.59
Transfer to Reservoir	\$53.80	\$35.03

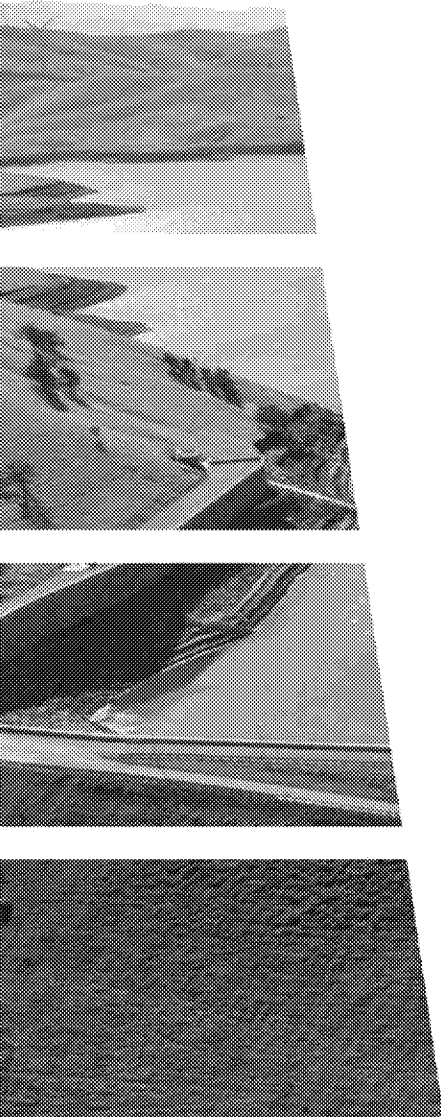
Usage Fees - Conveyance

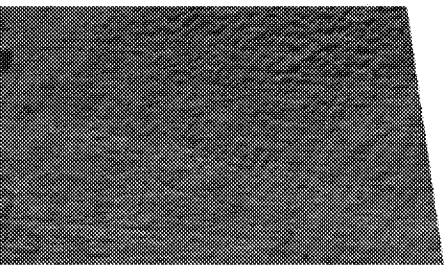
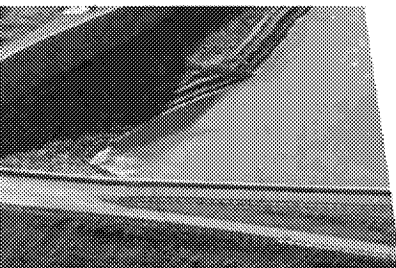
Other Terms

- **Use of one weighted-average conveyance usage fee**
- **Weighted-average fee based on a multi-year rolling average of facility use**
- **Annual true ups based on actual operating costs incurred by CCWD**
- **Periodic intervals or events, such as a major capital project, for re-evaluating the usage fee levels and methodology**

Usage Fees - Conveyance

Comments and Questions



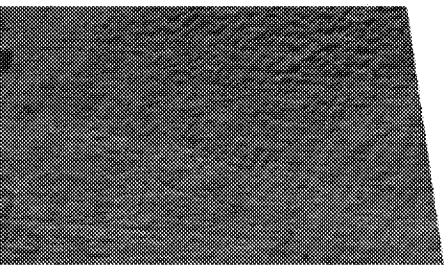


Storage

Usage Fees - Storage

Storage

- **Approach modified based on third-party review to be more similar to a land right**
- **Considers a fixed payment for LAP's share of costs for land and shared foundational facilities**
- **Cost recovery based on a pro-rata share of total capacity of the expanded reservoir 115 TAF/275 TAF, or 41.8%**
 - **Present value of debt service X JPA allocation**
 - **Two step process**
 - **Land value (storage and watershed)**
 - **Facility value**

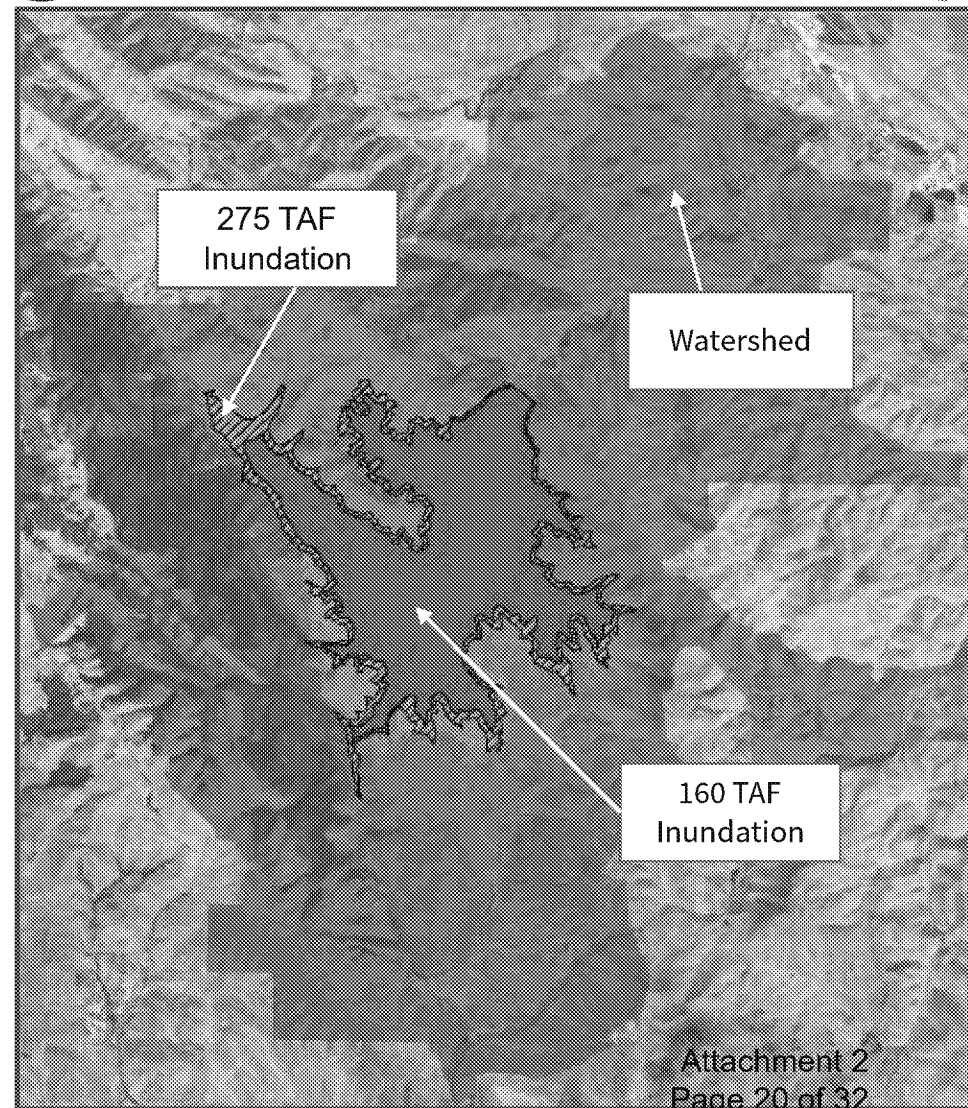


Storage – Land Value

Usage Fees - Storage

Storage – Land Value

- **160 TAF Inundation Area**
 - **1,916 acres**
 - **Shared – (41.8% JPA)**
- **275 TAF Inundation Area (incr.)**
 - **585 acres**
 - **Shared – (70.9% JPA)**
- **Watershed (remaining)**
 - **16,787 acres**
 - **Shared – (41.8% JPA)**
 - **Mitigation - (20.9% JPA)**



Usage Fees - Storage

Storage – Land Value (continued)

Watershed Area	Original Version	Current Version
160 TAF Inundation, \$M	\$7.5	\$7.0
275 TAF Inundation, \$M	\$5.4	\$3.6
Watershed (Remaining), \$M	\$65.4	\$59.0
Total, \$M	\$78.3	\$69.7
Annual Usage Fee, \$M/YR	\$3.04	\$2.71

- **CCWD agreeable to up front or annual payment for land value**
- **Annual usage fee assumes 50 years and 3%**

Usage Fees - Storage

Storage – Land Value (continued)

Changes resulting from LAP comments

- **Applied actual interest rate and issuance costs**
- **Changed JPA allocation for 275 TAF inundation and watershed mitigation land**
- **Continued to apply 90% factor to reflect CCWD retention of ownership**
- **Methodology results in value significantly below market**

Usage Fees – Storage Land Value

Comments and Questions



Storage – Facility Value



Usage Fees - Storage

Storage – Facility Value

- **Subtracting cost of facilities that only benefit CCWD**
 - **Original LV Project**
 - **60 TAF Expansion**

- **Shared facilities allocated 41.8% JPA**

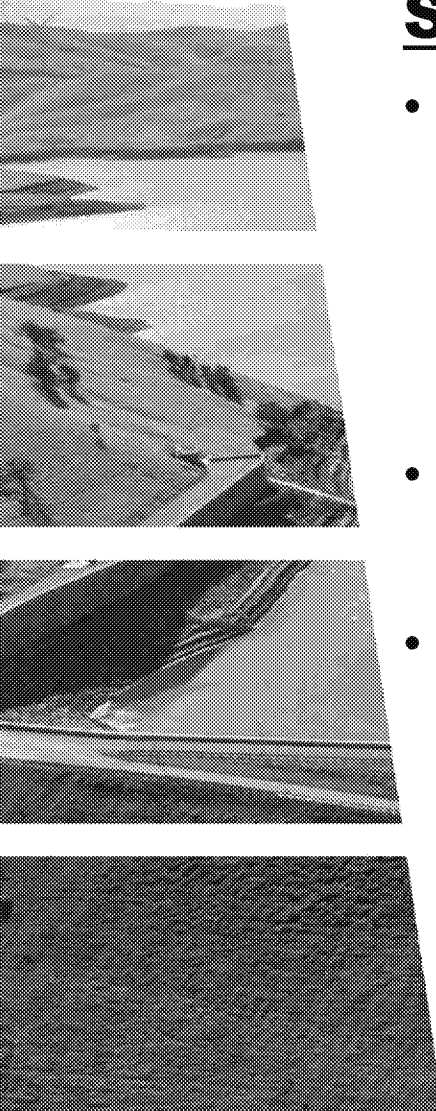
- **Depreciated value**
 - **Renewal/Replacement of shared dam included separately in pro forma**

CCWD Only – 0% to JPA

- **Existing dam material/placement**
- **Recreation**
- **Mitigation**
- **Replaced in-kind**

Shared Facilities – 41.8% to JPA

- **Foundation/abutment**
- **Drainage**
- **Spillway**
- **Inlet/Outlet structures**
- **Vasco Road relocation**
- **Utilities**



Usage Fees - Storage

Storage Shared Facilities – Depreciated Value

Usage Fee for Los Vaqueros Dam Shared Facilities that benefit JPA

Facilities	Original Version Depreciated Value	Current Version Depreciated Value
Original 100 TAF LV, \$M	\$128.3	\$135.0
60 TAF Expansion, \$M	\$21.3	\$18.9
Total, \$M	\$149.6	\$153.9
Usage Fee, \$M/YR (RCLD/UL)	\$1.89M/YR	\$1.54M/YR

Changes

- **Used actual interest rate and issuance costs**
- **Applied depreciation to annual usage fee**

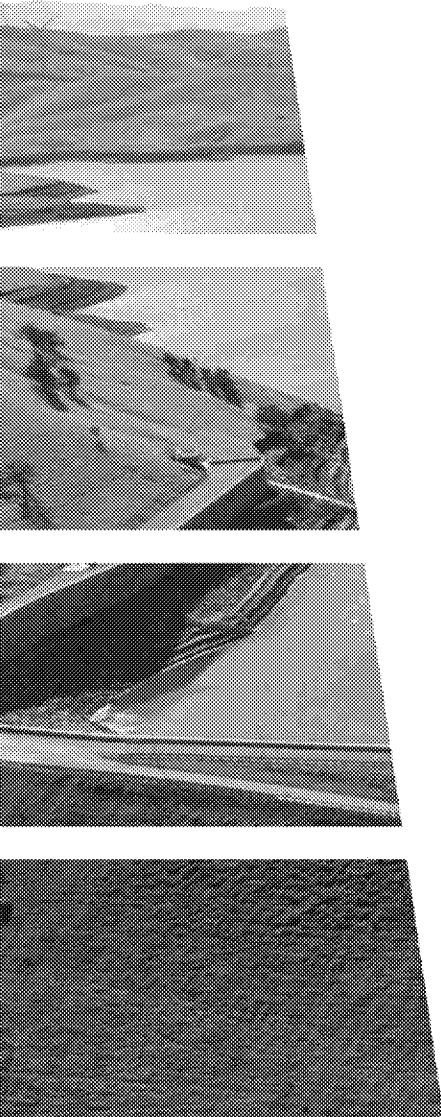
Storage Usage Fee – Land and Shared Facilities

Revised Usage Fee for Los Vaqueros Land and Shared Facilities, \$M/YR

Facility	Original Version	Current Version
Land, \$M/YR	\$3.04	\$2.71
Shared Facilities, \$M/YR	\$1.89	\$1.54
Total, \$M/YR	\$4.93	\$4.25

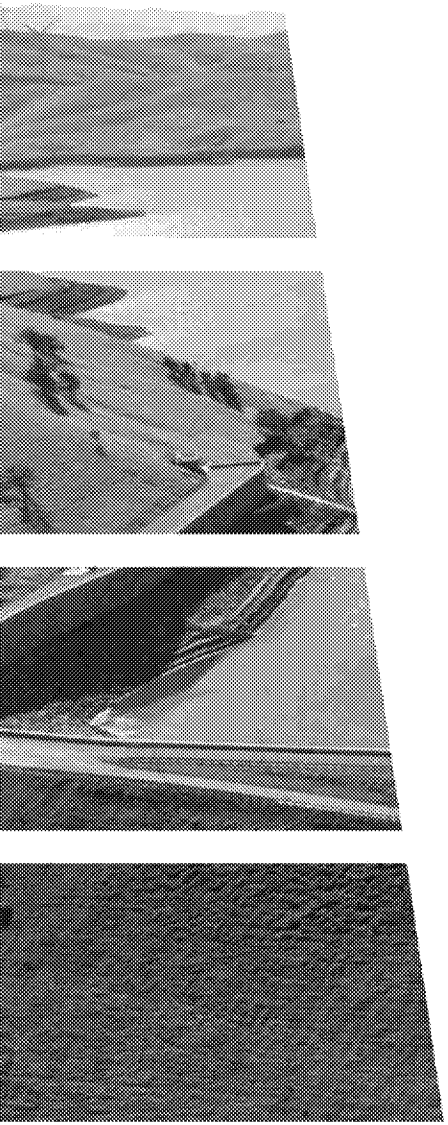
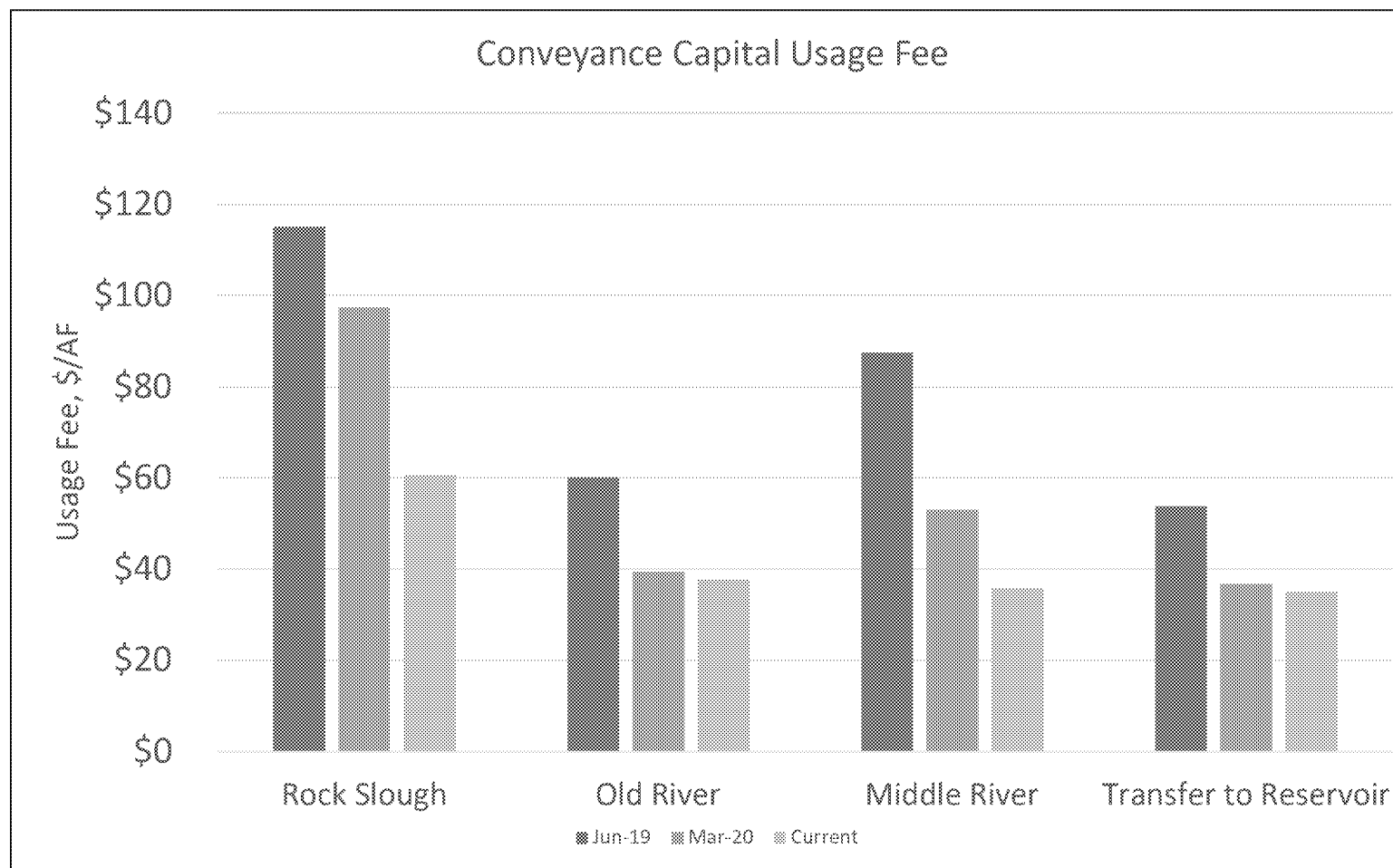
Usage Fees – Storage Facility Value

Comments and Questions



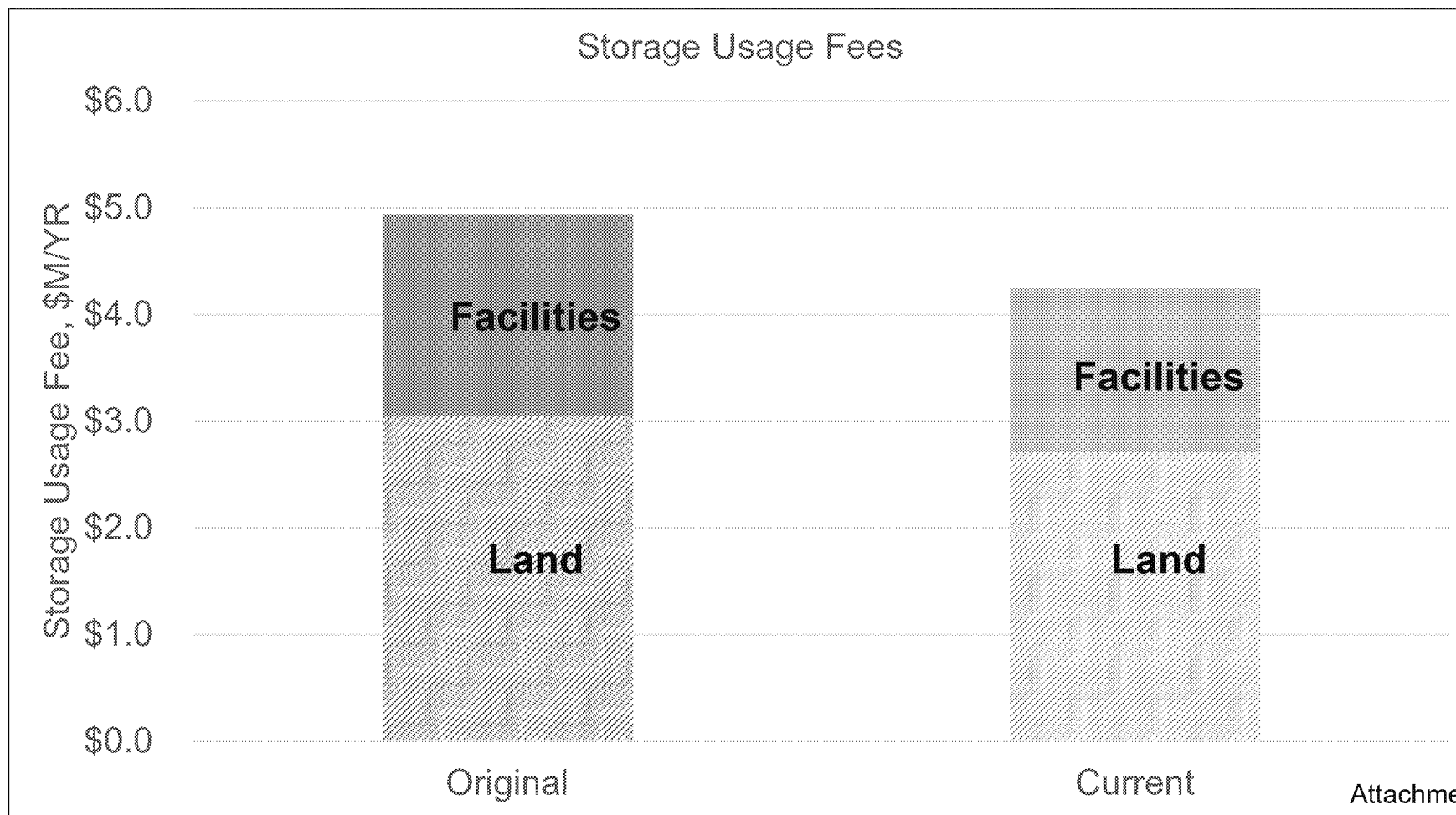
Summary

Revised Conveyance Usage Fees, \$/AF



Summary

Revised Storage Usage Fees, \$/YR



Next Steps

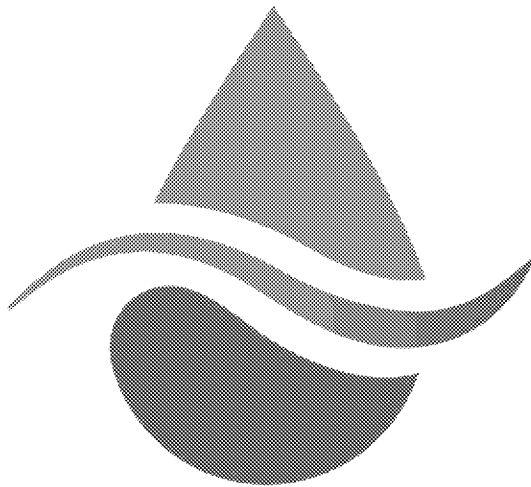
- **Process to finalize CCWD usage fee approach?**
- **Status of EBMUD Usage Fees**
- **How to memorialize Usage Fee development status?**
 - **Subject to future agreement with CCWD and JPA**
 - **Proposed Letter of Intent**
- **Formation of JPA**
- **Facility Usage Agreement or Service Agreement**

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Page 122

Attachment 2
Page 32 of 32

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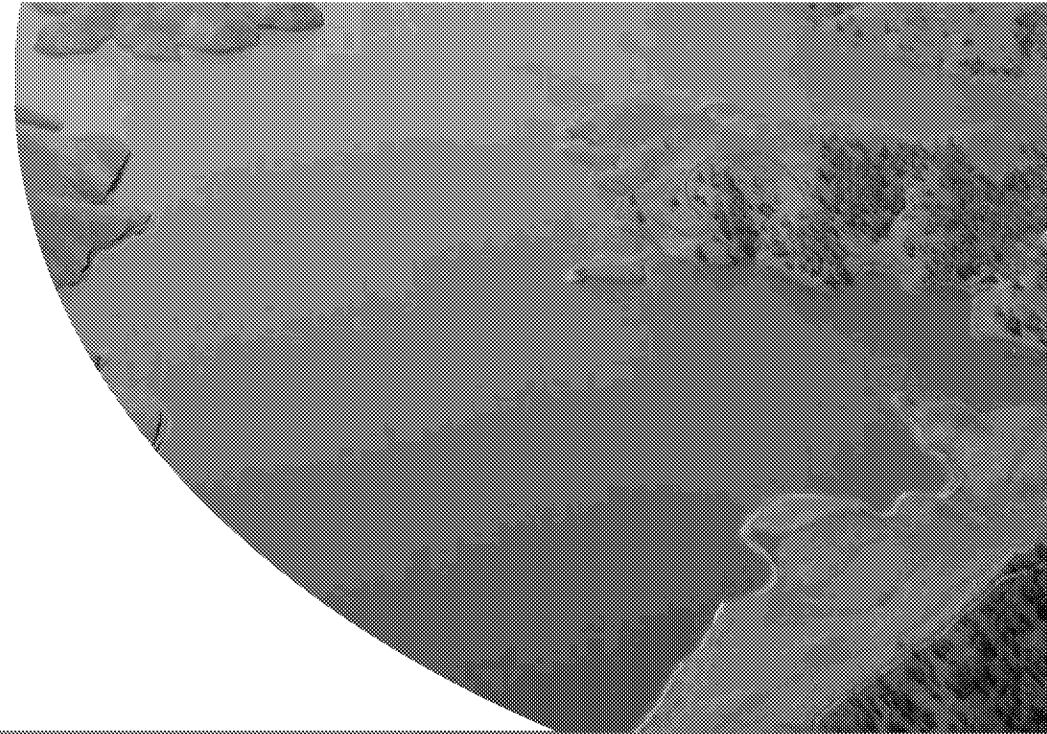


Valley Water

Clean Water • Healthy Environment • Flood Protection

Valley Water PPT Template
Version Release v.3

ATTACHMENT 3
Water Storage Exploratory Committee
October 30, 2020



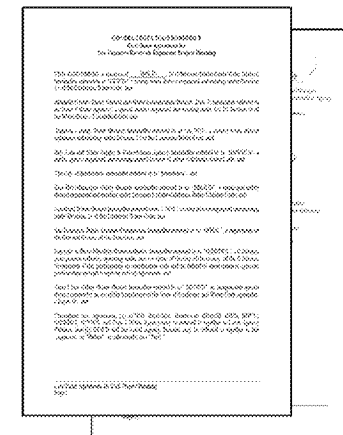
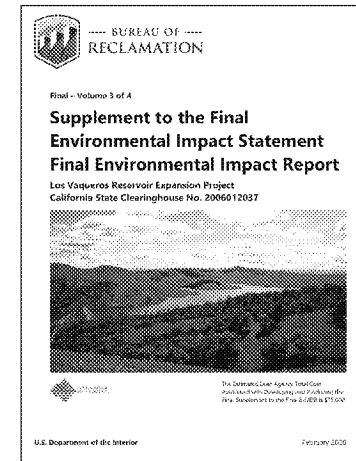
Los Vaqueros Expansion Project

Presented by: Michael Martin, Associate Water Resource Specialist



Project Status

- Final EIR/EIS certified February 2020
- Valley Water evaluating benefits and constraints
- Amendment 2 considered at the November 10, 2020, Board meeting
- Evaluating proposed user fees
- Developing JPA governance framework and terms



Local Agency Partners (LAPs)

Alameda County Water District

City of Brentwood

Grassland Water District

East Bay Municipal Utility District

San Francisco Public Utilities Commission

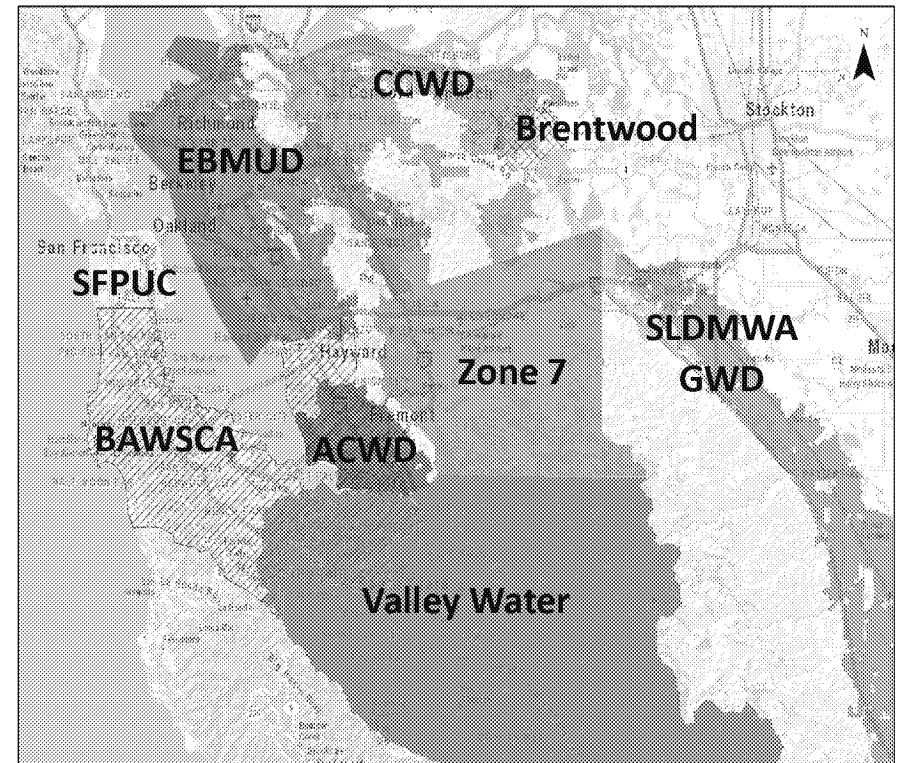
- Bay Area Water Supply and Conservation Agency

San Luis & Delta-Mendota Water Authority

- Byron-Bethany Irrigation District
- Del Puerto Water District
- Panoche Water District
- Westlands Water District

Valley Water

Zone 7 Water Agency



valleywater.org



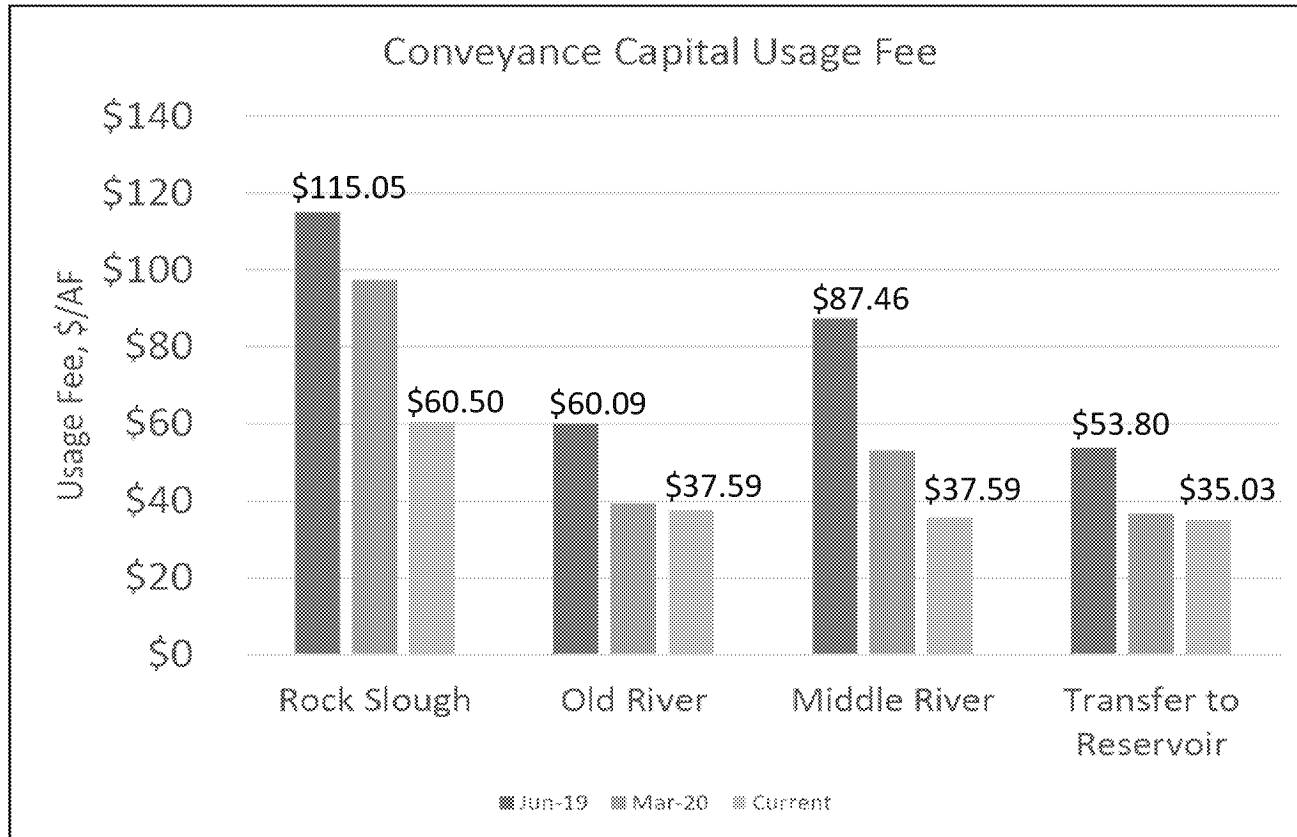
JPA Key Activities

- Financing project construction
- Executing agreements with the CCWD and others for the design and construction of the project
- Executing agreements for administration of the JPA and operations of the project
- Managing contracts for administration of public benefits
- Coordinating requests for services among JPA Members

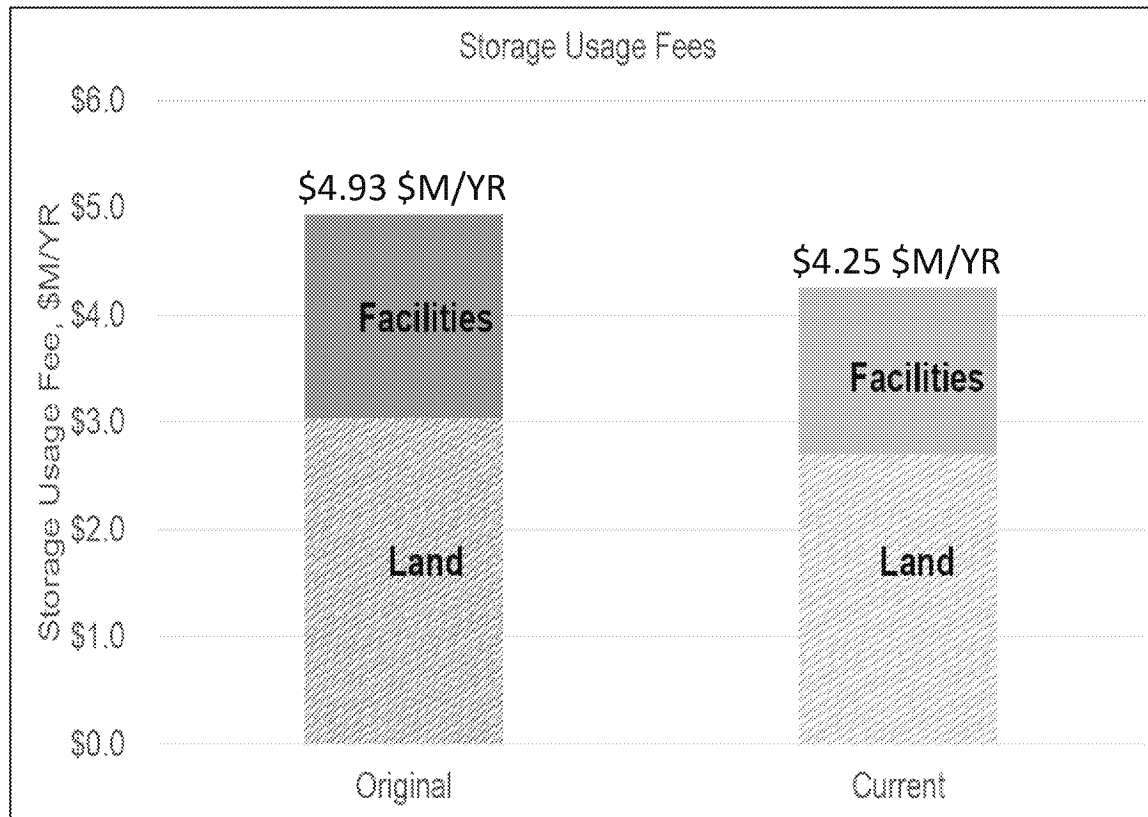
JPA Agreements Discussion Topics

- Eligibility to serve on JPA Board
- JPA Board Chair, Officers, Employees and/or Consultants
- Voting
- Veto rights and special voting rules for CCWD and EBMUD
- Finances
- Withdrawal
- Termination and Amendment

Usage Fees - Conveyance

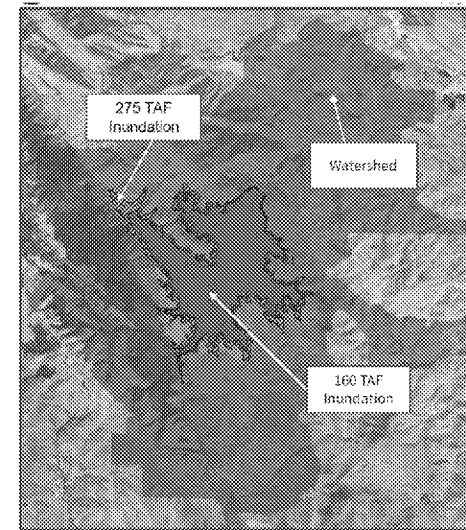
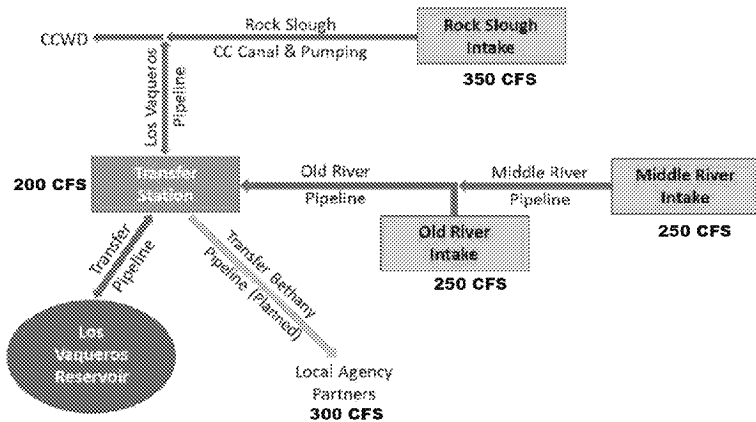


Usage Fees - Storage



Usage Fees – Remaining Issues

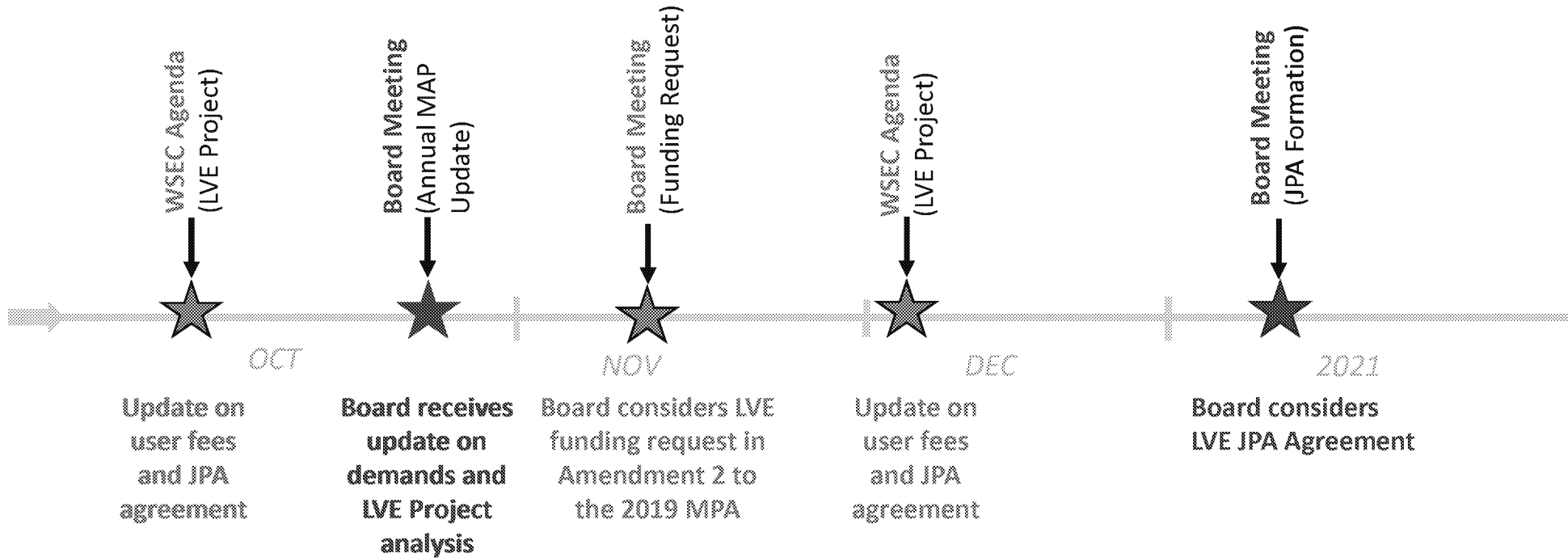
1. Costs where CCWD constructed excess capacity and redundancy into their system.
2. Cost of the use of land including watershed lands for the reservoir.



Near Term Schedule & Next Steps

MILESTONES

OUTCOMES

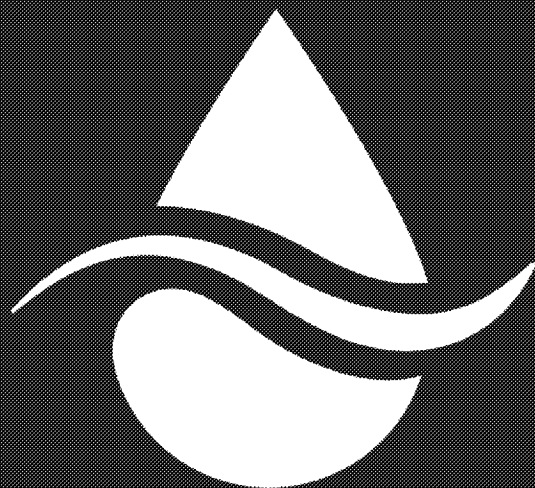


valleywater.org



QUESTIONS





Valley Water

Clean Water • Healthy Environment • Flood Protection



Santa Clara Valley Water District

File No.: 20-0964

Agenda Date: 10/30/2020
Item No.: 4.3.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Pacheco Reservoir Expansion/San Luis Low Point Improvement Projects Update

RECOMMENDATION:

Receive and discuss information regarding status of the Pacheco Reservoir Expansion/San Luis Low Point Improvement Projects. This is an information-only item and no action is required.

SUMMARY:

The Pacheco Reservoir Expansion Project (PREP) has been included as an alternative within the San Luis Reservoir Low Point Improvement Project (SLLPIP) led by USBR. The SLLPIP Draft Feasibility Report released on April 8, 2019, determined that the Pacheco Reservoir Expansion alternative provided the highest National Economic Development (NED) score within the SLLPIP. This determination established a nexus for potential partial federal funding opportunity for the PREP through the Federal Water Infrastructure Improvements for the Nation (WIIN) Act.

San Luis Reservoir Low Point Improvement Project

In order to attain eligibility for federal funding through the WIIN Act, the Department of the Interior and Federal Office of Management and Budget must assess and determine the project is technically, environmentally, economically, and financially feasible, and possesses sufficient Federal benefit. The Valley Water PREP team and USBR have completed the SLLPIP Final Feasibility Report and Environmental Impact Statement/Environmental Impact Report which are undergoing policy review by the Department of the Interior. The team is hopeful for a favorable WIIN Act funding decision by January 2021.

Pacheco Reservoir Expansion Project

The PREP team continues various activities to progress project planning, preliminary design, environmental documentation, and permitting. Substantial progress has been made on environmental investigations with several draft summary reports in review by the team. Interagency coordination efforts continue with productive virtual meetings with environmental agencies to discuss fish, wildlife, and habitat related topics. These efforts will culminate in preparation and public release of the PREP specific Draft Environmental Impact Report (EIR) in late 2021.

Components of the Draft EIR being prepared include the project description and the preliminary project alternatives for environmental impact analysis. Plans for a public scoping meeting this fall are underway which will include a presentation of the preliminary project alternatives and other project

features.

On October 13, 2020, the Pacheco Project Delivery and Treasury/Debt/Grants Management Units submitted a Letter of Intent (LOI) to the U.S. Environmental Protection Agency (EPA) to be considered for an invitation to apply for a loan under its Water Infrastructure Finance and Innovation Act (WIFIA) loan program to fund up to 49% of eligible PREP capital costs. The federal WIFIA loan program has been identified as a preferential, low-cost option for borrowing funds to finance the development, design, and construction of the PREP. Submission of the LOI doesn't obligate Valley Water to enter into a loan agreement. A successful LOI would result in the opportunity to apply for a WIFIA loan. The EPA will announce projects selected in three months.

ATTACHMENTS:

Attachment 1: PowerPoint Presentation

UNCLASSIFIED MANAGER:

Christopher Hakes, 408-630-3796

Unique Opportunity for Ecosystem Enhancement,
Improved Water Supply Reliability, and Emergency
Water Supply

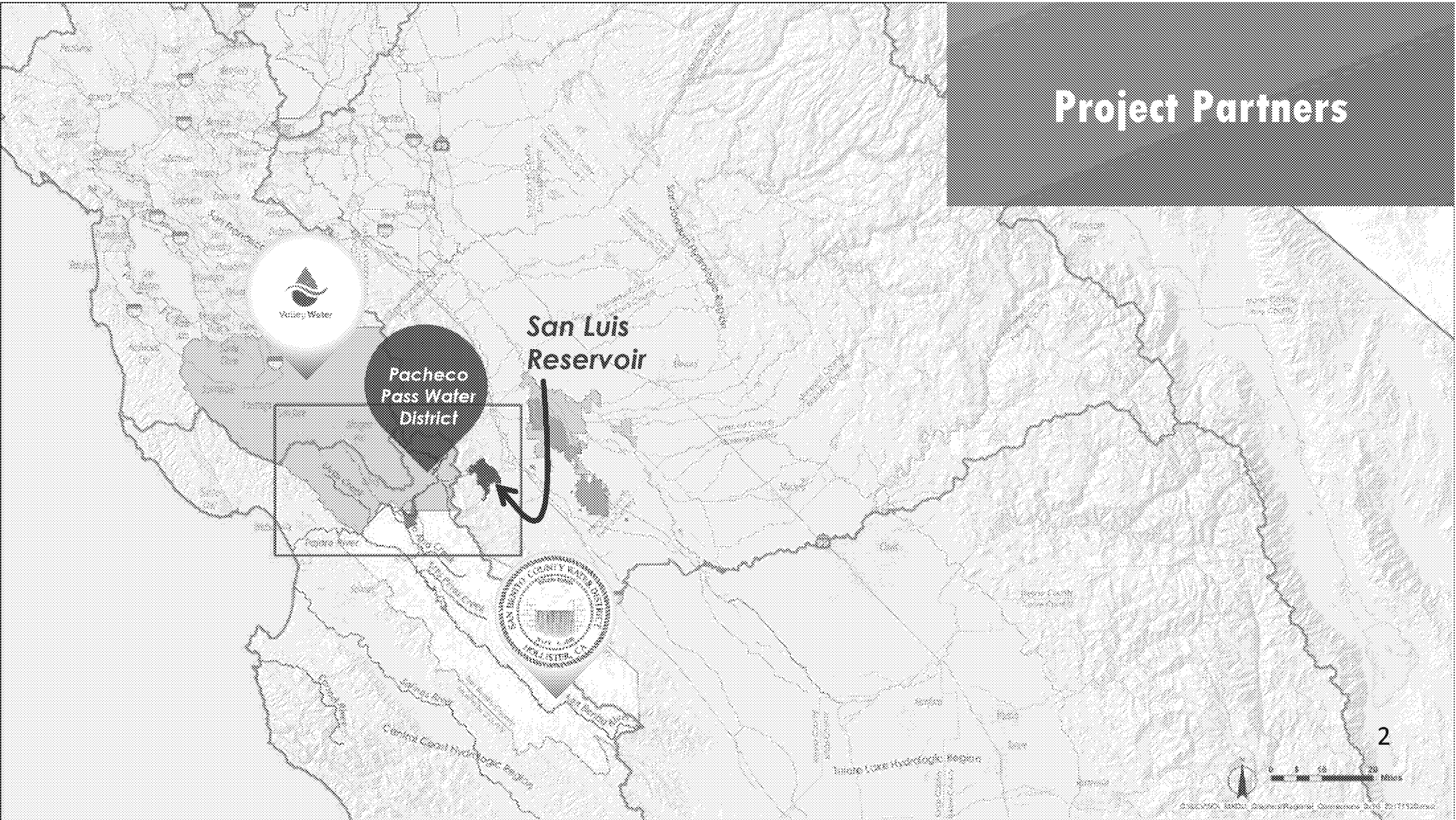
Valley Water – Water Storage Exploratory Committee
October 30, 2020

Pacheco Reservoir Expansion Project Update: Preliminary Project Alternatives

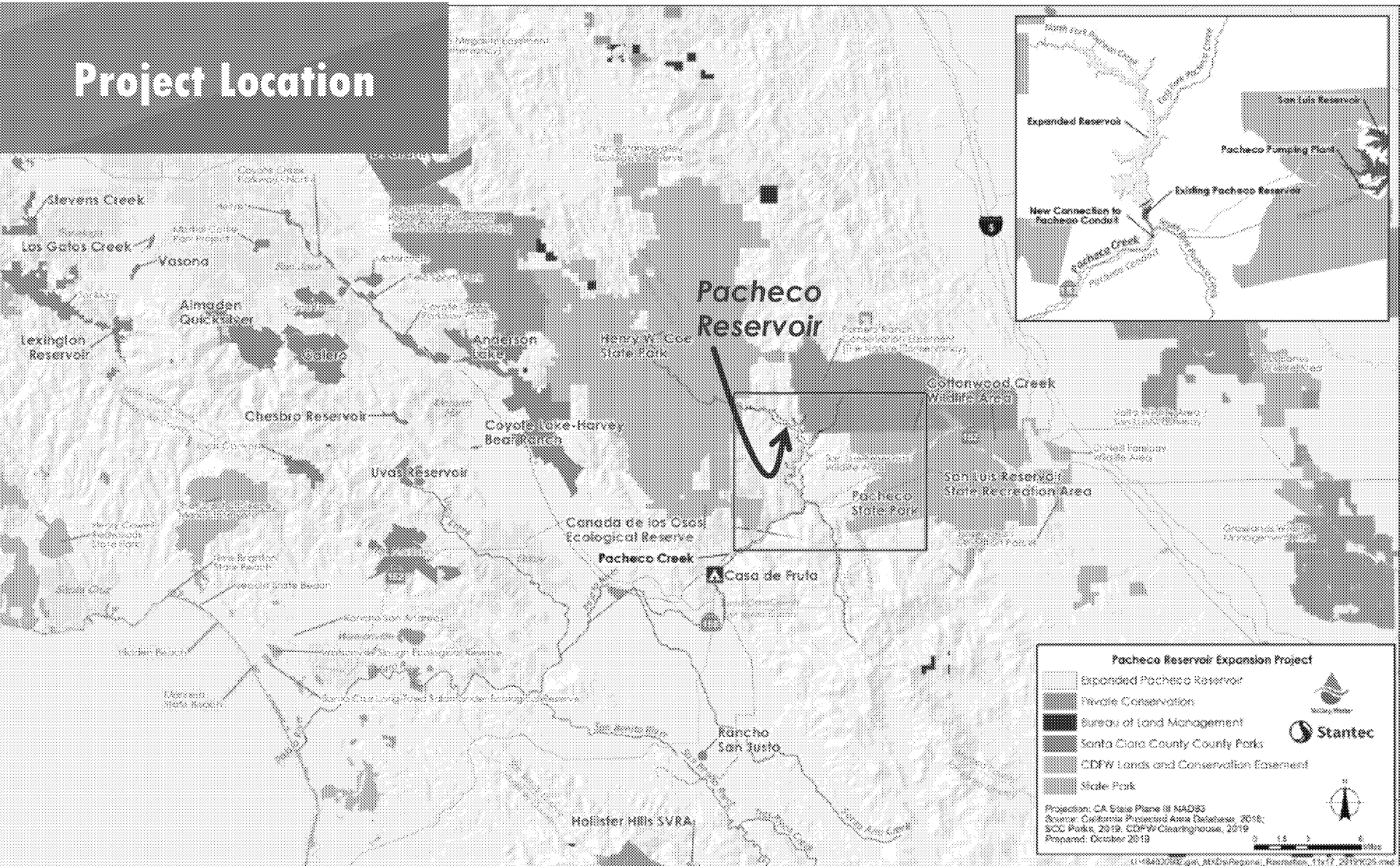
Presented by: Pacheco Project Delivery Unit Manager



Project Partners

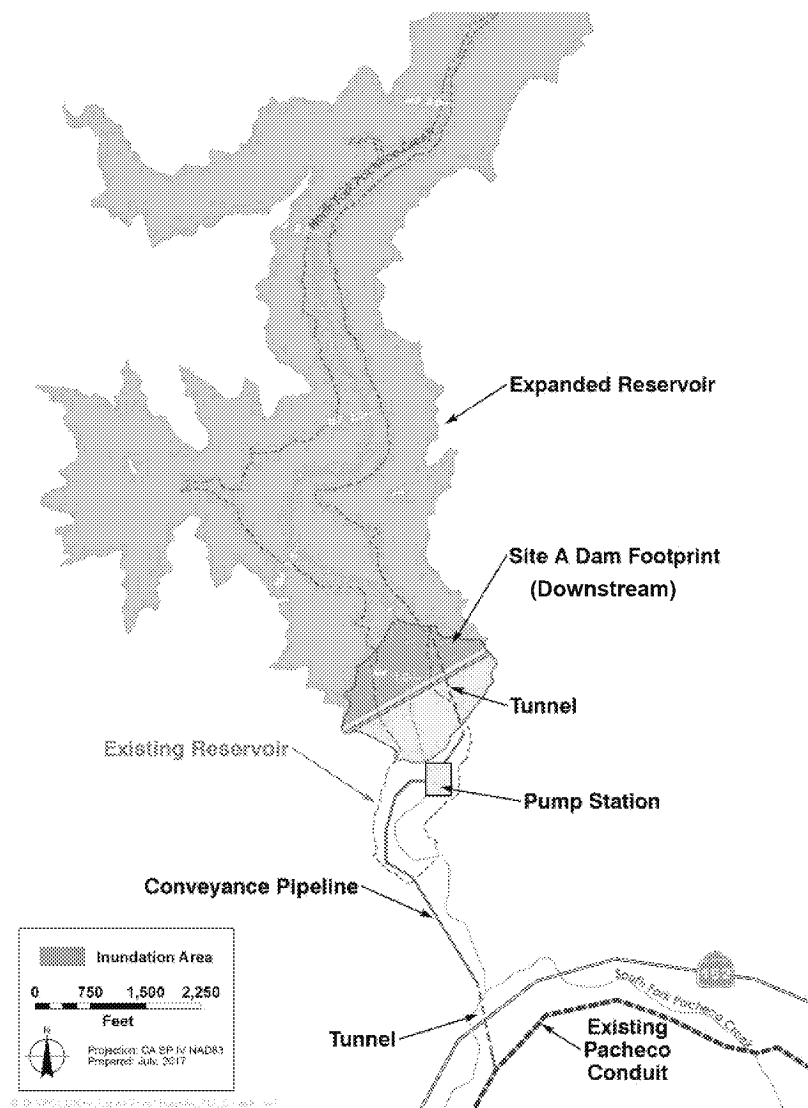


Project Location



WSIP Application Concept

- **Dam** – approximately 300 feet high, one location under consideration
- **Reservoir** – up to 140 thousand acre-feet (TAF)
- **Spillway** – capable of passing the Maximum Probable Flood
- **Intake/Outlet Works** – large diameter pipe connection to Pacheco Conduit, smaller outlet pipe to Pacheco Creek
- **Pump Station & Conveyance Pipeline** – to transfer water to and from Pacheco Conduit
- **Roadways** – access to and from SR 152



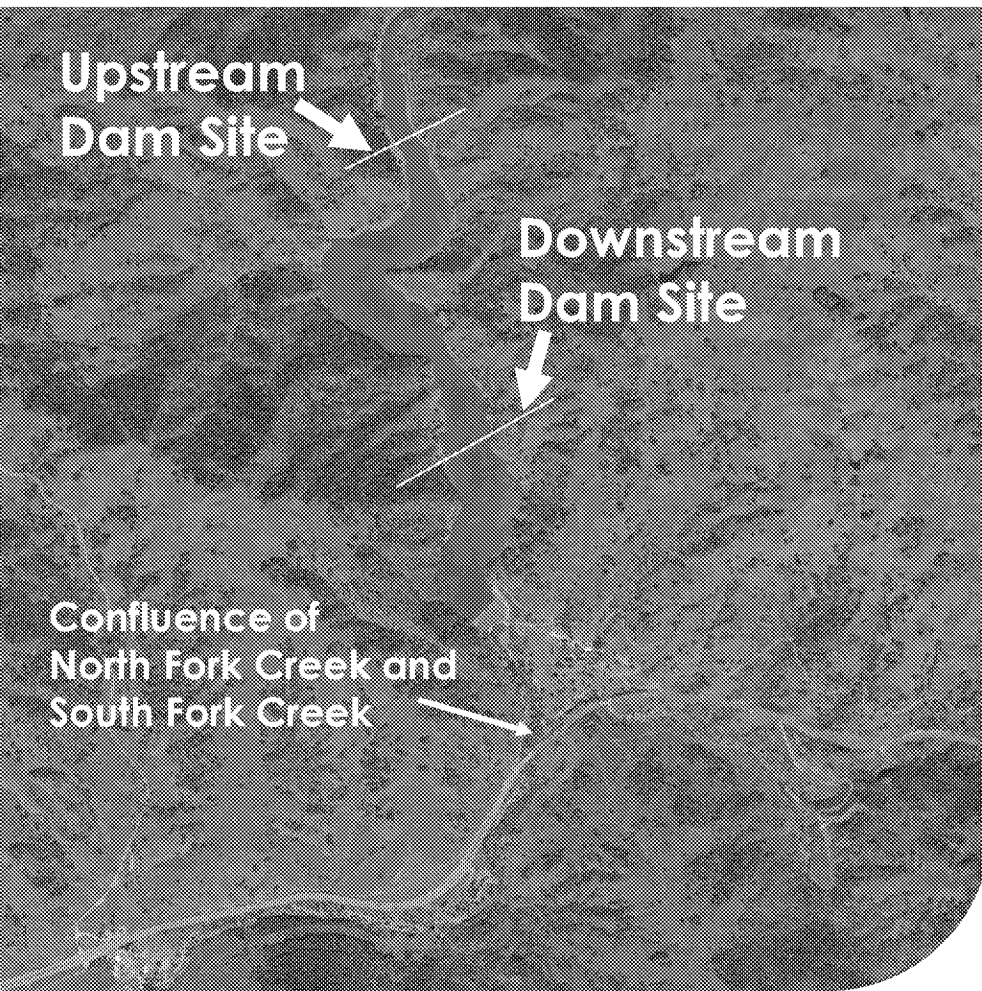


Primary Variations Between Alternatives

- *Dam Site Location*
- *Reservoir Size*
- *Dam Type*

Pictured above: Earthfill Dam Construction in Bay Area





Dam Site Location

Two Dam Site Locations

- Downstream Dam Site
 - 1.0 mile upstream from confluence
- Upstream Dam Site
 - 2.2 miles upstream from confluence
 - Narrower geographic features



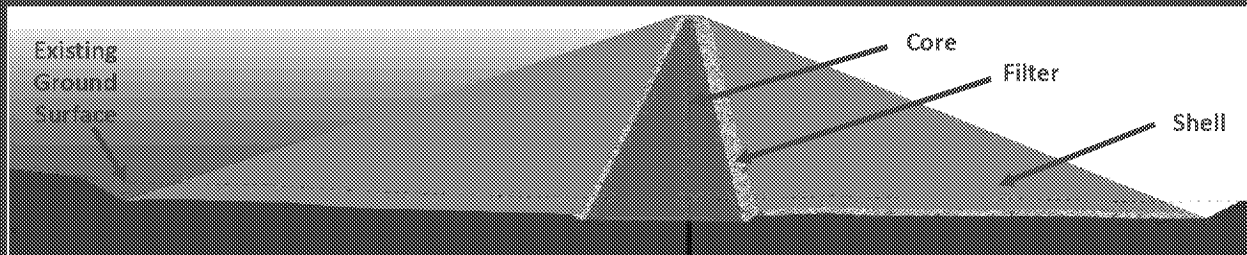
Pictured above: Earthfill Dam at Downstream Dam Site with 140,000 acre-feet Expanded Reservoir

Reservoir Size

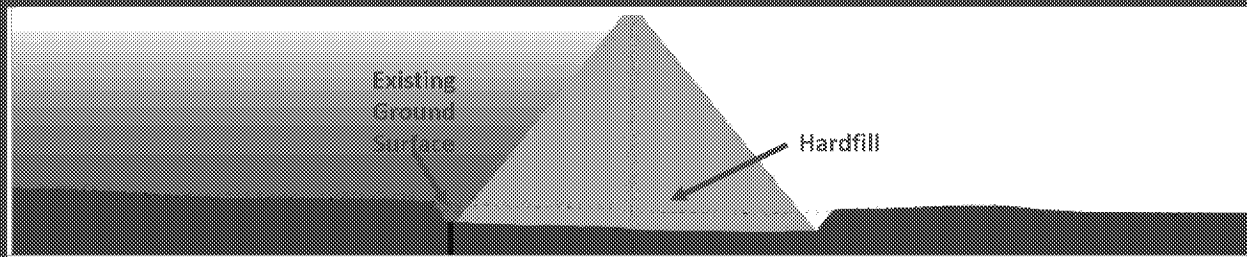
Two Reservoir Sizes

- 140,000 acre-feet
Downstream Dam Site
Upstream Dam Site
- 96,000 acre-feet
Upstream Dam Site

Typical Earthfill Dam Cross Section



Typical Hardfill Dam Cross Section



Dam Types

Two Dam Types

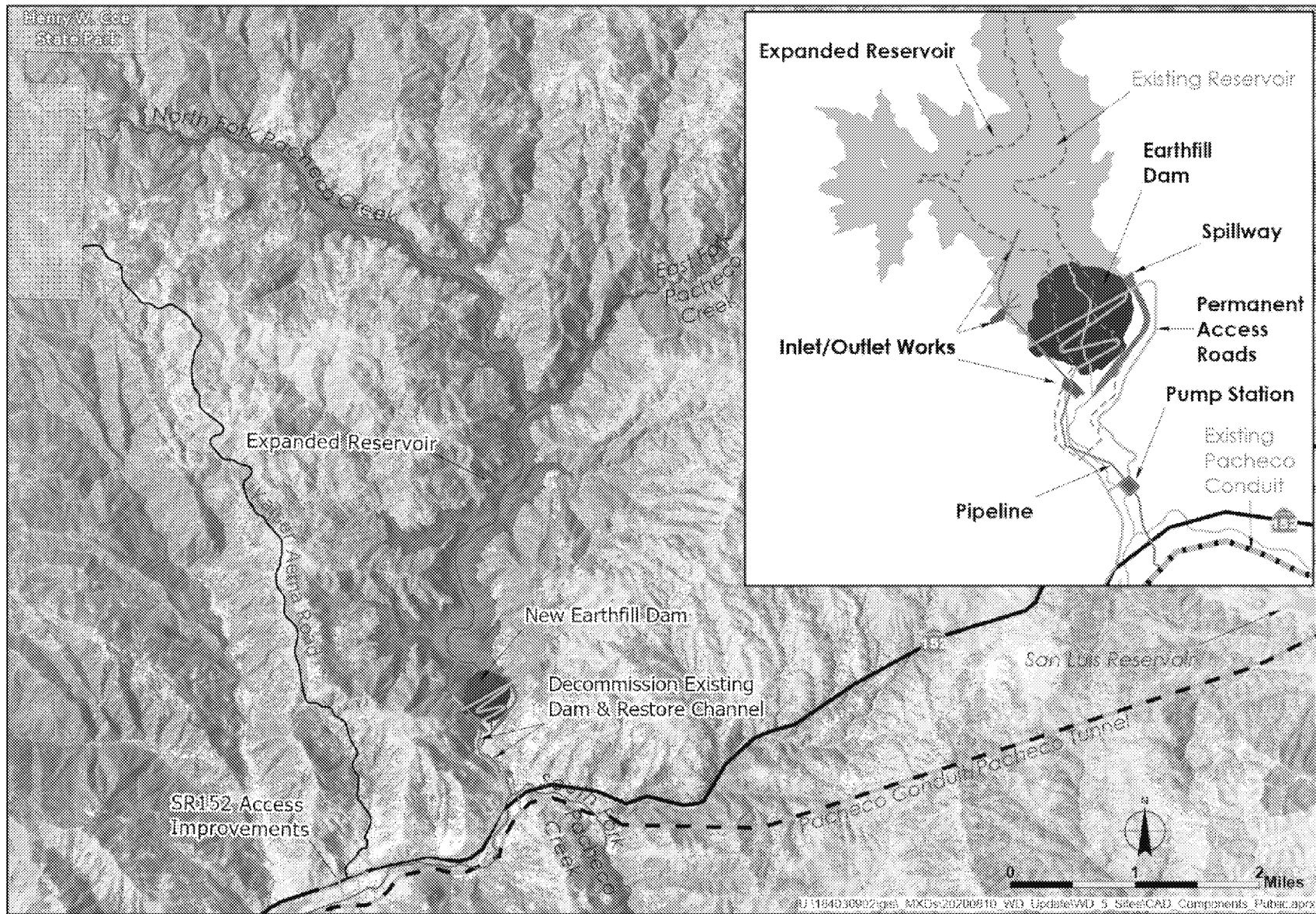
- Earthfill Dam
 - ✓ Zoned, compacted earth fill
 - ✓ Dam, spillway, inlet/outlet separate structures

- Hardfill Dam
 - ✓ Roller-compacted rock with cement
 - ✓ Spillway and inlet/outlet integrated into dam structure

Preliminary Alternative

1

- ✓ Downstream Site
- ✓ Earthfill Dam
- ✓ 140,000 AF

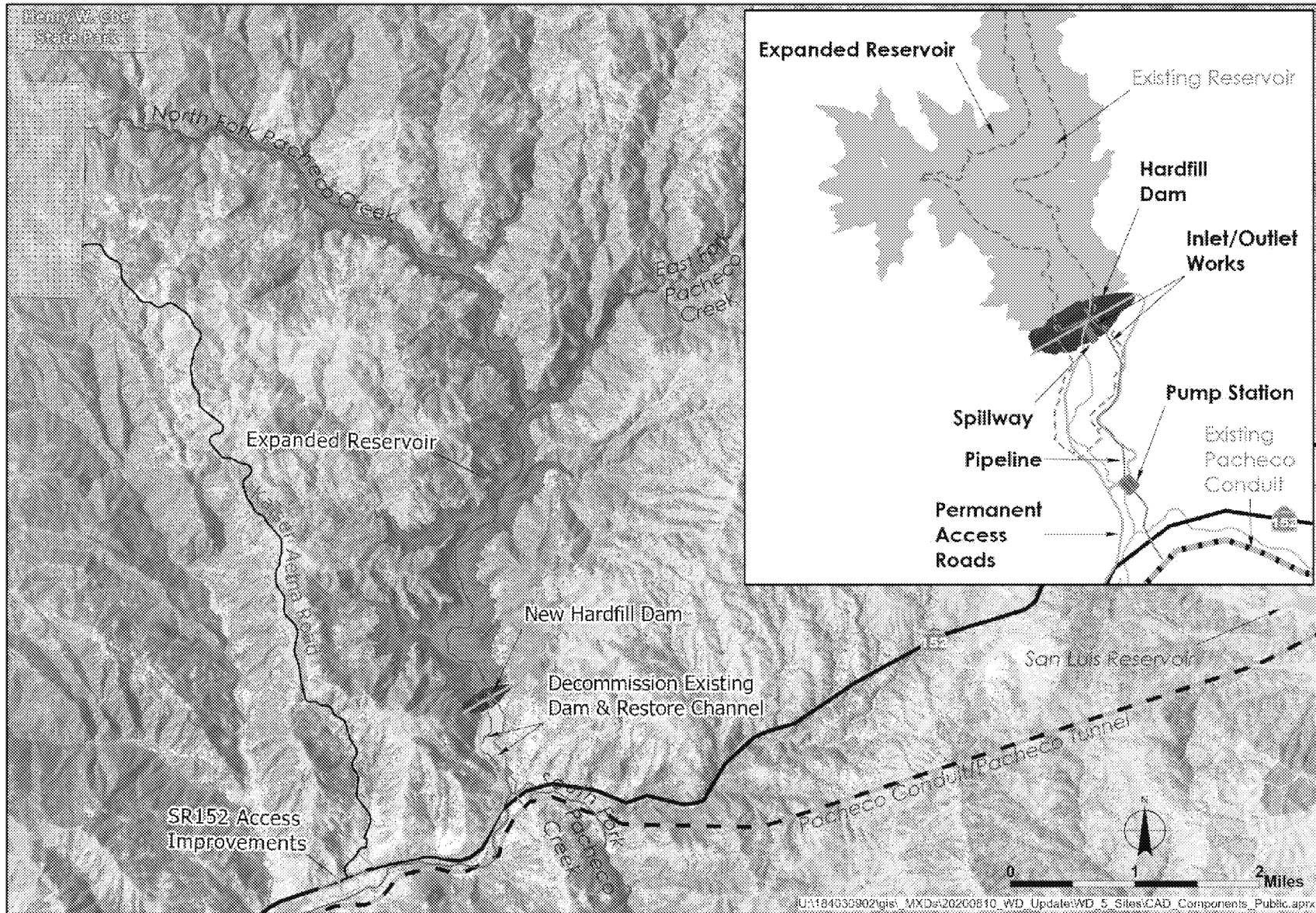


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Preliminary
Alternative #

2

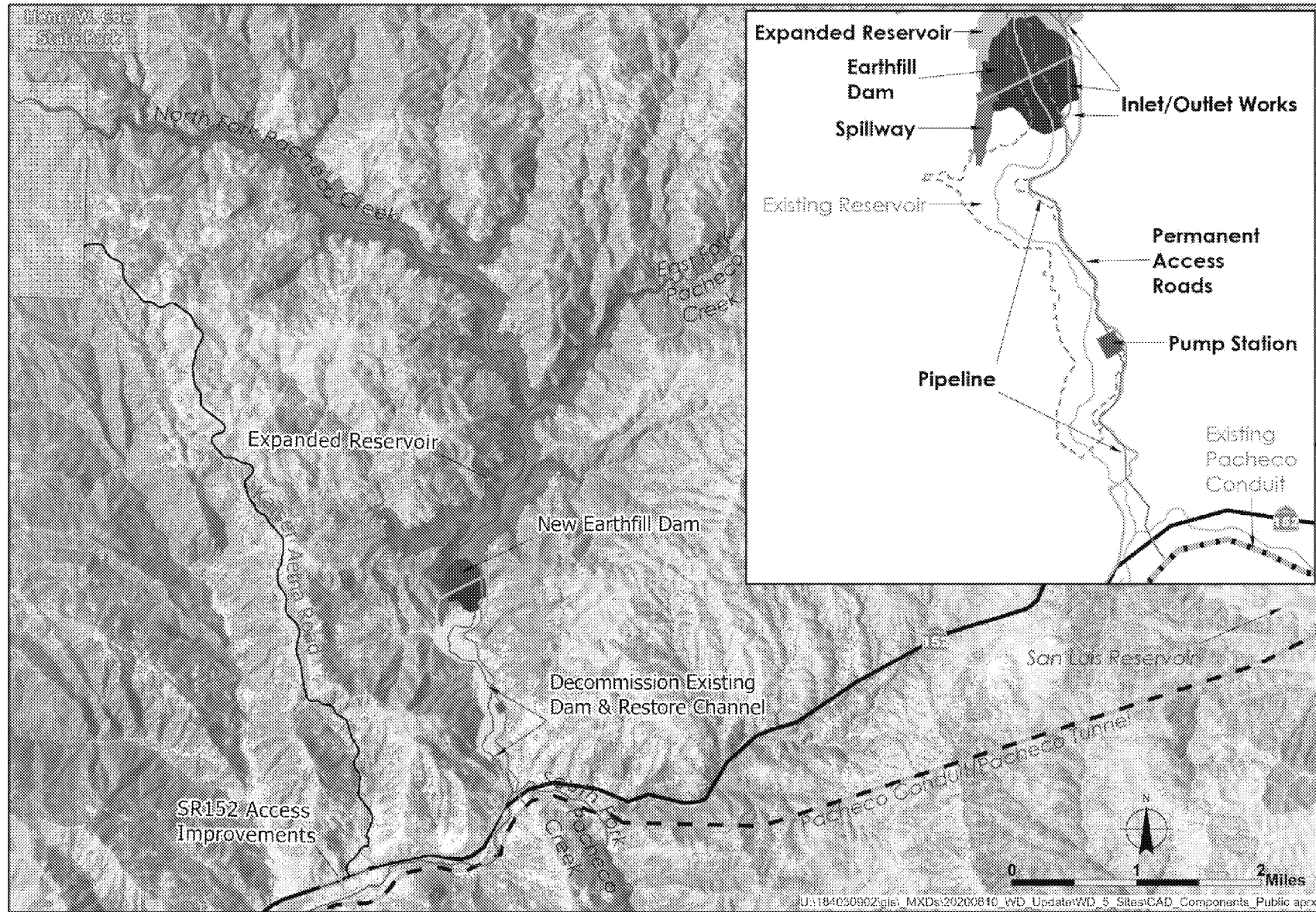
- ✓ Downstream Site
- ✓ Hardfill Dam
- ✓ 140,000 AF



Preliminary
Alternative #

3

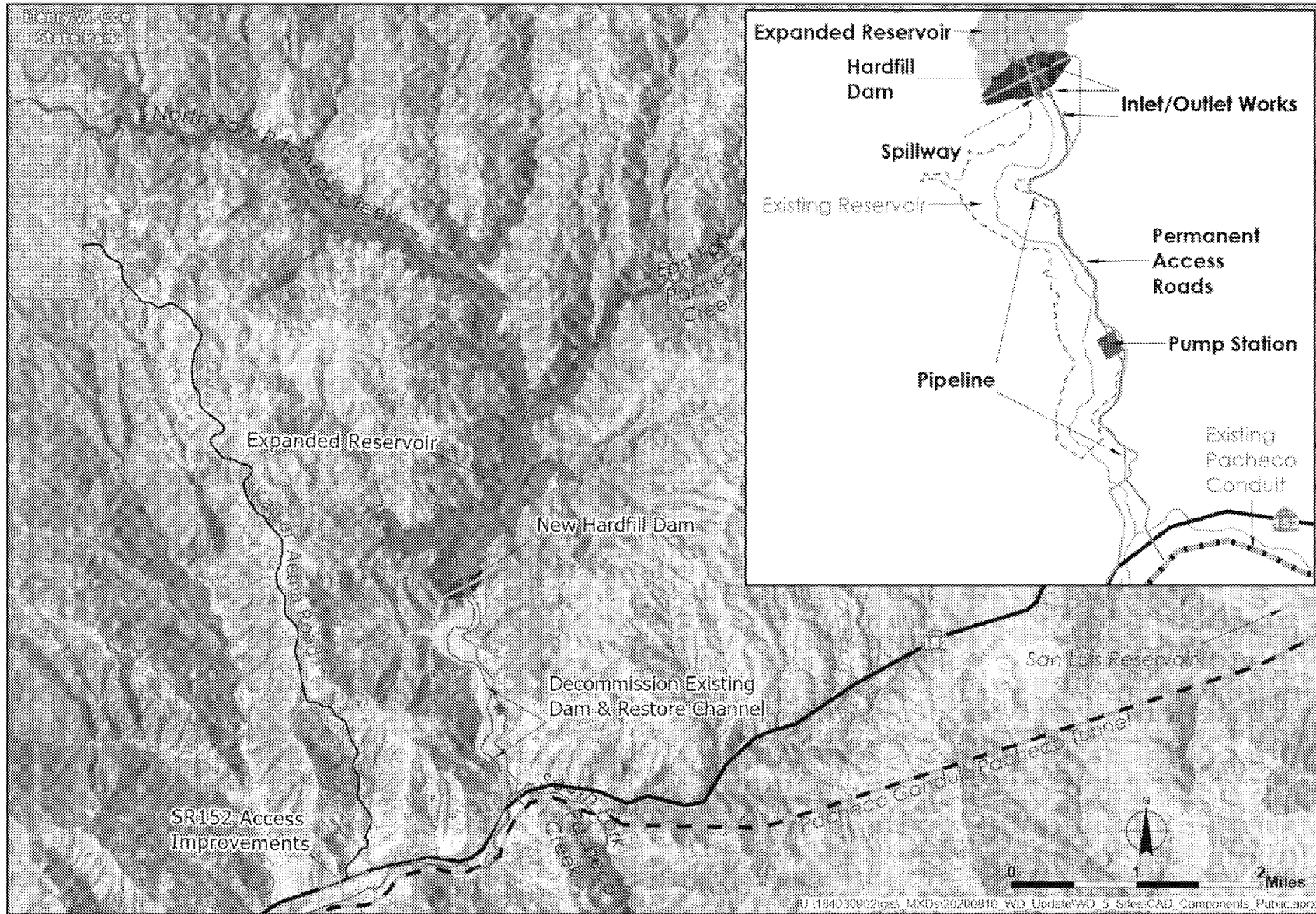
- ✓ Upstream Site
- ✓ Earthfill Dam
- ✓ 140,000 AF



Preliminary
Alternative #

4

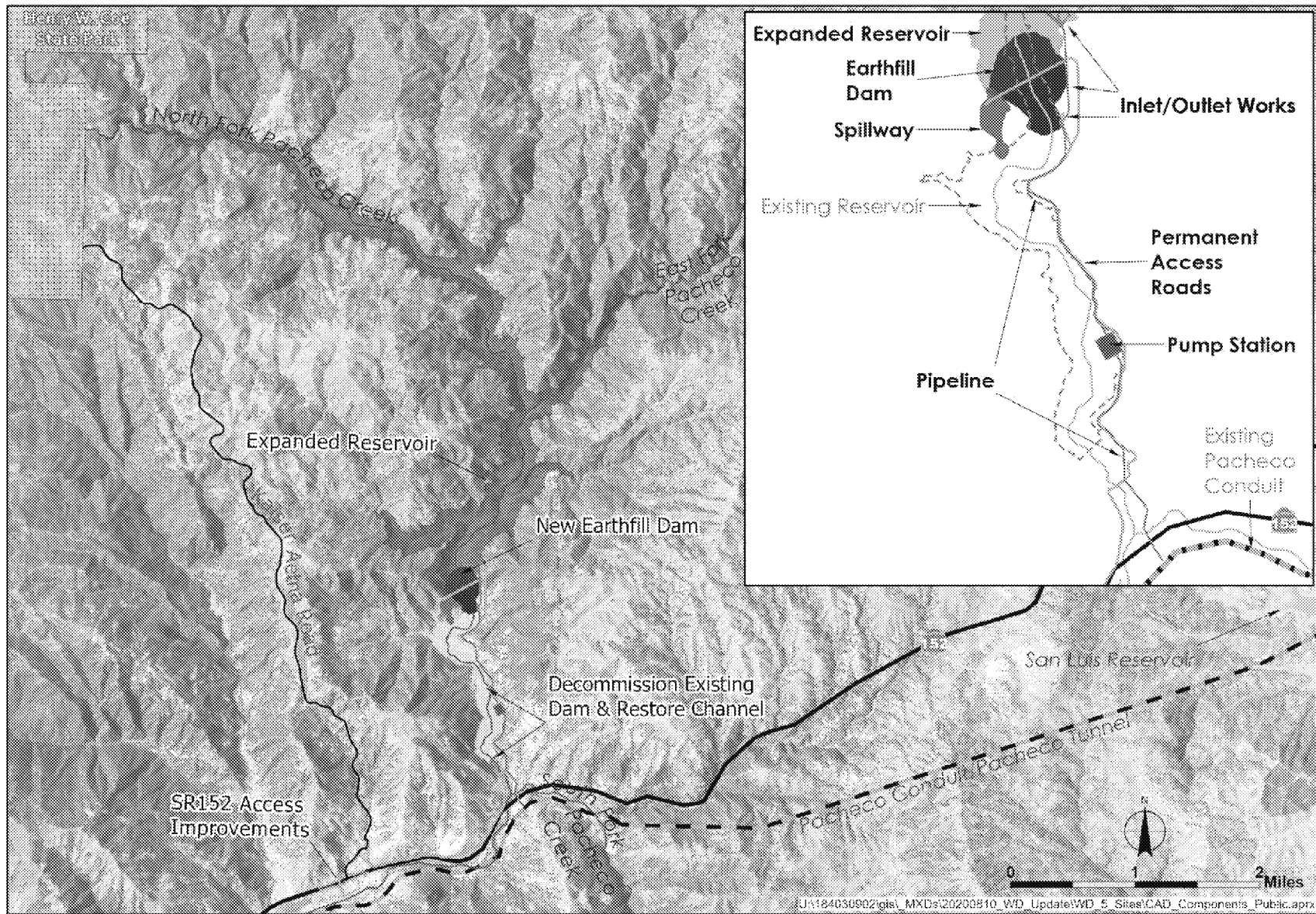
- ✓ Upstream Site
- ✓ Hardfill Dam
- ✓ 140,000 AF



Preliminary
Alternative #

5

- ✓ Upstream Site
- ✓ Earthfill Dam
- ✓ 96,000 AF



Summary of Preliminary Alternatives

Preliminary Alternative #	Facilities Variations			Notes
	Dam Site Location	Expanded Reservoir Size	Dam Type	
1	Downstream	140,000 AF	Earthfill	<ul style="list-style-type: none"> • Similar to WSIP application • Spillway and inlet/outlet works are separate from dam
2	Downstream	140,000 AF	Hardfill	<ul style="list-style-type: none"> • Spillway and inlet/outlet works are integrated into dam • Potentially shorter construction duration • Technical/permitting challenges
3	<i>Upstream</i>	140,000 AF	Earthfill	<ul style="list-style-type: none"> • Narrower dam (less embankment volume) • Spillway and inlet/outlet works are separate from dam • Encroaches into Henry Coe Park at full pool
4	<i>Upstream</i>	140,000 AF	Hardfill	<ul style="list-style-type: none"> • Narrower dam (less embankment volume) • Spillway and inlet/outlet works are integrated into dam • Potentially shorter construction duration • Technical/permitting challenges • Encroaches into Henry Coe Park at full pool
5	<i>Upstream</i>	96,000 AF	Earthfill	<ul style="list-style-type: none"> • Narrower and smaller dam • Spillway and inlet/outlet works are separate from dam • Provides 31% less reservoir capacity

Questions?

<https://www.valleywater.org/pachecoexpansion>



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Page 152



Santa Clara Valley Water District

File No.: 20-0979

Agenda Date: 10/30/2020
Item No.: 4.4.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Potential Water Storage Projects (Comparison Matrix).

RECOMMENDATION:

Receive and discuss draft comparison matrix of potential storage projects to diversify from Semitropic groundwater bank.

SUMMARY:

Santa Clara Valley Water District (Valley Water) staff have been exploring different groundwater banking opportunities as well as surface storage projects to diversify and potentially expand its storage capabilities. This effort is relevant given that implementation of the Sustainable Groundwater Management Act (SGMA) regulations and increasing water quality issues may impact long term operations of the Semitropic groundwater bank. Furthermore, California's Fourth Climate Change Assessment Technical Reports indicate that future water supplies will likely come in concentrated and shorter wet periods that will result in large surpluses of water that may require additional storage facilities to capture. At the same time, sea level rise will likely increase salinity intrusion into the Delta, which may reduce the availability of State Water Project (SWP) and Central Valley Project (CVP) supplies during drier years, increasing Valley Water's reliance on stored supplies.

At the October 13, 2020 meeting of the Water Storage Exploratory Committee (Committee), a draft "comparison matrix" was presented to help guide Valley Water's discussions and banking project review in a consistent format. The Committee requested the "comparison matrix" be updated to include both groundwater banking projects and surface storage projects. Attachment 1 is an updated working draft version of this comparison matrix that needs further development. When the projects are adequately defined, they will be tentatively rated against one another based on the best available information using the objectives and criteria described in Attachment 2.

Attachment 2 was updated in order to effectively evaluate the ability of surface storage projects to provide diversification from Valley Water's investment in the Semitropic groundwater bank. The objectives and evaluation criteria are currently in draft form; additional refinements and modifications are anticipated.

The comparison matrix incorporates information on four prospective groundwater banking projects and four surface storage projects that are currently under investigation:

Groundwater Banking Projects	Surface Storage Projects
AVEK 'High Desert' Groundwater Bank	Los Vaqueros Expansion
Buena Vista WSD Groundwater Bank	Sites Reservoir
Pleasant Valley WD Groundwater Bank	Pacheco Reservoir Expansion
Mid-Valley Groundwater Bank	San Luis Reservoir Expansion

ATTACHMENTS:

- Attachment 1: Matrix Comparison of Storage Projects
- Attachment 2: Storage Projects Objectives & Evaluation Criteria

UNCLASSIFIED MANAGER:

Vincent Gin, 408-630-2633

Preliminary Matrix Comparison of Storage Projects – October 2020 DRAFT

	Semitropic Groundwater Bank	AVEK 'High Desert' Groundwater Bank	Buena Vista WSD Groundwater Bank	Pleasant Valley WD Groundwater Bank	Mid-Valley Groundwater Bank	Los Vaqueros Expansion	Sites Reservoir – 3.2% Option	Pacheco Reservoir Expansion	San Luis Reservoir Expansion	
<i>WSMP Benefits</i>	Existing Project	WSMP Alternative Project 'Groundwater Bank' - Project to optimize the use of existing supplies and infrastructure				WSMP Alternative Project to optimize the use of existing supplies and infrastructure	WSMP Alternative Project to Secure Existing Supplies and Infrastructure	WSMP Project to optimize the use of existing supplies and infrastructure	Not included in WSMP	
<i>Status</i>	Established/Functional	Proposed by AVEK/ Under development & review	Proposed by Buena Vista/ Under development & review	Proposed by PVWD/ Under development & review	Proposed by MAGSA/ Under development & review	Planning & Design/ Environmental Review Complete	Proposed by Sites JPA/ Under Development/ Environmental Planning Permitting	Proposed by Valley Water	Proposed by SLDMWA/ USBR Under Development	
<i>Location</i>	Northern Kern County	Antelope Valley/Mojave	Northern Kern County	Fresno County near Coalinga	Fresno County near Kerman	Contra Costa County	Glenn/Colusa County near Maxwell	Santa Clara County	Merced County	
<i>Real Property</i>	Owned	Land Acquisition / Negotiations Scheduled Summer 2021	To Be Determined	To Be Determined	Land / Easement Acquisition Scheduled 2022 - 2024	N/A	Land Acquisition/Negotiations on Schedule	Land Acquisition pending release of EIR	Hwy 152 / Schedule TBD	
<i>Term of Agreement</i>	Expires 12/31/35	To Be Negotiated	To Be Negotiated	To Be Negotiated	To Be Negotiated	JPA Operated, Term TBD	To Be Negotiated	N/A	TBD	
<i>Governance</i>	<i>Managing Agencies</i>	Semitropic Water Storage District	Antelope Valley East Kern Water Agency	Kern County Water Agency	Pleasant Valley Water District	McMullin Area Groundwater Sustainability Agency	Los Vaqueros JPA	Sites Project Authority (Sites JPA)	Valley Water	USBR/SLDMWA
	<i>Owner</i>	Semitropic WSD	Antelope Valley East Kern Water Agency	Kern County Water Agency	Pleasant Valley Water District	McMullin Area Groundwater Sustainability Agency	CCWD	Sites Project Authority (Sites JPA)	Valley Water	TBD
	<i>Participation Mechanism</i>	Existing Contract with Priority Rights	Contract (Priority)	Contract (Priority)	Contract (Priority)	Contract (Priority)	JPA; TBD	JPA; TBD (Governance Role or Contract)	Owner/Operator	TBD
<i>Operations</i>	<i>Max Storage</i>	350,000 AF	Tentative 200,000 AF plus (under evaluation)	No Defined Limit	Under development	Under development; estimated 200 TAF	TBD	45,000 AF	140,000 AF	TBD
	<i>Annual Put Limit</i>	31,675 AF/yr.	Tentative 40,000 AF/yr. (under evaluation)	Proposed 120,000 AF/yr. Maximum	Under development	Under development	N/A	Under development	N/A	N/A
	<i>Put Conveyance</i>	SWP/CVP Direct and In-Lieu Recharge	SWP/CVP Direct and In-Lieu Recharge	SWP/CVP Direct and In-Lieu Recharge	SWP/CVP Direct and In-Lieu Recharge	SWP/CVP Direct and In-Lieu Recharge	CCWD/EBMUD Diversions	SWP/CVP Exchange Sites Sac. River Direct	San Felipe Conduit	SWP/CVP Direct
	<i>Storage Water Types</i>	SWP, CVP, Non-Project	SWP, CVP, Non-Project	SWP, CVP & CVP-Friant Non-Project	CVP & SWP, Non-Project	CVP & SWP	CVP & SWP	New Water & Non-Project. (SWP/CVP under development)	Local, CVP, Possibly SWP	SWP, CVP, Non-Project
	<i>Annual Take Limit</i>	31,675 AF/yr. Minimum	Tentative 40,000 AF/yr. (under evaluation)	Proposed One-tenth of return obligation in a 'return year'	Under development	Under development	N/A	Under development	N/A	Under development
<i>Take Conveyance</i>	SWP Supply Exchange	SWP Supply Exchange	SWP Supply Exchange	CVP Supply Exchange w/other undefined water agency	Under development, Exchange w/ Exchange Contractor + Refuge CVP supplies, SWP Supply Exchange	Transfer Bethany Pipeline to SBA or thru California Aqueduct to San Luis Reservoir	SWP Supply Exchange	Thru existing conveyance on San Felipe Division facilities maintained by VW	CVP Supply	

Preliminary Matrix Comparison of Storage Projects – October 2020 DRAFT

<i>Losses</i>	<i>Storage</i>	10% Leave-Behind	10% Leave-Behind	<i>Proposed 50% to 75% Leave-Behind during 50%-80% SWP allocation years</i>	<i>Under development</i>	<i>Under development</i>	<i>Annual Evaporation - TBD</i>	<i>Annual Evaporation - TBD</i>	<i>Annual Evaporation - TBD</i>	<i>Annual Evaporation - TBD</i>
	<i>Conveyance</i>	None	None	None	5% Estimated	<i>Under development</i>	None	<i>Carriage Loss (20-35%)</i>	None	<i>Minimal; TBD</i>
<i>Costs</i>	<i>Total Project Cost</i>	~\$135 Million (1995 dollars)	<i>Under development, up to \$195 Million</i>	<i>Under development</i>	<i>Under development</i>	<i>Under development</i>	<i>Est. 900 Million</i>	<i>Est. \$3 Billion</i>	<i>Est. \$1.3 Billion</i>	<i>Est. 910 Million</i>
	<i>Put Costs</i>	\$89/AF (CPI-adjust)	None	None	<i>Under development</i>	<i>Under development</i>	<i>Under development</i>	<i>Under development (likely N/A)</i>	<i>Pumping cost from conduit</i>	<i>Same as existing CVP/SWP</i>
	<i>Take Costs</i>	\$89/AF (CPI-adjust)	<i>Proposed \$100/AF (CPI-adjust)</i>	None	<i>Under development</i>	<i>Under development</i>	<i>Under development</i>	<i>Under development (likely N/A)</i>	None	<i>Same as existing CVP/SWP</i>
	<i>VW Capital Investment</i>	~\$47 Million (1995 dollars)	<i>Under development – Est. \$60 - \$100 Mil</i>	<i>Estimated \$50 Mil not including permitting</i>	<i>Under development</i>	<i>Under development</i>	TBD	<i>Est. \$125 Million</i>	TBD	TBD
	<i>Recurring O&M</i>	Approx. \$2.4 Mil/yr. Flat (Covers Put/Take Costs)	Approx. 10% capital costs/yr.	None	<i>Under development</i>	<i>Under development</i>	TBD	<i>Approx. \$800,000 /yr. (Covers Variable Energy Costs)</i>	TBD	TBD
	<i>Other Costs</i>	Variable pumping/ energy (credited back) treatment recovery costs	- Variable pumping/energy recovery costs - 'Minimum Recovery Usage Fees', proposed minimum annual rolling average \$715,000 - Annual Management Costs	Variable pumping/energy recovery costs	<i>Under development</i>	<i>Under development</i>	TBD	- Repair and Replacement	None	<i>Under development</i>
<i>Issues</i>	<i>SGMA</i>	Kern County SB 'High Priority'	Adjudicated, No Issues	Kern County SB 'High Priority'	Pleasant Valley SB 'Medium Priority'	Kings County SB 'High Priority'	N/A	N/A	N/A	N/A
	<i>Water Quality</i>	Moderate-Poor Quality (TDS/Arsenic/1,2,3-TCP)	Generally Good Quality	Poor Quality (High TDS/Nitrates/Arsenic)	Poor Quality (High TDS/Sulfates)	Under development (potential issues with Arsenic, TDS)	None – CCWD manages for WQ	Delta Dependent	Delta and SLR Dependent	Delta Dependent
	<i>Conveyance limitations</i>	SWP exchange capacity limitations in dry years; KCWA approval required	SWP exchange capacity limitations in dry years	SWP exchange capacity limitations in dry years; KCWA approval required	No direct connection to SWP or CVP facilities; will require an exchange partner and new facilities	Potential exchange with SJREC and Refuges (~18 TAF/month May-Sept thru Mendota Pool)	CCWD conveyance tied to operation of Transfer Bethany Pipeline capacity	SWP conveyance capacity in SOD	None	TBD
<i>Pro's</i>	- Effective operation over the past 23 years - Outperformed on Put's and Take's in numerous years, including 2014-2015 during drought	- Less groundwater management issues in adjudicated basin. - Direct partnership with SWP contractor, no need for KCWA approval - AVEK willing to exchange their entire Table A allocation	- Sound conjunctive management with adequate surface water supplies including Kern River entitlement - Minimal observed historical subsidence	- Small subbasin managed by a single GSA/District - Location closer to CA and DMC than other banking projects - CVP contractors to exchange supplies may be a benefit	- Good location adjacent to Mendota Pool and Delta Mendota Canal; allows for less extensive infrastructure and potentially lower costs - Plentiful CVP exchange capacity to support withdrawals	- Option for conveyance in addition to possible storage - Transfer Bethany Pipeline allows for regional projects - Project links directly to California Aqueduct - Could provide a regional option for diversifying from current gw bank	- New Water Source - Dry year yield Coordination with USBR may indirectly improve CVP reliability at no additional cost - Conditionally approved for \$816 million Prop 1 Grant Funding - Approved for \$450 Million USDA Loan	- May provide significant environmental benefits and local emergency water supply - Minimal opposition from NGO's and permitting agencies	- Added capacity to existing facility - May provide additional CVP supplies	

Preliminary Matrix Comparison of Storage Projects – October 2020 DRAFT

<p align="center"><i>Con's</i></p>	<ul style="list-style-type: none"> - Uncertainty regarding reliability under SGMA - Limited exchange of KCWA Table A - Cost increases possible with energy/treatment - KCWA control of storage and recovery - Limited exchange capacity in dry years 	<ul style="list-style-type: none"> - High energy costs with disputed cost allocation - Limited exchange capacity in dry years 	<ul style="list-style-type: none"> - Expensive in terms of dollars and water lost - Proposal commits first 120,000 AF/yr to be banked in BV limiting 'flexibility' - Withdrawal of water is constrained and may not be aligned with VW needs - Kern River flood control may impact storage/recovery 	<ul style="list-style-type: none"> - Not connected to SWP or CVP system, other water agency partner(s) needed for storage and recovery - Poor GW quality - Project is currently poorly defined 	<ul style="list-style-type: none"> - Uncertainty regarding future reliability under SGMA 	<ul style="list-style-type: none"> - CCWD maintains priority use of system - Without Transfer Bethany pipeline, relies on untested CVP supply exchange - CVP exchange will result in conveyance costs 	<ul style="list-style-type: none"> - Concerns over governance role in large project - Relies on conveyance across Delta - Requires coordination with DWR and USBR 	<ul style="list-style-type: none"> - Operations may be limited by agreement with State agencies to ensure State benefits in order to secure Prop 1 funding 	<ul style="list-style-type: none"> - USBR may impose constraints on use of storage and water - SWP/DWR may not support the project
<p align="center"><i>Other Considerations</i></p>	<ul style="list-style-type: none"> - If Semitropic fails to perform, Semitropic may pay VW to retain VW's water supplies 	<ul style="list-style-type: none"> - Project is in initial stages; land acquisition, engineering design and construction has not yet been initiated; however, MWD is developing an adjacent bank with AVEK so information sharing can facilitate development. 	<ul style="list-style-type: none"> - Unclear capital investment terms for \$50Mil estimate 	<ul style="list-style-type: none"> - Development on hold until GSP submission in 2022 	<ul style="list-style-type: none"> - Project is in initial stages; additional analysis of geology, water quality, SGMA limitations is needed. - Land acquisition and other partnerships need to be developed - Terms are yet to be developed but are negotiable 	<p align="center">Under development</p>	<ul style="list-style-type: none"> - Transfer exchanges may be possible with other participants - Potential Environmental benefits in Delta 	<ul style="list-style-type: none"> - Permitting work still needs to be completed - Local environmental benefits, Potential Delta environmental benefits - Local supply source in case of Delta emergency 	<ul style="list-style-type: none"> - Alternative Configurations: CVP-only, SWP-CVP, Investor directed - Option for 90% M&I controlled storage
<p align="center"><i>Tentative Rating – Subject to Change</i></p>	<p align="center">TBD</p>	<p align="center">TBD</p>	<p align="center">TBD</p>	<p align="center">TBD</p>	<p align="center">TBD</p>	<p align="center">TBD</p>	<p align="center">TBD</p>	<p align="center">TBD</p>	

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WATER STORAGE PROJECT OBJECTIVES

1. **Cost Effectiveness for Valley Water (responsibility to our Customers)**

Executive Limitation 4.2 states that the Board Appointed Officers shall “Spend in ways that are cost-efficient.” New projects should be competitive in price to other projects and other imported water supplies.

2. **Optimize Project Location**

The location should allow for direct delivery to and from the project facility, minimize conveyance losses, minimize conveyance and energy costs, and ensure reliable operations. Consideration should be given to projects South-of-Delta to ensure accessibility of stored water. in the event of a Delta outage or other emergency.

3. **Minimize Regulatory Constraints to Operations**

Preferred projects will have the least operational uncertainty with respect to existing regulations or anticipated future regulations. Consideration should be given to various water rights, storage, and conveyance agreements required for stable operations.

4. **Promote Projects that are Feasible and able to be Constructed**

Preferred projects should be in areas with good water quality for constituents of concern, provide adequate storage capacity, allow for efficient storage and recovery of water, be financially and politically feasible, and have a defined schedule for construction. Planning analysis to-date and best available information should indicate project construction is technically feasible.

5. **Improve Water Supply Reliability or Provide Other Benefits**

Projects should diversify Valley Water’s storage portfolio to provide storage for Wet year water, provide Dry year yield, provide local emergency supplies, provide local and Delta environmental benefits, ability to respond to a Delta outage or other emergency, and minimize losses of stored water whether by leave-behind or evaporation. This objective also should consider other tertiary benefits unique to individual projects, when possible.

6. **Promote Projects that Increase Operational Flexibilities and Supply Management Tools**

Integration with existing projects can improve current conjunctive management and provide certainty that the water supply benefits of the project will be realized when Valley Water needs them. A project should offer the ability to store various water types, facilitate transfers of various water types and provide a synergistic effect with current or future projects.

7. **Provide Sufficient District Control Over Supplies and Operations**

Preferred projects should allow Valley Water to adapt to changes in water supplies by providing a high degree of control including directly controlled supplies and supplies developed in partnership with other local and regional agencies.

8. **Consider and Adapt to Climate Change**

CEO Interpretation S.2.7 of Ends Policy E-2 “there is a reliable, clean water supply for current and future generations” calls for Valley Water to “incorporate climate change mitigation and adaptation into District planning efforts.” A project should allow for adaption to potential changes in future water supplies, including potentially reduced CVP and SWP imported supplies and concentrated shorter wet periods that may increase reliance on stored supplies.

CRITERIA FOR EVALUATING PROJECTS

Criteria	Scoring Guidelines (Assign Score of 1 to 5)
Cost (Present Value Cost per Acre-Foot of Storage) <i>(Omitted from Rating-Under Dev)</i>	(5) <\$800 (comparable to SJREC dry year transfer program) (3) \$800 - \$1,200 (expensive but 'guaranteed' water in low allocation year types) (1) >\$1200
Optimize Project Location	(5) Located close to Valley Water Service Area AND CVP or SWP Project conveyance feature(s) (3) Located close to Valley Water Service Area OR CVP or SWP Project conveyance feature(s) (1) Located far from Valley Water Service Area or CVP or SWP Project conveyance feature(s)
Regulatory Constraints on Operations	(5) Minimal regulatory risks (3) Some regulatory risk (1) Significant regulatory risk
Feasibility (Current Level of Project Development and Technical Feasibility)	(5) Defined schedule and Feasibility Study complete (3) Defined schedule but technical feasibility not confirmed, no studies or exploratory work complete (1) Undefined schedule and/or no studies or exploratory work complete
Project Feasibility	(5) Minimal outside agency opposition and permitting challenges AND plan of finance with committed partners (3) Some outside agency opposition and permitting challenges OR plan of finance with committed partners (1) Significant outside agency opposition and permitting challenges, or no plan for financing
Improve Water Supply Reliability	(5) Provides improved water supply reliability during extended (3-6 year) drought AND other benefits including but not limited to minimal storage losses, storage for wet year water, new water supply (3) Provides other benefits including but not limited to minimal storage losses, storage for wet year water, new water supply (1) Inability to improve water supply reliability during an extended drought or no other tertiary benefits
Other Benefits (Emergency Supplies and Environmental Benefits)	(5) Local and Delta environmental benefits AND the ability to respond to a Delta outage or other emergency (3) Local and Delta environmental benefits OR the ability to respond to a Delta outage or other emergency (1) No local or Delta environmental benefits and inability to respond to a Delta outage or other emergency
Maximize Operational Flexibility	(5) Allows storage of various water types (CVP/SWP/Other) AND direct withdrawal or project water (CVP/SWP) exchange with storage and recovery when needed in all water year types (3) Allows storage of various water types (CVP/SWP/Other) OR direct withdrawal or project water (CVP/SWP) exchange with storage and recovery in all water year types (1) No direct project water (CVP/SWP) exchange, limited capacity and time duration to fill or recover, and limited to no recovery in low project allocations.
Increase Supply Management Tools (Synergy with Current or Future Projects)	(5) Improves benefits or efficacy of current or future projects (3) Maintains benefits or efficacy of current or future projects (1) Reduces benefits or efficacy of current or future projects
District Control Over Supplies and Operations (Governance)	(5) Valley Water owns and operates the project or share of facility AND directly controls supplies or supplies developed with other agencies (3) Valley Water owns and operates the project or share of facility OR directly controls supplies or supplies developed with other agencies (1) Valley Water is afforded limited or no control of stored water
Climate Change Resiliency	(5) Benefits improve with climate change. (3) Benefits remain the same regardless of climate (1) Benefits decrease with climate change

How to use:

- Evaluate a project and assign it a score of 1 to 5 for each of the criteria based on the scoring guidelines.
- Sum the scores for each criterion to determine a project's score.
- Repeat process with other projects and compare the results. The higher a project's score the more suitable it is to Valley Water's needs.



Santa Clara Valley Water District

File No.: 20-0965

Agenda Date: 10/30/2020
Item No.: 4.5.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Standing Items Information.

RECOMMENDATION:

- A. This agenda item allows the Committee to receive verbal or written updates and discuss the following subjects. These items are generally informational; however, the Committee may request additional information from staff:
 - B. This is informational only and no action is required.
Staff may provide a verbal update at the 10-30-2020, meeting if there is reportable/updated information.
1. Update on Los Vaqueros Reservoir Expansion Project (LVE) Transfer Bethany Pipeline (TBP) and Update on Management of South Bay Aqueduct (SBA) Facilities (10-30-2020, agenda item)
 2. Lake Del Valle
 3. Del Puerto
 4. Water Banking Opportunities including but not limited to Pleasant Valley Water District (10-30-2020, agenda item)
 5. Pacheco/San Luis Reservoir Low Point (discuss Pacheco Authority and Proposition 1 Water Storage Investment Program Update) (10-30-2020, agenda item)
 6. Semitropic
 7. Sites (10-30-2020, agenda item)
 8. B.F. Sisk Dam Raise Project
 9. Shasta

SUMMARY:

Standing Items will allow regular reports from staff on subjects that may be of interest to the committee members.

ATTACHMENTS:

None.

File No.: 20-0965

Agenda Date: 10/30/2020
Item No.: 4.5.

UNCLASSIFIED MANAGER:

Michele King, 408-630-2711



Santa Clara Valley Water District

File No.: 20-0966

Agenda Date: 10/30/2020
Item No.: 4.6.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Review Water Storage Exploratory Committee Work Plan and the Committee's Next Meeting Agenda.

RECOMMENDATION:

Review the Committee's Work Plan to guide the Committee's discussions regarding policy alternatives and implications for Board deliberation.

SUMMARY:

The Committee's Work Plan outlines the Board-approved topics for discussion to be able to prepare policy alternatives and implications for Board deliberation. The work plan is agendaized at each meeting as accomplishments are updated and to review additional work plan assignments by the Board.

BACKGROUND:

Governance Process Policy-8:

The District Act provides for the creation of advisory boards, committees, or committees by resolution to serve at the pleasure of the Board.

Accordingly, the Board has established Advisory Committees, which bring respective expertise and community interest, to advise the Board, when requested, in a capacity as defined: prepare Board policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. In keeping with the Board's broader focus, Advisory Committees will not direct the implementation of District programs and projects, other than to receive information and provide comment.

Further, in accordance with Governance Process Policy-3, when requested by the Board, the Advisory Committees may help the Board produce the link between the District and the public through information sharing to the communities they represent.

ATTACHMENTS:

Attachment 1: WSEC 2020 Work Plan

Attachment 2: Next Meeting's Proposed Agenda

File No.: 20-0966

Agenda Date: 10/30/2020
Item No.: 4.6.

UNCLASSIFIED MANAGER:
Michele King, 408-630-2711

2020 Work Plan: Water Storage Exploratory Committee

Update: October 2020

The annual work plan establishes a framework for committee discussion and action during the annual meeting schedule. The committee work plan is a dynamic document, subject to change as external and internal issues impacting the District occur and are recommended for committee discussion.

ITEM	WORK PLAN ITEM	MEETING	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
1	<p>Standing Items:</p> <ol style="list-style-type: none"> 1. Update on Los Vaqueros Reservoir Expansion Project (LVE) Transfer Bethany Pipeline (TBP) and Update on Management of South Bay Aqueduct (SBA) Facilities 2. Lake Del Valle 3. Del Puerto 4. Water Banking Opportunities including but not limited to Pleasant Valley Water District 5. Pacheco/ San Luis Reservoir Low Point 6. Semitropic 7. Sites 8. B.F. Sisk Dam Raise Project 9. Shasta 	<p>1-15-2020 10-14-2020 10-30-2020</p>	<ul style="list-style-type: none"> • Receive quarterly reports on standing items. (Information) 	<p><u>Accomplished January 15, 2020:</u> The Committee took the following action:</p> <ul style="list-style-type: none"> • That the Board consider the Committee's recommendation to the Board to accelerate the partnerships discussion for the Pacheco Reservoir Expansion Project. <p>Board received this information on February 25, 2020 and took the following action: Approved the Water Storage Exploratory Committee's recommendation.</p> <p>Pacheco and San Luis Reservoir Low Point Projects will be joined as one work plan item</p> <p><u>Accomplished October 14, 2020:</u> The Committee received quick updates on Los Vaqueros Reservoir Expansion Project (LVE) B.F. Sisk Dam Raise Project and Shasta.</p>
2	<p>Review of 2020 Water Storage Exploratory Committee Work Plan</p>	<p>1-15-2020 07-13-2020 8-21-2020 10-14-2020 10-30-2020</p>	<ul style="list-style-type: none"> • Review the Committee's 2020 Work Plan. 	<p><u>Accomplished January 15, 2020:</u> The Committee reviewed the Committee's 2020 work plan and took no action.</p> <p><u>Accomplished July 13, 2020:</u> The Committee reviewed the Committee's 2020 work plan and took no action.</p> <p><u>Accomplished August 21, 2020:</u> The Committee reviewed the Committee's 2020 work plan and took no action.</p>

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1

Page 1 of 3

2020 Work Plan: Water Storage Exploratory Committee

Update: October 2020

ITEM	WORK PLAN ITEM	MEETING	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
				Accomplished October 14, 2020: The Committee reviewed the Committee's 2020 work plan and took no action.
3	Del Puerto Canyon Reservoir Update	07-13-2020	<ul style="list-style-type: none"> Receive information regarding the status of Del Puerto Canyon Reservoir. 	Accomplished July 13, 2020: Special guests Mr. Chris White and Ms. Anthea Hansen gave a presentation of the Del Puerto Canyon Reservoir. The Committee took no action.
4	Update on Los Vaqueros Reservoir Expansion Project: Storage, Transfer-Bethany Pipeline, and South Bay Aqueduct Capacity	07-13-2020 08-21-2020 10-30-2020	<ul style="list-style-type: none"> Receive and discuss information regarding the Los Vaqueros Reservoir Expansion Project: Storage, Transfer-Bethany Pipeline, and South Bay Aqueduct Capacity Recommend update as action item for next Board of Directors meeting. 	<p>Accomplished July 13, 2020: The Committee received an update on the Los Vaqueros Reservoir Expansion Project: Storage, Transfer-Bethany Pipeline, and South Bay Aqueduct Capacity and discussed taking the following action: The Committee recommended to approve staff's recommendation to bring Amendment 2 to the 2019 Multi-Party Agreement to the Board of Directors for its consideration by roll call vote and Directors voting aye! One footnote, Committee requested that updated information come back to the Committee before going to the full Board.</p> <p>Accomplished August 21, 2020: The Committee received an update on the Los Vaqueros Reservoir Expansion Project: Storage, Transfer-Bethany Pipeline, and South Bay Aqueduct capacity and discussed taking no action.</p>
5	Update on the B.F. Sisk Dam Raise Project	07-13-2020	<ul style="list-style-type: none"> Receive and discuss information on the B.F. Sisk Dam Raise Project. 	Accomplished July 13, 2020: The Committee received an update on the B.F. Sisk Dam Raise Project and discussed taking no action.

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1

Page 2 of 3

2020 Work Plan: Water Storage Exploratory Committee

Update: October 2020

ITEM	WORK PLAN ITEM	MEETING	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
6	Second Amendment to 2019 Reservoir Project Agreement for Continued Participation in the Sites Reservoir Project	07-13-2020 08-21-2020 10-30-2020	<ul style="list-style-type: none"> Receive and discuss information regarding Sites Reservoir Project. 	<p><u>Accomplished July 13, 2020:</u> The Committee received an update on the Sites Reservoir Project and discussed without taking action, however, before taking action, requested more information on the agreement/project for further discussion at the next meeting.</p> <p><u>Accomplished August 21, 2020:</u> The Committee received an update on the Sites Reservoir Project and discussed taking no action. The Committee still has some concerns and questions so that staff will bring back for the next meeting.</p>
7	Update on Pacheco/San Luis Reservoir Low Point Projects	07-13-2020 10-30-2020	<ul style="list-style-type: none"> Receive and discuss information regarding the status of Pacheco/San Luis Reservoir Low Point Projects. 	<p><u>Accomplished July 13, 2020:</u> The Committee received an update on the Pacheco/San Luis Reservoir Low Point Projects and discussed taking no action.</p>
8	Semitropic Groundwater Bank Update	10-14-2020	<ul style="list-style-type: none"> Receive and discuss information regarding the status of Semitropic Groundwater Bank 	<p><u>Accomplished October 14, 2020:</u> The Committee received an update on the status of Semitropic Groundwater Bank and discussed taking no action.</p>
9	Potential Groundwater Banking Projects (Comparison Matrix)	10-14-2020 10-30-2020	<ul style="list-style-type: none"> Receive and discuss information regarding ongoing development of staff comparison tools to analyze and compare potential groundwater banking projects. 	<p><u>Accomplished October 14, 2020:</u> The Committee received an update of ongoing development of staff comparison tools to analyze and compare potential groundwater banking projects and discussed taking no action. However, have staff update the matrix as much as possible (evaluate wider range of investments of the portfolio, expand framework and criteria) for the next meeting.</p>

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1

Page 3 of 3

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Page 168

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/26/2020 3:08:26 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; John Spranza (john.spranza@hdrinc.com) [john.spranza@hdrinc.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]
Subject: RE: Action Requested: CWC Quarterly Report 9

Flag: Follow up

My only comment is completion date for the EIR. We have June 2022 in our project schedule - March 2022 is the anticipated date for an administrative Final EIR/EIS.

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Friday, October 23, 2020 1:49 PM
To: John Spranza (john.spranza@hdrinc.com) <john.spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>
Subject: RE: Action Requested: CWC Quarterly Report 9

Whoops – Not sure how I accidentally sent that. Ignore that last email. Below is the full email. ----

Hi all – the CWC Quarterly Report is due soon. It covers July 1 to Sept 30. I've updated the file and the % complete spreadsheet. They are located here:

<https://sitesreservoirproject.sharepoint.com/f/r/reservoircommittee/Shared%20Documents/CWC?csf=1&web=1&e=Egvbb>

Can you take a look and add anything / make any changes? Its due on Tuesday afternoon, so would appreciate your input by mid-day on Tuesday.

Thanks!

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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-----Original Appointment-----

From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Tuesday, October 20, 2020 3:47 PM
To: Marcia Kivett; Ali Forsythe; Joe Trapasso; Henry Luu
Subject: Action Requested: CWC Quarterly Report 9
When: Tuesday, October 27, 2020 12:00 PM-12:30 PM (UTC-08:00) Pacific Time (US & Canada).
Where: This is not a meeting. It is a deadline reminder. Link is below.

Good Morning,

The report is due to the Water Commission on Friday 10/30. I will place a calendar appointment for you as a reminder to the due date.

Joe, Ali, Henry – develop initial content by Tuesday 10/27

Kevin – review input on Wednesday 10/28

Jerry – review on Thursday 10/29

CWC Quarterly Report 9 (through September 2020) is saved on SharePoint: [here](#). Please populate your respective sections (as indicated by the comments) in the document using tracked changes. Additional reference files are in the same folder for your use if necessary (the previous CWC Quarterly Report, Percent Complete Spreadsheets).

If you have any clarification questions, please let me know.

Thank you in advance for your help.

Cheyenne Harris

Brown and Caldwell | Sacramento, CA

CHarris@brwncald.com

T 916.853.5349

Pronouns: she/her/hers



From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/27/2020 9:02:23 AM
To: Leaf, Rob/SAC (Rob.Leaf@jacobs.com) [Rob.Leaf@jacobs.com]; Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Davis, Ryan A [rdavis@usbr.gov]; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) [Kenneth.Kundargi@wildlife.ca.gov]; Williams, Jonathan@Wildlife [Jonathan.Williams@wildlife.ca.gov]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Jerry Brown [jbrown@sitesproject.org]; Melissa Dekar (mdekar@usbr.gov) [mdekar@usbr.gov]; Cordova, Daniel (dcordova@usbr.gov) [dcordova@usbr.gov]; Wilder, Rick [Rick.Wilder@icf.com]; La Luz, Felipe@Wildlife [felipe.laluz@wildlife.ca.gov]; Chris Fitzer (CFitzer@esassoc.com) [CFitzer@esassoc.com]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; noblehendrix@gmail.com; Greenwood, Marin [Marin.Greenwood@icf.com]; Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; Alicia Forsythe [ali@forsythe-group.com]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Perry, Russell W [rperry@usgs.gov]; ebuttermore@usbr.gov; mbeakes@usbr.gov; smanugian@usbr.gov
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Schoenberg, Steven [steven_schoenberg@fws.gov]; cyril.michel@noaa.gov; Huneycutt, Andrew@Wildlife [Andrew.Huneycutt@Wildlife.ca.gov]; Johnson, Matt@Wildlife [Matt.Johnson@wildlife.ca.gov]; Sherrick, Robert@Wildlife [Robert.Sherrick@Wildlife.ca.gov]; Nelson, Jonathan@Wildlife [Jonathan.Nelson@wildlife.ca.gov]; Meyers, Erica@Wildlife [Erica.Meyers@wildlife.ca.gov]
Subject: Sites Joint Aquatics Workshop #1
Attachments: October 2020 Diversion Criteria.pdf

Good Morning,

We'd like to thank all of you for attending yesterday's workshop and hope that you found it useful. I have a few action items to follow up on:

1. Diversion Criteria Distribution: Please see attached
2. Coordinate on running the STARS model on the project.
3. Next meeting date: The week of the 23rd of November, very likely 10-12 on the 23rd. I will confirm with the team and send out an invite in the next day or so.
4. Determine the proportion of days and reversal of flows at Georgianna Slough.

We would appreciate your input on the workshop, and comments on the assumptions and effects seen in this model run. We are working on finalizing OBAN results and will have that ready in time for the next workshop.

Please let me know if I missed any action items.

Have a great day.

John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
hdrinc.com/follow-us

From: Cheyanne Harris [CHarris@BrwnCald.com]
Sent: 10/27/2020 9:58:54 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Marcia Kivett [MKivett@sitesproject.org]
Subject: RE: Action Requested: CWC Quarterly Report 9

Ali: Appreciate the update!

Marcia: I did some minor cleanup but the report is ready for Kevin's review once he's available.

Thanks for your help.

Cheyenne Harris
Brown and Caldwell | Sacramento, CA
CHarris@brwncald.com
T 916.853.5349
Pronouns: she/her/hers



From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, October 27, 2020 9:35 AM
To: Marcia Kivett <MKivett@sitesproject.org>; Cheyanne Harris <CHarris@BrwnCald.com>
Subject: FW: Action Requested: CWC Quarterly Report 9

Hi Marica and Cheyanne – We are done with updates to the quarterly report.

Ali

Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project | 916.880.0676 |
aforsythe@sitesproject.org | www.SitesProject.org

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From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Monday, October 26, 2020 4:01 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <erin.heydinger@hdrinc.com>
Subject: RE: Action Requested: CWC Quarterly Report 9

Added coordination with USACE and SWRCB.

John Spranza

D 916.679.8858 M 818.640.2487

From: Laurie Warner Herson [mailto:laurie.warner.herson@phenixenv.com]
Sent: Monday, October 26, 2020 3:08 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Spranza, John <John.Spranza@hdrinc.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
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CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

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aforsythe@sitesproject.org | www.SitesProject.org

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If you have any clarification questions, please let me know.

Thank you in advance for your help.

Cheyenne Harris

Brown and Caldwell | Sacramento, CA

CHarris@brwn Caldwell.com

T 916.853.5349

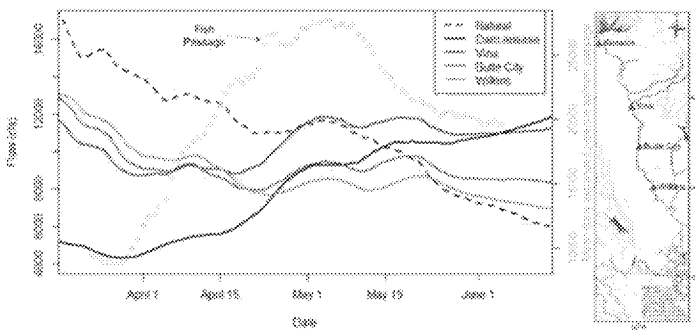
Pronouns: she/her/hers



From: Chris Fitzer [CFitzer@esassoc.com]
Sent: 10/27/2020 12:48:31 PM
To: Hassrick, Jason [Jason.Hassrick@icf.com]; John Spranza [John.Spranza@hdrinc.com]; Hendrick, Mike [Mike.Hendrick@icf.com]; Marin.Greenwood [Marin.Greenwood@icf.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Briard, Monique [Monique.Briard@icf.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Lecky, Jim [Jim.Lecky@icf.com]; Wilder, Rick [Rick.Wilder@icf.com]
CC: Heydinger, Erin [erin.heydinger@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: NGO concerns and citations
Attachments: 20200630_Flow_threshold_paper_ecosphere.pdf

Following-up on our discussion from this morning, re-sending the Michel et al. draft manuscript...

Note there was one release of tagged winter-run included in the analysis (see Table 1; March 26 release date). Also of note, below is one of the figures included in the draft manuscript (and presentation) showing hydrographs and fish passage (representing data from RB screw traps); focused on the March/April to June spring period.



Another discussion point worth noting:

Our study focused on the flow-survival relationship for the smolt outmigration life-history, as it was based on acoustically tagged fish, and tag size constraints precluding the tagging of smaller juveniles. However, other juvenile life-history types, namely fry and parr (approximately <55mm, and 55 to 75mm FL, respectively), are important contributors to CCV Chinook salmon populations (Sturrock et al., 2019). While higher winter and spring flows are beneficial for smolt outmigration and are likely not directly comparable with fry and parr habitats which used flow regimes for rearing. In general, targeting ecologically functional flows that mimic the shape of the historic hydrograph under which these fish evolved should also benefit these other life histories and promote life history diversity.

A couple thoughts on how these findings/observations could inform revised diversion criteria...

Early season (through Mar/April) diversion criteria to protect rearing habitat suitability in the RB to Colusa reach (focused on side channel activation flows) for fry and parr, followed by diversion criteria focused on flow-survival thresholds (~10k cfs) during the April through June period for smolt outmigration. The scaled diversions, in theory, work to protect the shape of the hydrograph and may minimize step-change diversion effects on rearing habitat, which could reduce more abrupt activation/deactivation of side channels associated with more binary diversions (all on, all off). Protection of pulse flows could still be employed for the full season.

Thoughts?

Chris Fitzer

Fisheries Program Manager

Working from Home - Reachable via email or text/ph 916.806.7834

ESA | Environmental Science Associates
Celebrating 50 Years of Work that Matters!

From: Chris Fitzer

Sent: Monday, September 21, 2020 9:58 AM

To: Hassrick, Jason <Jason.Hassrick@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Marin.Greenwood <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: NGO concerns and citations

Thanks, Jason.

Attached is the draft manuscript from Michel et al that we briefly discussed last week. The paper describes flow-survival in the Sac River as being a non-linear, step function, with application to functional flows framework.

Chris Fitzer

Fisheries Program Manager

Working from Home - Reachable via email or text/ph 916.806.7834

ESA | Environmental Science Associates
Celebrating 50 Years of Work that Matters!

From: Hassrick, Jason <Jason.Hassrick@icf.com>

Sent: Monday, September 21, 2020 9:32 AM

To: John Spranza <John.Spranza@hdrinc.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Chris Fitzer <CFitzer@esassoc.com>; Marin.Greenwood <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: NGO concerns and citations

Hi all,

Attached are the papers cited below.

JASON HASSRICK | ICF | 530.312.3275

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Monday, September 21, 2020 9:01 AM

To: Hassrick, Jason <Jason.Hassrick@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Chris Fitzer <cfitzer@esassoc.com>; Greenwood, Marin <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: NGO concerns and citations

Morning,

We revived an email from the NRDC last week that had concerns with the latest project description that was approved in the Board meeting last week. A few of the key items of concern and the citations they provided to support their

assertions are listed below. Nothing really new here except a few recent citations, but I wanted to keep the team in the loop. If you would like to discuss this, let's do so on a call.

1. "The CEQA document will only consider 2 alternatives, with identical operational parameters for those alternatives (meaning that there are no operational alternatives being considered)."
2. "The proposed operations being considered would significantly harm juvenile salmon migrating down the Sacramento River in the winter and spring months, as the best available science demonstrates a very strong flow: survival relationship for juvenile fall-run, spring-run, and winter-run Chinook salmon in the upper, middle, and lower Sacramento River and in the Delta (see citations below), and it would harm Longfin Smelt and other species downstream as a result of reducing Delta outflow during these months."

Citations:

- Stuart Munch et al 2020. *Science for integrative management of a diadromous fish stock: interdependencies of fisheries, flow and habitat restoration*, Can. J. Fish. Aquat. Sci. 77: 1487–1504 (2020) [dx.doi.org/10.1139/cjfas-2020-0075](https://doi.org/10.1139/cjfas-2020-0075);
- Michel, Cyril 2019. *Decoupling outmigration from marine survival indicates outsized influence of streamflow on cohort success for California's Chinook salmon populations*, Can. J. Fish. Aquat. Sci. 76: 1398–1410 (2019) [dx.doi.org/10.1139/cjfas-2018-0140](https://doi.org/10.1139/cjfas-2018-0140);
- Friedman, W. R. et al. 2019. *Modeling composite effects of marine and freshwater processes on migratory species*. Ecosphere 10(7):e02743. [10.1002/ecs2.2743](https://doi.org/10.1002/ecs2.2743);
- Mark Henderson et al, 2018. *Estimating spatial-temporal differences in Chinook salmon outmigration survival with habitat and predation related covariates*. Can. J. Fish. Aquat. Sci. 76(9): 1549-1561, <https://doi.org/10.1139/cjfas-2018-0212>;
- Notch, Jeremy et al 2020. *Outmigration survival of wild Chinook salmon smolts through the Sacramento River during historic drought and high water conditions*. Environ Biol Fish, <https://doi.org/10.1007/s10641-020-00952-1>
- Russell Perry et al 2018. *Flow-mediated effects on travel time, routing, and survival of juvenile Chinook salmon in a spatially complex, tidally forced river delta*. Can. J. Fish. Aquat. Sci. 75(11): 1886-1901, <https://doi.org/10.1139/cjfas-2017-0310>.

John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2457
john.spranza@hdrinc.com

[hdrinc.com/follow-us](https://www.hdrinc.com/follow-us)
[hdrinc.com/follow-us](https://www.hdrinc.com/follow-us)

From: Lecky, Jim [Jim.Lecky@icf.com]
Sent: 10/27/2020 2:02:16 PM
To: Chris Fitzer [cfitzer@esassoc.com]; Hassrick, Jason [Jason.Hassrick@icf.com]; John Spranza [John.Spranza@hdrinc.com]; Hendrick, Mike [Mike.Hendrick@icf.com]; Greenwood, Marin [Marin.Greenwood@icf.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Briard, Monique [Monique.Briard@icf.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Wilder, Rick [Rick.Wilder@icf.com]
CC: Heydinger, Erin [erin.heydinger@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: NGO concerns and citations
Attachments: Poytress spreadsheet..xlsx

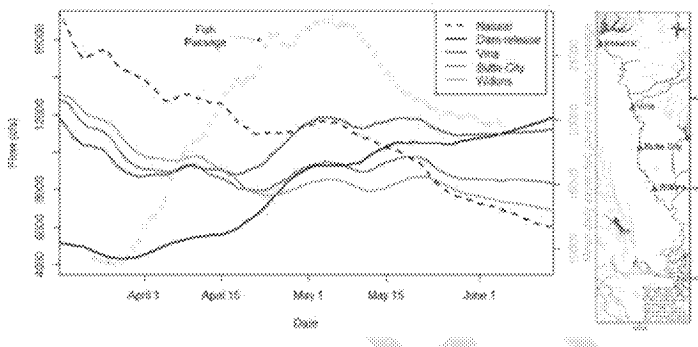
Just to add to the confusion. Here is a summary spread sheet of info from Poytress et al. 2014. The take away is most fish passing Red Bluff Diversion Dam and fry sized fish and movement of juvenile fish of one species or another is evident in almost any month. Fall run hatchery releases tend to occur in April and May, but the wild stocks would likely benefit for flows in the late fall and winter months as well.

I think something like Chris suggest below is worth considering but would back up the start date to December through April to reflect De Rosaio et al. (2013) observation of smolt sized winter-run passing Knights landing from December to April.

From: Chris Fitzer <CFitzer@esassoc.com>
Sent: Tuesday, October 27, 2020 12:49 PM
To: Hassrick, Jason <Jason.Hassrick@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Greenwood, Marin <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>; Wilder, Rick <Rick.Wilder@icf.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: NGO concerns and citations

Following-up on our discussion from this morning, re-sending the Michel et al. draft manuscript...

Note there was one release of tagged winter-run included in the analysis (see Table 1; March 26 release date). Also of note, below is one of the figures included in the draft manuscript (and presentation) showing hydrographs and fish passage (representing data from RB screw traps); focused on the March/April to June spring period.



Another discussion point worth noting:

Our study focused on the flow-survival relationship for the smolt outmigration life-history, as it was based on acoustically tagged fish, and tag size constraints precluding the tagging of smaller juveniles. However, other juvenile life-history types, namely fry and parr (approximately <55mm, and 55 to 75mm FL, respectively), are important contributors to CCV Chinook salmon populations (Sturrock et al., 2019). While higher winter and spring flows at benefit fry and parr life histories, the resulting flow regime may also benefit parr life histories. In general, targeting ecologically functional flows that mimic the shape of the historic hydrograph under which these fish evolved should also benefit these other life histories and promote life history diversity.

A couple thoughts on how these findings/observations could inform revised diversion criteria...

Early season (through Mar/April) diversion criteria to protect rearing habitat suitability in the RB to Colusa reach (focused on side channel activation flows) for fry and parr, followed by diversion criteria focused on flow-survival thresholds (~10k cfs) during the April through June period for smolt outmigration. The scaled diversions, in theory, work to protect the shape of the hydrograph and may minimize step-change diversion effects on rearing habitat, which could reduce more abrupt activation/deactivation of side channels associated with more binary diversions (all on, all off). Protection of pulse flows could still be employed for the full season.

Thoughts?

Chris Fitzer

Fisheries Program Manager

Working from Home - Reachable via email or text/ph 916.806.7834

ESA | Environmental Science Associates
Celebrating 50 Years of Work that Matters!

From: Chris Fitzer

Sent: Monday, September 21, 2020 9:58 AM

To: Hassrick, Jason <Jason.Hassrick@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Marin.Greenwood <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: NGO concerns and citations

Thanks, Jason.

Attached is the draft manuscript from Michel et al that we briefly discussed last week. The paper describes flow-survival in the Sac River as being a non-linear, step function, with application to functional flows framework.

Chris Fitzer

Fisheries Program Manager

Working from Home - Reachable via email or text/ph 916.806.7834

ESA | Environmental Science Associates
Celebrating 50 Years of Work that Matters!

From: Hassrick, Jason <Jason.Hassrick@icf.com>

Sent: Monday, September 21, 2020 9:32 AM

To: John Spranza <John.Spranza@hdrinc.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Chris Fitzer <CFitzer@esassoc.com>; Marin.Greenwood <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: NGO concerns and citations

Hi all,

Attached are the papers cited below.

JASON HASSRICK | ICF | 530.312.3275

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Monday, September 21, 2020 9:01 AM

To: Hassrick, Jason <Jason.Hassrick@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Chris Fitzer <cfitzer@esassoc.com>; Greenwood, Marin <Marin.Greenwood@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Briard, Monique <Monique.Briard@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Lecky, Jim <Jim.Lecky@icf.com>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

Subject: NGO concerns and citations

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- Michel, Cyril 2019. *Decoupling outmigration from marine survival indicates outsized influence of streamflow on cohort success for California's Chinook salmon populations*, Can. J. Fish. Aquat. Sci. 76: 1398–1410 (2019) [dx.doi.org/10.1139/cjfas-2018-0140](https://doi.org/10.1139/cjfas-2018-0140);
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John

John Spranza, MS, CCN
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HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
hdrinc.com/follow-us

File Provided Natively

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 10/27/2020 2:09:01 PM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: NGO Outreach - Need contact info

Hi Marcia,

Ali suggested I contact you to see if you have current contact info for NGOs, specifically those that she and Jerry have met with recently. I have a list of NGOs that commented on the 2017 Draft EIR/EIS (see below) and we are going to try to set up a meeting to provide an update on the project and the CEQA/NEPA process.

1. AquAlliance
2. Bay Institute
3. Butte Environmental Council
4. California Indian Water Commission
5. California Native Plant Society, Sacramento Valley Chapter
6. California Sportfishing Protection Alliance
7. California Water Impact Network
8. California Wilderness Coalition
9. Center for Biological Diversity
10. Chico 350
11. Coast Action Group
12. Conservation Fly Fishers International Northern California Council
13. Defenders of Wildlife
14. Environmental Justice Coalition for Water
15. Environmental Water Caucus
16. Fly Fishers of Davis
17. Fly Fishers International
18. Freedom Earth Democracy
19. Friends of the River
20. Golden Gate Salmon Association
21. Institute for Fisheries Resources
22. Klamath Riverkeeper
23. Natural Resources Defense Council
24. The North Coast Environmental Center
25. Northern California Watershed Alliance
26. Pacific Coast Federation of Fishermen's Associations
27. Planning and Conservation League
28. Protect American River Canyons
29. Sacramento River Council
30. Sacramento River Preservation Trust
31. Safe Alternatives for our Forest Environment
32. San Francisco Baykeeper
33. Save the American River Association
34. Save California Salmon
35. Save the Klamath-Trinity Salmon
36. Sierra Club
37. Southern California Watershed Alliance
38. Water Climate Trust
39. Women's International League for Peace

I can get someone to look through the 2017 letters for contact info but was hoping you may have some of these already.

Thanks,

Laurie

Laurie Warner Herson
Principal/Owner


Phenix
Environmental Planning

916.201.3935

laurie.warner.herson@phenixenv.com

State of California Small Business (#1796182)

Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Kevin Spesert [kspesert@sitesproject.org]
Sent: 10/28/2020 10:14:15 AM
To: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]
Subject: RE: Need some direction

I agree with setting up a meeting with both Colusa and Glenn Counties on the traffic issues...please reach out to Mike A and set up a meeting...he will probably coordinate with Glenn County to make sure they participate

I agree that if Sites is not built that the intertie could be built...however it would be a much smaller project (it is currently sized to accommodate Sites) and would be a regional Sac Valley project (I would not anticipate there would be any SoD participation). Because the facility would be smaller in size and operation....the potential impacts and mitigation would be much different than the current version of the Intertie.

Thanks!

Kevin

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, October 28, 2020 9:25 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>
Cc: Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: Need some direction

Good morning,

I had a call with ICF (Nicole) yesterday to discuss some specific resources and the approach to the EIR analysis:

1. Traffic/Transportation Methodology– We had a discussion about the methodology for the traffic impacts analysis. CEQA now requires that you look at vehicle miles travelled (VMT) but the 2017 EIR/EIS included an analysis of level-of-service (LOS) impacts. Some of the new CEQA guidance is geared more to development vs. large construction projects so they are considering a blended approach. I suggested that we talk to Colusa County (and maybe Glenn) to give the County the opportunity to weigh in on the approach. **I want to confirm that you are okay with meeting with the County and if I should contact Mike Azevedo directly. I prefer that we get input now to avoid comments later.**
2. Assumptions for Recreation – According to the 2017 EIR/EIS: "It is estimated that approximately 200,000 recreational visitors per year would visit the Sites Reservoir and its recreation areas for all or part of 1 day, once the facilities are operational. There would no overlap between the project construction trips and the anticipated increase in recreation visitors. The number of visitors per day would fluctuate, resulting in varying levels traffic during the recreational season; however, it is anticipated that 70 percent of recreationists would visit during the primary recreation season, May 1 through September 20, and 70 percent of those visitors would visit during weekends and holidays. It is assumed that those estimated 98,000 recreationists would visit the Primary Study Area facilities, with an average of 2.6 persons per vehicle. This would result in an increase of 37,693 total trips, or approximately 820 trips per day, during weekends and holidays in the primary recreation season." **I have asked ICF to check with CH to see how these assumptions were developed for the 2017 Draft EIR/EIS but would like confirmation that you are ok with us defaulting to the same projections in the Revised Draft EIR/SDEIS.**
3. No Project – In our discussions about the Intertie Project, we have discussed that if the Sites Reservoir Project is not built, the Intertie would be. If this is the case, ICF has made the assumption that it will be constructed under the No Project/No Action Alternative. They are therefore assuming implementation of the Intertie Project and the mitigation

that was identified in the prior EA under the No Project/No Action Alternative. **I think this is appropriate from a CEQA standpoint but I want to confirm that this is the correct approach from the Authority's standpoint.**

I am happy to get on a call with you if needed.

Thank you –

Laurie

Laurie Warner Herson
Principal/Owner

The logo for Phenix Environmental Planning, featuring the word "Phenix" in a bold, sans-serif font with a stylized bird or wing graphic above the letter 'i'.

Environmental Planning

916.201.3935

laurie.warner.herson@phenixenv.com

State of California Small Business (#1796182)

Supplier Clearinghouse Women Business Enterprise (#16000323)

<http://phenixenv.com/>

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/29/2020 8:08:58 AM
To: Boyd, Ian@Wildlife [Ian.Boyd@Wildlife.ca.gov]; Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; Torres, Juan@Wildlife [Juan.Torres@wildlife.ca.gov]; Jim Lecky (jim.Lecky@icf.com) [jim.Lecky@icf.com]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; andrew.huneycutt@wildlife.ca.gov
Subject: RE: Sites Project 5937 Discussion
Attachments: Tech Memo__5937 Funks and Stone Corral Creek_20201022.pdf; 2020_1105_CDFW_CFGCode5937_jlh.pdf

Morning,

Please see the attached agenda for our meeting. I have also included the ICF Technical Memorandum that I sent out in a previous email.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----

From: Spranza, John

Sent: Thursday, October 15, 2020 11:54 AM

To: Spranza, John; Boyd, Ian@Wildlife; Davis-Fadtke, Kristal@Wildlife; Hassrick, Jason (Jason.Hassrick@icf.com); Torres, Juan@Wildlife; Jim Lecky (jim.Lecky@icf.com); Hendrick, Mike (Mike.Hendrick@icf.com); Monique Briard (monique.briard@icf.com); aforsythe (aforsythe@sitesproject.org); andrew.huneycutt@wildlife.ca.gov

Subject: Sites Project 5937 Discussion

When: Thursday, November 5, 2020 10:00 AM-11:30 AM (UTC-08:00) Pacific Time (US & Canada).

Where: Webex

Discussion of Sites Reservoir 5937 requirements and developing approach for affected streams.

I will send an agenda and an informational packet prior to the meeting.

-- Do not delete or change any of the following text. --

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code): 146
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To:	Sites Authority
From:	ICF
Date:	October 21, 2020
Re:	WORKING DRAFT – For Internal Review – Predecisional: California Fish and Game Code 5937 and Funks and Stone Corral Creeks

Key Points

1. The purpose of this memorandum is to recommend to the Sites Authority and its engineering team release parameters for flows into Stone Corral and Funks creeks for design purposes that would likely comply with California Fish and Game Code section 5937¹. Our recommendation is to evaluate the technological and economic feasibility of a scenario that preserves 80 percent of the historical hydrograph for these streams based on a US Geological Survey (USGS) stream gage data for Stone Corral Creek that operated from 1958 to 1985 and to include design elements into the project that would allow the release of that flow as seasonally appropriate.
2. Sites Dam and Golden Gate Dam will be impassable barriers, designed to store diversions from the Sacramento River and retain flows from Stone Corral and Funks creeks. The alternatives in the 2017 Draft Environmental Impact Report/Statement (Draft EIR/EIS) proposed “releasing stream maintenance flows of up to 10 cubic feet per second (cfs) from October through May into Stone Corral and Funks creeks after construction is completed to mimic the ephemeral² nature of these streams.”
3. In their comments on the Sites Reservoir Project DEIR/EIS, the California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board (SWRCB) questioned the basis for and adequacy of a 10 cfs base flow for maintaining fish below Sites Dam and Golden Gate Dam in good condition.

¹ California Fish and Game Code requires the owner of any dam to allow sufficient water to pass over, around, or through the dam to keep any fish that may exist below the dam in good condition

² These streams are referred to as ephemeral in the Draft EIR/EIS. However, based on the hydrological record for Stone Corral Creek they flow persistently during the winter-months in most years and should be considered intermittent.

4. Based on CDFW surveys conducted in these streams in 1998 and 1999, there is a community of 10 warm water species of fish in Stone Corral and Funks creeks, which may persist after construction. None are listed as threatened or endangered, or are considered species of special concern, but they are subject to the requirements of California Fish and Game Code section 5937. This list of fishes, recommended flow scenarios, and an adaptive management approach for maintaining fish in good condition should be confirmed with CDFW *before* it is incorporated in the revised project description for the Sites Reservoir Project.

Background

The two major dams of the Sites Reservoir Project, Sites Dam and Golden Gate Dam, will impound Stone Corral and Funks creeks. The project description in the Draft EIR/EIS (USBR and Sites Project Authority, 2017) includes a provision to release stream maintenance flows of up to 10 cfs from October through May into Stone Corral and Funks creeks after construction is completed to mimic the ephemeral nature of those streams. In their comments on the Draft EIR/EIS, CDFW and the SWRCB questioned the rationale for and adequacy of that provision.

CDFW commented that maintaining flows of up to 10 cfs from October through May, as proposed in the Draft EIR/EIS, will not sufficiently mimic the variability of the current hydrograph for Stone Corral and Funks creeks and will not provide the same amount of aquatic habitat to maintain fish in good condition. CDFW also suggested base flows outside of the “October through May” period below the reservoirs may need to have a perennial regime to support fishes downstream of the dams, and that the impacts of the dams on fluvial geomorphology and riparian habitat in the streams affected by the project should be addressed.

Similarly, the SWRCB questioned the rationale for a 10 cfs base flow and pointed out inconsistencies in the description of how releases to Stone Corral and Funks creeks would be managed:

- The Draft EIR/EIS states that the base flows would be provided from October to May. Elsewhere, it states that base flows would be provided year-round.
- The Draft EIR/EIS state that the base flows would be limited to 10 cfs, but also states that the dams would be operated to match pre-project flows (other than flood flows), which can be higher than 10 cfs.

The SWRCB also commented that the impacts of dam operations on fluvial geomorphological process below the dams should be analyzed.

Environmental Setting for Stone Corral and Funks Creeks

Both Stone Corral and Funks creeks are small watersheds originating in the eastside foothills of the California Coast Range at elevations of 700 to 850 feet and flow intermittently, mostly in winter and early spring months. From their origins, both creeks flow through low foothills, across Antelope Valley (the site of the Proposed Sites Reservoir), through a series of ridges, and onto the Sacramento Valley floor (Figure 1). For much of their course on the valley floor, they are confined to narrow channels between berms along agricultural fields and road prisms³. While the stream channels of these creeks are not actively managed, their straight channels and angular turns around some agricultural fields and along some roads indicate that they were modified from their natural channels at some point in the past. In the upper parts of the watersheds just below the dam locations, these streams are largely devoid of riparian cover due to cattle grazing activity (USBR and DWR 2008). In the lower reaches where the streams run through and around agricultural fields, riparian habitat is sparse and consists mostly of low shrubs, grasses, and occasional oak and cottonwood trees.

Stone Corral Creek

Stone Corral Creek has a drainage area of 32.8 square miles. From the proposed location of the Sites Dam, Stone Corral Creek meanders through a shallow canyon onto the valley floor, where it flows through an incised channel across grazing lands. At 4.6 miles from the Sites Dam location, Stone Corral Creek crosses over a siphon in the Tehama-Colusa Canal Authority (TCCA) canal and begins to travel through agricultural lands. About 3 miles below the TCCA canal siphon, Stone Corral Creek crosses the Glenn-Colusa Irrigation District (GCID) canal siphon. Although most of the water in the canal passes under Stone Corral Creek in the siphon, GCID releases water from the canal to Stone Corral Creek for delivery to agricultural fields downstream. About 5.5 miles below GCID, Stone Corral Creek merges with Funks Creek and then flows an additional 5.7 miles to the Colusa Basin Drain (CBD).

Funks Creek

Funks Creek, a tributary to Stone Corral Creek, has a drainage area of 43 square miles. From the proposed location of Golden Gate Dam, Funks Creek meanders through a series of low ridges and grazing lands for about 1.8 miles to Funks Reservoir. Funks Reservoir is a re-regulating reservoir on the TCCA canal and is created by a low dam on Funks Creek. Funks Dam is operated by TCCA mostly for flood control purposes. The Funks Dam gates are opened during large storm events to pass flood waters through the reservoir and downstream to avoid compromising the TCCA canal and its operations. There are no requirements to maintain flows in Funks Creek below Funks Reservoir, but seepage through the dam gates allow a few cfs, which maintains flow in Funks Creek.

Below Funks Dam, Funks Creek travels 3.9 miles through agricultural fields in a combination of natural and straightened channels to where it crosses the GCID canal. While the GCID canal passes

³ Characterization of stream channels is based on desktop review of streams using Google Earth.

under Funks Creek in a siphon, GCID releases water from the canal to Funks Creek, and like Stone Corral Creek, GCID uses the downstream portions of Funks Creek as part of its conveyance system to deliver water to agricultural fields. Approximately 2 miles northeast of Maxwell and 1 mile east of Interstate 5, Funks Creek flows into Stone Corral Creek.

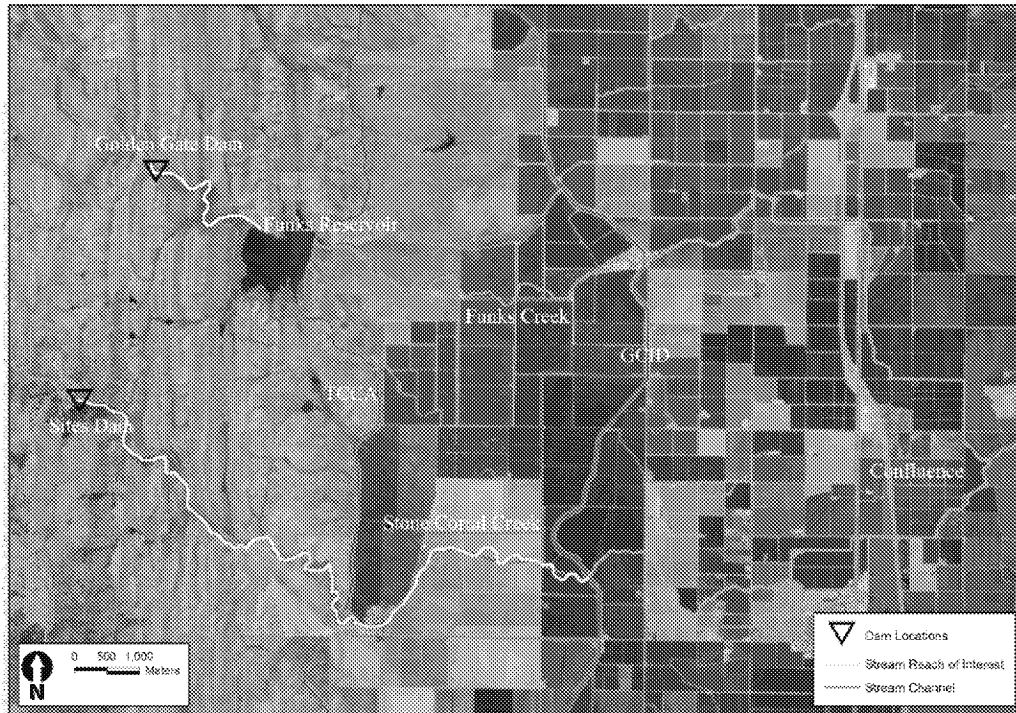


Figure 1. Stone Corral and Funks Creeks

Water Quality

Stone Corral Creek is listed under section 303(d) as an impaired water body for low dissolved oxygen levels (SWRCB 2017). The creek was originally listed in 2010 and is scheduled to have a Total Maximum Daily Load plan by 2027. This designation is based on samples collected at a sampling site located where Stone Corral Creek crosses 4-mile Road. This location is downstream of the confluence between Funks and Stone Corral creeks, at the western edge of the Delevan National Wildlife Refuge. The source of the oxygen depletion is listed as unknown (SWRCB 2017) but, given the amount of algae visible in Google Earth photos, nutrient loading from the cattle grazing lands and agricultural fields is a likely source in both watersheds. During fish surveys in 1998 and 1999, CDFW noted that water quality was poor and high in dissolved minerals. They reported that the total dissolved solids in the water were so high that it precluded electrofishing as a means of sampling (CDFG 2003).

SWRCB (2017) did not report on water quality in Funks Creek but given similar size, geology, and land use between the two watersheds, the water quality in Funks Creek is likely comparable to Stone Corral Creek.

Hydrology

Both streams originate at low elevations below the snow line of the Coast Range and consequently do not receive cold snowmelt water. Rather, they respond rapidly to significant rainfall events and flash flooding and substantial overland flow has been observed (USBR and DWR 2013).

The USGS collected 25 years of discharge measurements in Stone Corral Creek near the town of Sites from 1958 through 1985. During that time, there were 3 years of zero flow: 1972, 1976, and 1977. Yates (1989) estimated the recurrence interval of a winter without flow at 12 to 14 years. The maximum mean daily flow of 2,230 cfs occurred on December 24, 1983. The instantaneous peak flow was 5,700 cfs on January 26, 1983. The 100-year discharge was established in a 1987 Colusa Basin flood flow frequency analysis as 7,870 cfs (DWR 1987, cited in USBR and DWR 2008).

There is no comparable data set for Funks Creek. However, given the comparable size, geology, and topography of the two watersheds and their proximity to each other upstream of their confluence, Stone Corral Creek hydrology is likely representative of Funks Creek hydrology in terms of amount and seasonality of flow. The daily mean hydrology for Stone Corral Creek was presented in the Draft EIR/EIS and is included in Table 1. It shows the variability of flow over the period of record differs considerably from a static flow of 10 cfs.

Table 1. Stone Corral Creek Daily and Monthly Flows Near Sites, USGS 11390672

Period of Record 4/1/1958 – 9/30/1964 and 10/1/1965 – 9/30/1985
 Drainage Area = 38.2 Square Miles

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Daily Flows (cfs) for Period of Record												
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	74	2,230	1,910	2,150	1,980	619	45	9	1	0	0
Avg	0	1	11	32	39	21	8	1	0	0	0	0
Monthly Flows (AF) for Period of Record												
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	427	11,432	8,825	11,137	15,227	4,451	740	146	19	0	0
Avg	0	37	660	1,946	2,190	1,300	484	83	13	1	0	0

Source: Sites Authority and USBR 2017.

Fishery Resources

As part of the CALFED North of Delta Offstream Storage Investigations, CDFW conducted fish surveys in the Sites Reservoir inundation area in 1998 and 1999 (CDFG 2003). Ten species of fishes were caught in the Sites and Colusa study areas; six were native and four were introduced, of which, three are considered game fish (Table 2). Sacramento hitch (hitch) was the most common species

sampled during these studies. Hitch were found in all the creeks in the Sites and Colusa study area. Hitch were also present in the greatest numbers. Stone Corral Creek had the greatest diversity of fish throughout the year in the Sites and Colusa study areas. However, fish densities were lower in Stone Corral Creek, particularly for hitch, than in other creeks. Funks Creek was the next most diverse creek with five species of fish. These surveys also documented all these species downstream in the CBD, so they are likely present throughout these watersheds.

Table 2. Fishes Caught in the Sites Study Area in 1998 and 1999

Common Name	Scientific Name	Stream	Native (N) or Introduced (I)
California roach	<i>Hesperoleucus symmetricus</i>	Stone Corral	N
Sacramento hitch	<i>Lavinia exilicauda</i>	Funks, Stone Corral	N
Sacramento blackfish	<i>Orthodon microlepidotus</i>	Stone Corral	N
Sacramento pikeminnow	<i>Ptychocheilus grandis</i>	Funks, Stone Corral	N
Sacramento sucker	<i>Catostomus occidentalis</i>	Funks, Stone Corral	N
Sculpin	<i>Cottus sp.</i>	Funks	N
Bluegill*	<i>Lepomis macrochirus</i>	Stone Corral	I
Green sunfish*	<i>Lepomis cyanellus</i>	Stone Corral	I
Largemouth bass*	<i>Micropterus salmoides</i>	Funks	I
Mosquitofish	<i>Gambusia affinis</i>	Stone Coral	I

* game fish

Below is a summary of the life history and habitat preferences for each of these species. These summaries are taken from “California Fish Website” maintained by University at California Davis⁴. Table 3 presents a summary of temperature tolerances, spawning seasons, and spawning substrates used by each species. This information demonstrates that this is a complex of warm water species that spawn in the spring and summer months over a diversity of substrates.

California Roach are a small fish usually less than 100 mm long. They can adapt to varying habitats from coastal streams to mountain foothill streams. They are predominately found in small warm streams but can thrive in larger colder streams with diverse conditions. They may occupy several different habitat types within a single drainage. Extreme tolerance includes temperatures ranging from 30-35°C and dissolved oxygen levels as low as 1-2 ppm. In-stream location may vary depending on geography and predators. California Roach are omnivorous, and diet may depend on stream size and food availability. In smaller rivers Roach feed mostly on filamentous algae, supplementing their diet with crustaceans and insects. Generally, California roach reach sexual maturity at age 2-3 and rarely live beyond three years total. Spawning occurs in March through early July, and timing is temperature dependent. California Roach breed in gravel beds or riffles where

⁴ <http://calfish.ucdavis.edu/species/>

groups of females lay eggs on and into the substrate. Eggs hatch in 2-3 days after spawning. Larvae remain in the protection of the gravel substrate before emerging to swim.

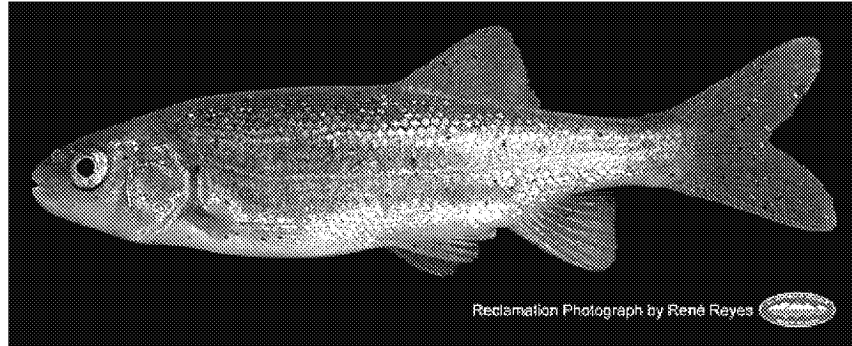


Figure 2. California Roach, *Hesperoleucus symmetricus* (Source R. Reyes, US Bureau of Reclamation).

Hitch grow to about 35 cm in length. Hitch are most often found in slow warm water, including lakes and quiet stretches of rivers. They are the most heat tolerant of the native Central Valley fishes and can withstand water temperatures greater than 30°C under some conditions. They have also been found living in brackish water with salinities as high as 9 ppt. Generally, females reach sexual maturity in 2-3 years, while males may reach sexual maturity in years 1-3. Spawning may begin as early as February and end as late as July. Females release their eggs into the current and the males immediately fertilize the eggs. The eggs then settle into the gravel substrate where the size of the ova will increase and help lodge it into the rock particles. In 3-7 days, the embryos hatch, and 3-4 days after the hatch the embryos begin to swim freely. The young Hitch may swim downstream to a lake or slough or reside within the stream under the cover of aquatic plants. Hitch generally live for a total of 4-6 years.



Figure 3. Hitch, *Lavinia exilicauda* (Source R. Reyes, US Bureau of Reclamation).

Sacramento Blackfish grow up to 50 cm in length. They are native to the Sacramento and San Joaquin drainages as well as to Clear Lake. Sacramento Blackfish prefer warm turbid waters in small to large streams, and often share habitat with an array of non-natives. Sacramento Blackfish prefer

water temperatures in the range of 22-28°C. They have shown a great ability to adapt to extreme environments including water temperatures exceeding 30°C and salinities in excess of 9 ppt. Blackfish are typically suspension feeders with a diet of planktonic algae and zooplankton, including copepods, insect larvae, rotifers, cladocerans, and detritus. Sacramento Blackfish may become sexually mature from ages 1 to 4 years, depending upon their growth rate. Spawning generally occurs in spring but may happen anytime between March and July when water temperatures are in the range of 12-24°C. Spawning beds are usually found in areas of thick vegetation and shallow water. The eggs will cling to the local substrate till the larvae emerge and begin foraging in the same region.



Figure 4. Sacramento Blackfish, *Orthodon microlepidotus* (Source R. Reyes, US Bureau of Reclamation).

Sacramento Pikeminnow are a larger fish growing to 115 cm in length. They are typically found in clear low to mid-elevation streams and rivers. Pikeminnows favor streams with deep pools and slow runs that have cover in the form of undercut banks or aquatic vegetation. They are found where water temperatures are usually in the range of 18-28°C, although they are capable of withstanding extremes up to 38°C and salinities as high as 8 ppt. Juveniles may feed on aquatic insects and change the focus of their diet to crustaceans and fish as they grow bigger. Large adults are voracious opportunistic predators. Pikeminnow become sexually mature at age 3-4 and begin spawning in April – May. Ideal spawning grounds are riffles and pool tails with gravel substrate. Pikeminnow may live up to 16 years.

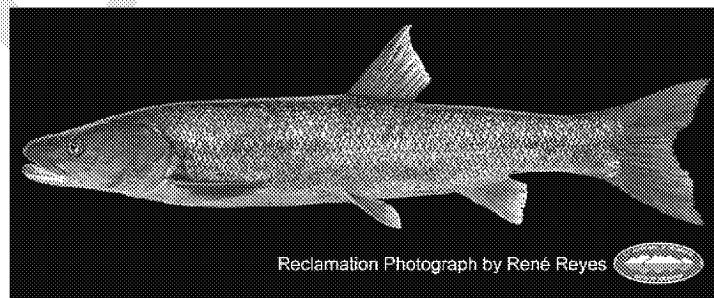


Figure 5. Sacramento Pikeminnow, *Ptychocheilus grandis* (Source R. Reyes, US Bureau of Reclamation).

Sacramento Suckers grow up to 56 cm in length. They live and forage in warm protected streams and forage on algae, invertebrates, and detritus. Young fish may stay in this warm water for several years before moving into lakes or larger rivers. Adult fish typically rest or hold in the deeper water during the day and feed during the first and last hours of the day. The larger fish may occupy pools, runs, or riffles in area where vegetation or rocks provide cover from birds and other predators. At age 4-6 Sacramento Suckers become sexually mature and begin a spawning ritual that may involve a migration to a warmer and smaller stream. Spawning is triggered by the onset of warmer water temperatures and usually occurs between February and June. Suckers spawn in groups, sending fertilized eggs down into the substrate and out into the current. The eggs settle in gravel and slackwater areas, hatching after 2-4 weeks.

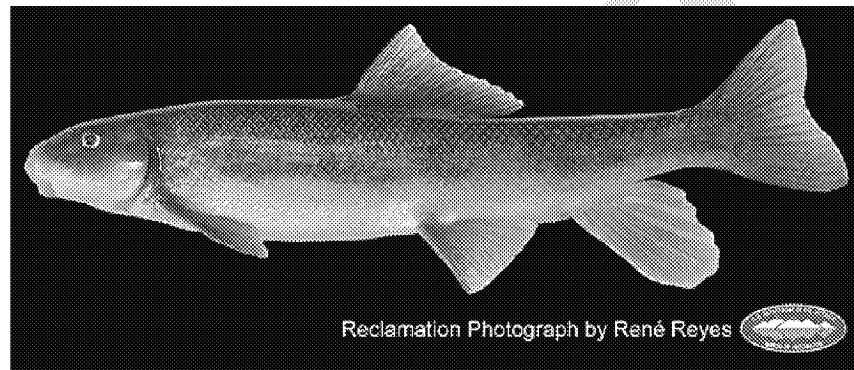


Figure 6. Sacramento Sucker, *Catostomus occidentalis* (Source R. Reyes, US Bureau of Reclamation).

Sculpin sp. (likely prickly sculpin) grow up to 20 cm. Prickly Sculpin are adaptable to environments ranging from fresh to saltwater, and from small cool stream to large warm rivers and lakes. The Prickly Sculpin has a variety of forms as some are coastal, others live in the valley, and some are limited to Clear Lake proper where they are adapted to life in a warm shallow water reaching temperatures of 25-28°C. In the Central Valley of California these fish inhabit low elevation waters. The limitation to the spread of these fish seems to be water quality, as the Prickly Sculpin is not found in highly polluted waters. In streams these fish use a variety of habitats though good cover or overhanging vegetation is a common requirement. Both adults and juveniles consume invertebrates, aquatic insects, and mollusks. Adult sculpins may supplement their diet with small fish and amphibians as well. Prickly Sculpins reach sexual maturity between 2, and 4 years of age. Most spawning occurs between February and June.

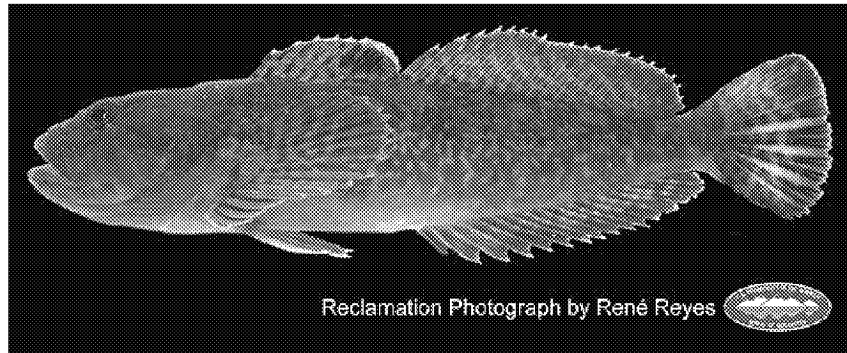


Figure 7. Prickly Sculpin, *Cottus asper* (Source R. Reyes, US Bureau of Reclamation).

Bluegill are most common in warm, shallow lakes, reservoirs, ponds, streams, and sloughs at low elevations. They prefer temperatures between 27°C and 32°C but can live in waters as cold as 2-5°C and as warm as 40-41°C. They are more limited by salinity levels however, occasionally being found in areas of 5 ppt but suffering from arrested development at 8 ppt and die at 12 ppt. They grow best in areas with dissolved oxygen levels between 4 ppm and 8 ppm. Aquatic insect larvae are preferred food but planktonic crustaceans, flying insects, and snails are common food items and small fish, fish eggs, and crayfish can be taken when available. Spawning occurs in summer when temperatures reach 18-21°C and may continue through to September. They construct nest that are 20-30 cm wide and 5-15 cm deep out of the gravel, sand, or mud substrate in shallow water.



Figure 8. Bluegill, *Lepomis macrochirus* (Source R. Reyes, US Bureau of Reclamation).

Green Sunfish may grow to 30 cm. They are most common in small, warm streams with turbid, mud-bottom pools and aquatic vegetation, and are especially prevalent in streams that are intermittent in summer. They can tolerance temperatures greater than 38°C, dissolved oxygen levels

less than 1 ppm. They are opportunistic predators, feeding primarily on invertebrates and small fish. Young of the year feed mainly on zooplankton, small benthic invertebrates, and the larvae of other fish, but, as they grow, the focus of their diet switches towards large aquatic and terrestrial insects, crayfish, and other fish. Green Sunfish mature at the beginning of their third year. Spawning occurs between May and August. Preferred spawning areas are 4-50 cm deep with fine gravel bottoms near overhanging bushes or other cover. Green Sunfish can live to be 10 years old.

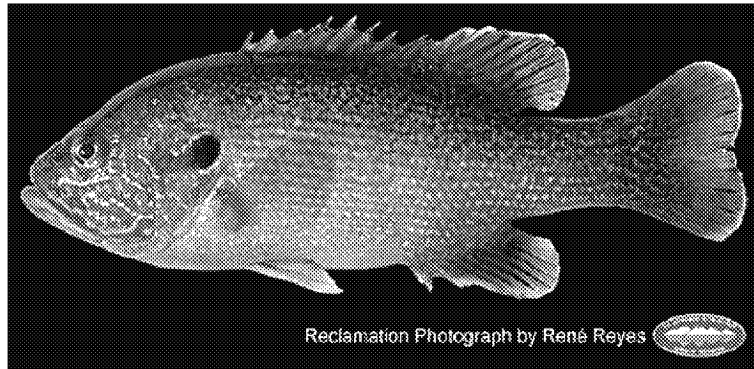


Figure 9. Green sunfish, *Lepomis cyanellus* (Source R. Reyes, US Bureau of Reclamation).

Largemouth Bass may grow to sizes of 76 cm in length. They occur commonly in warm shallow waters with moderate clarity and beds of aquatic plants. Largemouth Bass can survive temperatures up to 36-37°C but 27°C is preferred. They can also survive in water with dissolved oxygen levels as low as 1 ppm but will avoid areas with salinities higher than 3 ppt. In general, fry feed on crustaceans and rotifers before taking on insects and fish fry at 50-60 mm in length. They become primarily piscivorous at 100-125 mm in length. Crayfish, tadpoles, or frogs may also be consumed once a Largemouth Bass has grown large enough to digest them. Spawning starts in March or April when temperatures reach 15-16°C and continues through June in temperatures up to 24°C. Males build nests by brushing out shallow depressions, up to 1 m in diameter, into sand, gravel, or debris-littered bottoms.

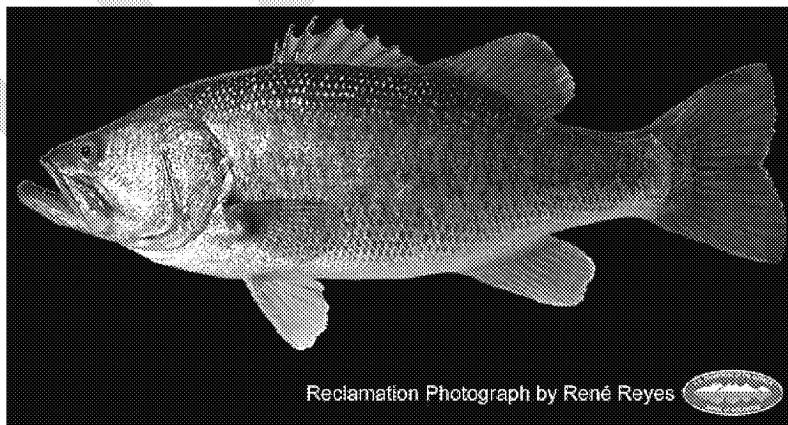


Figure 10. Largemouth bass, *Micropterus salmoides* (Source R. Reyes, US Bureau of Reclamation).

Western Mosquitofish are small fish; females reach lengths of 7 cm while male reach lengths of only 4 cm. They are extremely adaptable and can survive in habitats from brackish sloughs and salt marshes to warm ponds, lakes, and streams. They can tolerate temperatures of 42°C, pH levels of 4.7 to 10.2, and salinities as high as 58 ppt but prefer areas at 25-30°C, 7-9 pH, and salinities under 25 ppt. Due to their unique head shape Western Mosquitofish can push their mouth to the absolute edge of the water’s surface where oxygen is just being dissolved. This allows them to live in bodies of water with extraordinarily low oxygen levels, as low as 0.2 ppm. They are opportunistic diurnal feeders, their diet includes mosquito larvae, algae, zooplankton, terrestrial insects, and various other invertebrates. In California, the breeding season is usually April through September. They are an ovoviviparous species with females giving birth to live young. Most fish breed only once, and few survive longer than 15 months.

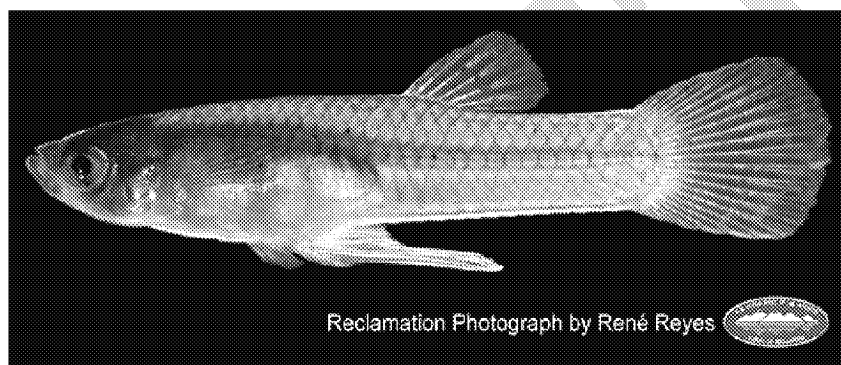


Figure 11. Western mosquitofish (male), *Gambusia affinis* (Source R. Reyes, US Bureau of Reclamation).

Table 3. Temperature, Spawning Seasons, and Substrates for Species in Project Area

Common Name	Temperature preference	Spawning season	Spawning substrate
California roach	30-35°C	Mar - Jul	Gravel
Sacramento hitch	> 30°C	Feb - Jul	Broadcast spawners over gravel
Sacramento blackfish	22-28°C	Feb - Jul	Think vegetation
Sacramento pikeminnow	18-28°C	Apr - May	Riffle and pool tails with gravel
Sacramento sucker	20-25°C	Feb - Jun	Riffles over gravel
Sculpin	25-28°C	Feb - Jun	Sandy area with overhanging vegetation
Bluegill	27-32°C	Jun - Sep	Gravel, sand, or mud
Green sunfish	< 38 °C	May - Aug	Fine gravel near overhanging vegetation
Largemouth bass	27-37 °C	Mar- Jun	Sand, gravel, or debris littered bottom
Mosquitofish	25-32 °C	Apr - Sep	Live bearing near cover

We note that the UC Davis California Fish Website/fish by location for Stone Corral and Funks creeks lists all these species plus several other species (see the attached appendix), including additional warm water species and cold water/anadromous species. We opted to not include these additional species in this memo because the original sources of information for including them on the UC Davis Fish Website were not readily available and some of the listing appear outdated or dubious. For example, some species were included based on historical records (for example, Thicketail Chub, *Gila crassicauda*, are now extinct) and are no longer present. Some are included based on expert opinion rather than documented observations, and some appear to have been included by reference to higher level watersheds (8 digit hydrologic unit code (HUC) instead of a 12 digit HUC)⁵, which include portions of the Sacramento River and sloughs. The warm water species on the UC Davis fish website but described in detail are all tolerant of a wide spectrum of temperatures, salinities, and dissolved oxygen levels and would likely be affected by the Sites Reservoir project just as the species that were documented as present in the CDFW studies.

The anadromous/cold water species in the UC Davis list may have been incorporated by reference to 8-digit HUC that the National Marine Fisheries Service (NMFS) used to identify critical habitat for spring-run Chinook salmon and Steelhead. That 8-digit HUC (the Sacramento-Stone Corral sub-basin) includes the Sacramento River mainstem from the confluence of the Feather River to the confluence with Stone Creek and therefore includes all the anadromous species in the Sacramento River. However, those anadromous/cold water species are unlikely to occur in the smaller 12-digit HUCs of Stone Corral and Funks creeks because the habitat in Stone Corral and Funks creek is unlikely to support anadromous/cold water species.

CDFW investigators did observe one adult Chinook salmon (later confirmed to be a spring-run Chinook Salmon) in Antelope Creek. Antelope Creek is a tributary that flows into Stone Corral Creek in the inundation area of the proposed reservoir. This was likely an out-of-habitat stray that wandered from the Sacramento River through the CBD and Stone Corral Creek to Antelope Creek. Like Stone Corral Creek, Antelope Creek receives no cold snowmelt water, is flashy in nature, frequently dries in summer months, and otherwise is too warm to support cold water species of anadromous fish. Consequently, the CDFW investigators did not include Chinook salmon as a species present in the Stone Corral or Funks creeks in their report (CDFG 2003).

In addition, the only access to Stone Corral and Funks creeks from the Sacramento River is through the CBD. State and federal fish agencies have been working with local water districts to exclude anadromous fish from the CBD (NMFS 2014). Salmon and sturgeon migrating upstream through the Yolo Bypass can be attracted to flows in Knights Landing Ridge Cut and the CBD, particularly if diverted water carries olfactory cues from the upstream Sacramento River. In the CBD, a combination of warm temperatures, poor water quality, limited habitat, and a lack of access upstream for returning to the Sacramento River leaves anadromous fish stranded where they perish without spawning (ICF 2016).

⁵ USGS delineates watersheds using a nationwide system based on surface hydrologic features. This system divides the country into 21 regions (2-digit), 222 subregions (4-digit), 370 basins (6-digit), 2,270 sub-basins (8-digit), ~20,000 watersheds (10-digit), and ~100,000 sub-watersheds (12-digit). Each division is assigned a hydrologic unit code beginning at the regional level with 2 digits. Each level is subsequently divided into smaller units down to the smallest units, the 12-digit HUC. Each higher units contains all the smaller units within its boundaries.

In 2016, Reclamation District (RD) 108 completed construction of the Wallace Weir Fish Rescue Facility, which is designed to exclude fish migrating upstream in the Yolo Bypass from entering Knights Landing Ridge Cut and the CBD (NMFS 2019). RD 108 and the resource agencies are also working to preclude fish from entering the CBD via the Knights Landing Outfall Gates. Additionally, the NMFS recovery plan for salmonids in the Central Valley calls for identifying other potential entry points into the CBD and installing fish exclusion devices to reduce migration of listed adult salmonids into the CBD complex (NMFS 2014).

Effects of Sites Reservoir Project on Stone Corral Creek and Funks Creek

The Sites Reservoir Project is an offstream storage project designed to store and manage water diverted from the Sacramento River. To create the reservoir, Sites Dam and Golden Gate Dam will be built across Stone Corral Creek and Funks Creek along with several saddle dams to raise low points in the rim around the proposed reservoir site. The dams across Stone Corral and Funks creeks will retain the flow from these creeks. The project description in the Draft EIR/EIS included low-level outlet works in the two dams capable of releasing stream maintenance flows of up to 10 cfs into Stone Corral and Funks creeks to mimic the intermittent nature of these streams (Chapter 3 of the Draft EIR/EIS). Flow into the low-level outlets would be from low in the reservoir. To the extent the reservoir stratifies in the late spring and summer, these outlets would release cold water into the streams, which are currently populated with species more typically adapted to warm water environments. Releases of 10 cfs would likely warm quickly below the dams due to the lack of riparian cover and high ambient temperatures that occur in late spring, summer, and early fall in the Sacramento Valley. In addition, flow from Funks Creek into Funks Reservoir would likely be warmed in the shallow reservoir and would not affect temperatures below Funks Dam. The effect of this temperature shift on the warm water community below the dams is anticipated to be minimal due to the potential for solar warming on the valley floor.

Given that construction plans do not include fish passage facilities, fish will be precluded from moving above the dams in search of refugia during late spring and summer dry periods, and information on the availability of refugia habitat below the reservoir location is lacking so there is a potential for stranding of fish below the dams as winter flows diminish. CDFW's recommendation for a perennial flow would address this issue. However, absent a perennial flow, fish could continue to move downstream to wetted habitat given GCID's use of the stream channels for conveyance.

High flood flows in the historical hydrograph will be retained in the reservoir to achieve the flood control benefits recognized by the California Water Commission in its review of the Sites Authority request for funding from the Water Storage Investment Program (WSIP). Consideration should be given to when and how those flows will be released, whether a portion of these flows are needed to maintain fluvial geomorphic processes, and what level of variability in base flows will satisfy California Fish and Game Code section 5937 goals consistent with the goals and objectives of the Sites Reservoir Project.

Recommendations for Consideration

The CDFW fish investigation referenced above was conducted upstream of the Sites Dam and Golden Gate Dam locations. The assemblage of fish identified in those studies is reasonably representative of the fish species that occur below the dam locations because the same species have been documented in the CBD. For reasons discussed above, Stone Corral and Funks creeks are unlikely to support populations of any special-status fish species. To the extent special-status species occur in the CBD, cooperative efforts are underway to exclude them. Nevertheless, the Sites Authority should confirm with CDFW that the appropriate list of fish likely to be affected in Stone Corral and Funks creeks is the warm water community documented in the 1998 and 1999 CDFW studies.

The Sites Authority should also meet with CDFW to discuss CDFW's expectation for flows that would maintain fishes in good condition in Stone Corral and Funks creeks. CDFW input on whether hydrologic studies are needed to define the hydrology of these watersheds under current conditions would be useful, and if so, their input on the design of those studies. The recommendation presented below was developed to provide a rationale for a reasonable approach the engineering team could use for preliminary design of facilities to be incorporated in the project description for the environmental review being conducted by the Sites Authority. While we think this recommendation is sufficient for planning purposes, we have no way of knowing whether it will satisfy CDFW concerns without their review.

Given that the dams associated with Sites Reservoir will retain the flows from these streams in the proposed reservoir, the project should be modified to provide a flow representative of the variability in pre-project flows for the purpose of maintaining fish in good condition. The critical question is: what is the appropriate level of variability in flows? There has not been a flow investigation to develop a recommended hydrograph for releases from Sites Dam or Golden Gate Dam and the WSIP schedule for environmental review precludes a detailed study. Richter et al. (2011) have proposed a "presumptive standard" for stream flows that would likely sustain fishery resources in the affected streams. They proposed implementation of this standard when time and resources are not available to undertake the extensive hydrological studies that are required to develop values for sustaining fishery resources. Their presumptive standard is based on characterizing unimpaired flow and protecting a percentage of those flows to protect the ecological function of a waterway, similar to SWRCB's proposed percent of unimpaired flow approach for its update of the Bay Delta Plan for flows in the San Joaquin and Sacramento Rivers (SWRCB 2018).

Richter et al. (2011) suggest that protecting 80 percent of daily flow will maintain ecological integrity in most rivers and streams. While they suggest a reduction in flows of 20 percent may result in some structural change, they expect it would result in only minimal changes in ecosystem function.

While other approaches exist to estimate minimum stream flows to maintain ecosystem and geomorphic function, such as "the functional flow" approach suggested by Yarnell et al. (2015), they require information that is not currently available. In addition, the Yarnell et al. (2015) approach was developed for consideration in highly developed streams and rivers where societal demands are well established and mimicking the full natural flow regime is not likely to be implemented. This situation does not appear to apply to Funks and Stone Corral creeks.

For the Sites Project, the reaches of stream likely to be most modified by the two proposed dams are the reaches from below the dams to where they have been modified by historical water management practices (reaches of interest, Fig. 1). On Stone Corral Creek, the reach of interest is from the downstream face of the Sites Dam to just above the GCID canal; on Funks Creek, it is from the downstream face of Golden Gate Dam to the upper end of Funks Reservoir. While these reaches have been modified by cattle grazing and minor diversions for domestic use and stock watering, they still experience much of their natural hydrograph and fluvial geomorphic processes. As such, the Richter et al. (2011) approach is a reasonable starting point for addressing CDFG Code Section 5937.

Table 4 presents the 80th percentile of mean daily values of water years for the period of record for the USGS stream gage which was located on Stone Corral Creek. There is only one day that exceeded 78 cfs. Therefore, we recommend that the Sites Authority ask its engineering team to consider designing facilities capable of releasing up to 80 cfs to the reaches of interest in Stone Corral and Funks creeks. Given the erosive nature of the soils in the Stone Corral and Funks watersheds and the current constraints of their respective stream channels (i.e., deep channels and shallow ravines) in the reaches of interest, a variable flow up to 80 cfs may be enough to maintain geomorphic processes (e.g. mobilization of bedload, and erosion of stream banks) that support the fish assemblage and other aquatic species below the dams.

The project description in the Draft EIS/EIR included a base flow of 10 cfs. However, it was equivocal whether the base flow would be provided year-round or from October to May. Since Stone Corral and Funks Creeks are intermittent streams, which did not flow in summer months of average years and in dry years did not flow at all (Table 1). While CDFW code section requires maintaining fish in good condition, it's not clear that it requires conversion of intermittent streams to perennial streams, and while fish will be precluded from migrating to the upper reaches of Stone Corral and Funks Creek they will be able to move downstream to reaches maintained by agricultural diversions into the stream channels. Therefore, we recommend a flow regime that maintains the intermittent nature of these streams and protects the 80th percentile of the documented hydrology.

Finally, for reasons stated above, we recommend the engineering team consider facilities in the project design capable of delivering 0 to 80 cfs to the stream channels below Sites Dam and Golden Gate Dam. Also, consideration should be given to a mechanism that will provide higher flows on an infrequent basis, consistent with the project's flood control benefit for maintenance of fluvial geomorphic processes, such as channel forming flows (perhaps flows of several hundred cfs).

If necessary, the Richter et al. (2011) approach could be adaptively managed to incorporate some of the more flexible processes suggested by a functional flow approach. This would likely require installation of stream gages to record the hydrograph in these streams over several years and water year types to determine flow variability. Fish surveys to confirm species presence, distribution and habitat use. Also monitoring programs to confirm the frequency and magnitude of flows to mobilize the bedload, freeing embedded gravel, clearing sandy and muddy areas of vegetation, and eroding stream banks are all elements that may be required to maintain the diversity of spawning habitats used by the assemblage of fish documented to be present in these streams. In addition, whether the 80th percentile of the historical hydrograph is sufficient for channel forming flow needed maintain

ecological function of the reaches below the dams needs to be determined. These studies would need to document habitat availability and habitat use. Such information would provide important information for determining whether these reaches will provide habitat necessary for the fish present to complete their life cycles after the dams are constructed and perennial flow is provided.

Development of an adaptive management approach for compliance with California Fish and Game Code 5937 is another subject for which input from CDFW would be valuable. Absent CDFW input, the Sites Authority risks over-designing this aspect of the project which would result in unnecessary cost. Under-designing this aspect of the project could lead to costly re-engineering late in the design or permitting processes.

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Table 4. 80th percentile of daily mean values for each day for water year of record (calculation period of record 1957-10-01 to 1985-09-30)

Day of the Month	Discharge, Cubic Feet per Second											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1.9	21	26	13	3.3	0.34	0.04	0	0	0	0	0.72
2	2.7	19	17	12	2.9	0.26	0.04	0	0	0	0	2.3
3	2.5	19	29	10	3	0.18	0.04	0	0	0	0	2.1
4	4.8	15	42	9.5	3.2	0.25	0.04	0	0	0	0	1.1
5	4.7	17	47	11	3	0.32	0.04	0	0	0	0	1
6	5.4	13	39	11	3	0.28	0	0	0	0	0	0.6
7	4.2	13	40	11	3	0.24	0	0	0	0	0	0.42
8	4.8	26	29	8	2.6	0.23	0	0	0	0	0	0.48
9	20	32	24	7.4	2.4	0.23	0	0	0	0	0	0.57
10	9.4	44	23	7.5	2.2	0.15	0	0	0	0	0	0.52
11	15	11	20	7.3	2.1	0.19	0	0	0	0	0	0.47
12	19	49	18	7.1	1.8	0.19	0	0	0	0	0	0.47
13	29	76	17	6.9	1.6	0.23	0	0	0	0	0	0.47
14	24	58	16	9.5	1.5	0.17	0	0	0	0	0.01	0.47
15	38	78	15	9	1.3	0.18	0	0	0	0	0.01	0.51
16	191	69	18	8.5	1.1	0.1	0	0	0	0	0	0.62
17	50	55	16	6.9	0.84	0.1	0	0	0	0	0	0.82
18	33	46	16	5.6	0.7	0.1	0	0	0	0	0.04	0.89
19	24	28	18	5.2	0.66	0.07	0	0	0	0	0.26	6.2
20	29	31	15	4.9	0.63	0.06	0	0	0	0	0.07	2.8
21	34	31	37	4.7	0.57	0.06	0	0	0	0	0.02	15
22	23	23	24	4.6	0.5	0.07	0	0	0	0	0	9.8
23	19	18	17	4.7	0.52	0.06	0	0	0	0	0.06	6
24	17	16	13	4.9	0.44	0.05	0	0	0	0	0	7.2
25	18	16	13	4.6	0.44	0.04	0	0	0	0	0	4.4
26	15	15	9.2	5.2	0.44	0.04	0	0	0	0	0.02	4
27	28	15	15	4.6	0.34	0.03	0	0	0	0	0.09	3.2
28	20	15	15	4.3	0.29	0.03	0	0	0	0	1.9	3.8
29	44	18	11	3.7	0.27	0.04	0	0	0	0	1.1	4.7
30	34		14	3.6	0.24	0.04	0	0	0	0	0.68	2.6
31	29		12		0.18		0	0		0		1.5

References

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Appendix

Species Lists Funks and Stone Corral Creeks: University of California Agriculture and Natural Resources - California Fish Website - Fish Species by Watersheds

Funks Creek-180201040602'	Stone Corral Creek-180201040604'
Native species	Native species
Western Brook - <i>LampreyLampetra richardsoni</i>	Western Brook - <i>LampreyLampetra richardsoni</i>
Thick tail Chub - <i>Siphatales carssicauda</i>	Thick tail Chub - <i>Siphatales carssicauda</i>
Riffle Sculpin - <i>Cottus gulosus</i>	Riffle Sculpin - <i>Cottus gulosus</i>
Sacramento Blackfish - <i>Orthodon microlepidotus</i>	Sacramento Blackfish - <i>Orthodon microlepidotus</i>
Sacramento Perch - <i>Archoplites interruptus</i>	Sacramento Perch - <i>Archoplites interruptus</i>
Sacramento Pikeminnow - <i>Ptychocheilus grandis</i>	Sacramento Pikeminnow - <i>Ptychocheilus grandis</i>
Sacramento Speckled Dace - <i>Rhinichthys osculls</i>	Sacramento Speckled Dace - <i>Rhinichthys osculls</i>
Sacramento Splitttail - <i>Pogonichthys macrolepidotus</i>	Sacramento Splitttail - <i>Pogonichthys macrolepidotus</i>
Sacramento Sucker - <i>Catostomus occidentalis occidentalis</i>	Sacramento Sucker - <i>Catostomus occidentalis occidentalis</i>
Pacific Lamprey - <i>Entosphenus tridentate</i>	Pacific Lamprey - <i>Entosphenus tridentate</i>
Prickly Sculpin - <i>Cottus asper</i> subspecies	Prickly Sculpin - <i>Cottus asper</i> subspecies
Hardhead - <i>Mylopharodon conocephalus</i>	Hardhead - <i>Mylopharodon conocephalus</i>
Inland Treespine Stickelback - <i>Gasterosteus aculeatus</i>	Inland Treespine Stickelback - <i>Gasterosteus aculeatus</i>
Central California Roach - <i>Lavinia symmetricus</i>	Central California Roach - <i>Lavinia symmetricus</i>
Central Valley Steelhead - <i>Oncorhynchus mykiss</i>	Central Valley Steelhead - <i>Oncorhynchus mykiss</i>
Coastal Rainbow Trout - <i>Oncorhynchus mykiss irideus</i>	Central Valley Spring Chinook <i>Oncorhynchus tshawytscha</i>
Introduced species	Introduced species
Black Bullhead - <i>Ameiurus melas</i>	Common Carp - <i>Cyprinus carpio</i>
Bluegill - <i>Loponis macrochirus</i>	Goldfish - <i>Carassius auratus</i>
Brown Bullhead - <i>Ameiurus nebulosus</i>	Readear Sunfish - <i>Leponis microlophus</i>
Common Carp - <i>Cyprinus carpio</i>	Samllmouth Bass - <i>Micropterus dolomieu</i>
Golden Shiner - <i>Notemigonus crysoleucas</i>	White Crappie - <i>Pomoxis annularis</i>
Goldfish - <i>Carassius auratus</i>	Spotted Bass - <i>Micropterus punctulatus</i>
Green Sunfish - <i>Lepomis cyanellus</i>	
Largemouth Bass - <i>Micropterus salmonoides</i>	
Readear Sunfish - <i>Leponis microlophus</i>	
Samllmouth Bass - <i>Micropterus dolomieu</i>	
Western Mosquitofish - <i>Gambusia affinis</i>	
White Crappie - <i>Pomoxis annularis</i>	
http://calfish.ucdavis.edu/location/?ds=697&reportnumber=1294&catcol=4703&categorysearch=Colusa	

CA Fish & Game Code 5937 Meeting Agenda



Sites Reservoir Project

Date: November 5, 2020 **Location:** WebEx – see Outlook invite for link

Time: 10:00 am – 11:30 am

Audio Call in : 1-408-418-93881-408-418-9388,
1463098177##

Purpose: Discussion of Sites Reservoir 5937 requirements and developing approach for affected streams.

Invitees:

Kristal Davis-Fadtke, CDFW	Jason Hassrick, ICF	Jim Lecky, ICF
Ian Boyd, CDFW	John Spranza, Sites Integration	Monique Briard, ICF
Juan Torres, CDFW	Andrew Huneycutt, CDFW	Ali Forsythe, Sites Authority
Mike Hendrick, ICF		

Agenda:

Discussion Topic	Topic Leader	Est Time
1. Introductions	John Spranza	5 min
2. Objectives (flow schedule for fish in good condition)	John and Jim	10 min
3. Confirmation of species list (which fishes?)	Jim	10 min
a. Ten warm water fish species identified during surveys (see Table 2 in TM sent by J. Spranza 10/22)		
b. No salmon habitat		
4. Maintain intermittent nature of streams	ICF	15 min
a. Maintain as ephemeral/intermittent? Referred to as ephemeral in 2017 EIR/S		
b. Are perennial flows warranted? Group discussion		
5. Managed flow regime	ICF	15 min
a. Release parameters for flows into Stone Corral and Funks Creeks – recommend approximating 80 percentile of historic flows (Richter study)		
b. Periodicity (every year? Every 5 years? Once a decade?)		
6. Discussion of flood flows – are high channel forming flows (e.g. > 1000 cfs) needed, if so how often?	ICF	15 min
7. Key questions to address:	ICF	15 min
a. New investigations		
b. Monitoring programs		
c. Adaptive Management Plan		

	Action Item	Owner	Deadline	Notes
1				
2				
3				
4				

Notes

From: Berryman, Ellen [Ellen.Berryman@icf.com]
Sent: 10/29/2020 1:55:47 PM
To: Torres, Juan@Wildlife [Juan.Torres@wildlife.ca.gov]; John Spranza [John.Spranza@hdrinc.com]; Briard, Monique [Monique.Briard@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Boyd, Ian@Wildlife [Ian.Boyd@Wildlife.ca.gov]; Kearns, Zachary@Wildlife [Zachary.Kearns@Wildlife.ca.gov]
CC: Cain, Ian [Ian.Cain@hdrinc.com]; Haire, Jennifer [Jennifer.Haire@icf.com]
Subject: GGS model description/Next CDFW Sites Terrestrial Restart Meeting
Attachments: Sites GGS model description_072319.docx

Hi All,

As discussed yesterday, attached is the GGS model description for final CDFW review of approach before we apply the format to the other species.

Can you each let me know your availability to meet during the following time slots, to discuss CEQA issues and species models?

Monday, Nov 16:

11-12

1:30 – 3

Tuesday, Nov 17:

11:30 – 1

2-5

Wednesday, Nov 18:

2:30-5

Tuesday, Nov 24:

11:30 – 1

2-4

Giant Garter Snake

Habitat Model Description

The modeled habitat for giant garter snake in the study area is bound to the west by GCID Canal, including areas of upland habitat 200 feet west of GCID.

The modeled aquatic habitat for giant garter snake includes the following land cover categories:

- Canal (includes agricultural ditches and earthen lined canals)
- Freshwater marsh
- Managed wetland
- Rice

Modeled upland habitat for giant garter snakes includes the following terrestrial land cover types immediately adjacent to and within 200 feet (61 meters) of the aquatic habitat types previously listed.

- Annual grassland
- Disturbed (includes barren areas)

Assumptions

Giant garter snakes inhabit marshes, ponds, sloughs, small lakes, low-gradient streams and other waterways, and agricultural wetlands, including irrigation and drainage canals, rice fields, and the adjacent uplands (U.S. Fish and Wildlife Service 2006). Suitable aquatic habitat consists of slow-moving or static water that is present from March through November with a mud substrate and the presence of prey (amphibians or fish) (USFWS 2017). Emergent and bankside vegetation that provides cover from predators and for thermoregulation is also required. Other components of suitable aquatic habitat are the absence of a continuous riparian canopy, basking sites with supportive vegetation (such as folded tule clumps) adjacent to escape cover, the absence of large predatory fish, and upland refugia in locations subject to recurrent flooding (USFWS 2017). Riparian woodland is generally considered unsuitable habitat because of the lack of basking sites, excessive shade, and lack of prey.

Upland habitat consists of land that is not typically inundated during the active season and is adjacent to aquatic habitat. Characteristics of suitable upland habitat are available bankside vegetation, such as cattails or tule, permanent shelter, such as bankside cracks and crevices, holes or small mammal burrows, and areas that are not overgrazed. Giant garter snakes use upland habitat for basking, to regulate body temperature, and for cover. Giant garter snakes use mammal burrows to avoid predation, shed skin, and cool their bodies during hot days (USFWS 2017).

- **Assumption:** Giant garter snakes do not use areas west of GCID Canal; however the model does include upland habitat 200 feet west of GCID.

Rationale: Areas east of GCID Canal support agricultural areas including rice and agricultural ditches that are typically used by giant garter snakes. There are also managed wetlands east of the canal. West of the canal consists primarily of grasslands and creeks that generally don't have slow moving or static water for an extended period of time between March and November and have substrates dominated by gravel, which are not suitable for giant garter snake as they are found in areas with mud substrates (USFWS 2017). These streams have high flows during the winter and spring, and generally go dry toward the middle of the summer. Funks Creek, Antelope Creek, Grapevine Creek, and Stone Corral Creek have been defined as intermittent streams (Sites 2017). During summer, much of the streambed of these streams are dry, except for occasional pools or when receiving agricultural drainage or runoff. In addition, water quality is reported to be poor and high in dissolved minerals (Brown, 2000). West of GCID in the project vicinity there is no rice and ditches there are not directly connected to ditches east of GCID. Also, there are no giant garter snake occurrences west of GCID in the project vicinity; however, there is one record (Occurrence Number 205) from 1984 on Stone Corral Creek, which is plotted in the CNDDDB as being west of GCID and which is adjacent to areas of rice. This occurrence is approximately 3.2 miles south of the project footprint.

Assumption: Giant garter snakes may use earthen canals but do not likely use concrete lined canals due to a lack of soft substrate (e.g., mud, silt).

- **Rationale:** Giant garter snakes prefer emergent, herbaceous aquatic vegetation accompanied by vegetated banks (USFWS 2017). Concrete lined canals do not allow for establishment of the vegetation and support of the prey base needed to support giant garter snakes.

Assumption: Potentially occupied giant garter snake upland habitat consists of the vegetation types listed in *Habitat Model Description*, above.

Rationale: Giant garter snakes require basking habitat of grassy banks and openings in waterside vegetation. They also require uplands for cover and refuge from floodwaters during the snake's dormant season in the winter (USFWS 2017). Riparian woodlands are unlikely to provide suitable habitat as a result of excessive shade and general lack of basking sites.

Assumption: Potentially occupied giant garter snake upland habitat consists of appropriate land cover types within 200 feet (61 meters) of modeled aquatic habitat.

Rationale: Giant garter snakes use grassy stream banks and upland habitats adjacent to perennial watercourses or wetlands as overwintering, areas to temporarily seek refuge during the summer, and movement habitat (USFWS 2017).

Model Limitations

The model is limited primarily by the accuracy of aerial imagery interpretation and the inability to ground truth the land cover mapping (e.g., identifying area with suitable upland refugia). The model provides a conservative estimate of potentially suitable giant garter snake habitat because the amount of aquatic habitat and upland habitat mapped is all deemed to be equally suitable.

References

Brown, C. J. 2000. *North of the Delta Offstream Storage Investigation Progress Report*. Appendix D: Fish Survey Summary. Assisted by W. Yip, G. Gorden, G. Low, and A. Scholzen. CALFED Bay-Delta Program.

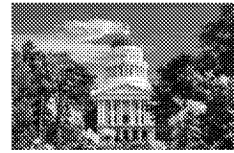
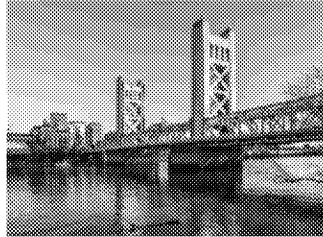
U.S. Fish and Wildlife Service. 2017. Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, California. vii + 71 pp..

Sites Reservoir



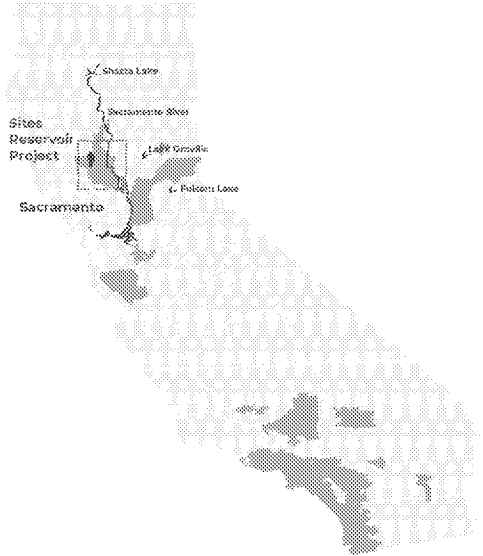
21st Century Solution to California's Water Reliability Challenges

Sites Reservoir is a generational opportunity to construct a multi-benefit water storage project that helps restore flexibility, reliability, and resiliency to our statewide water supply



Our Strength is in Our Broad Statewide Participation

Diverse statewide representation of public agencies advancing Sites Reservoir



Participants include
counties, cities, water
and irrigation districts

Urban and Rural

Sacramento Valley

San Joaquin Valley

Bay Area

Southern California



Our Strength is in Our Broad Statewide Participation

Sacramento Valley

Carter Mutual Water Company
City of American Canyon
Colusa County
Colusa County Water Agency
Cortina Water District
Davis Water District
Dunnigan Water District
Glenn County
Glenn-Colusa Irrigation District
LaGrande Water District
Placer County Water Agency
Reclamation District 108
City of Roseville
Sacramento County Water Agency
City of Sacramento
Tehama-Colusa Canal Authority
Westside Water District
Western Canal Water District

Bay Area

Santa Clara Valley Water District
Zone 7 Water Agency

San Joaquin Valley

Wheeler Ridge-Maricopa Water Storage
District

Southern California

Antelope Valley - East Kern Water Agency
Coachella Valley Water District
Desert Water Agency
Metropolitan Water District
San Bernardino Valley Municipal Water District
San Geronio Pass Water Agency
Santa Clarita Valley Water Agency



Rightsized to Meet Our Current and Future Water Supply Needs

Sites Reservoir has been designed and optimized to meet our water supply needs for today and in the future

The Sites Project Authority conducted a rigorous Value Planning effort to review the project's proposed operations and facilities to develop a project that is "right sized" for our investors and participants while still providing water supply reliability and enhancing the environment

Rightsizing the reservoir was responsive to input from state and federal agencies, NGOs, elected officials, landowners and local communities

The feedback we received through a robust outreach effort was critical to developing a reservoir that is the right size for both people and the environment

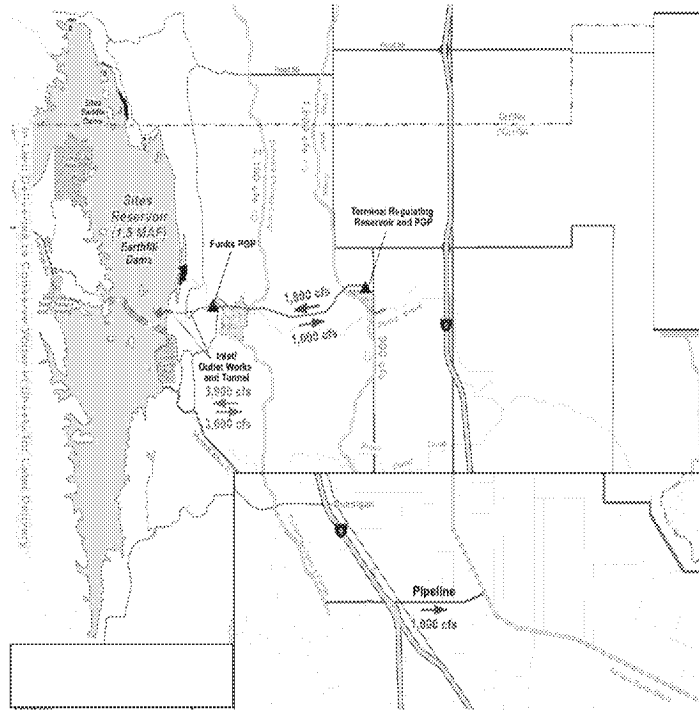


Rightsized to Meet Our Current and Future Water Supply Needs

1.5 million acre-feet

Utilizes the existing Glenn-Colusa Irrigation District and Tehama-Colusa Canal Authority canals to convey water to Sites Reservoir from the Sacramento River

Delivers water back to the Sacramento River through the Tehama-Colusa Canal and through the Colusa Basin Drain for participant deliveries and for the environment



Rightsized to Meet Our Current and Future Water Supply Needs

Member	Reservoir Participation (AFY)
Public Water Agencies	
North of Delta	52,142
South of Delta	140,750
Subtotal Public Water Agencies	192,892
State of CA	~ 40,000
Total Requirement	~230,000

Participant Demand

Participant water subscriptions allocated in the current participation agreement

Allocation of State of California water subscription is based on the Proposition 1 water investment

- Water for Delta Smelt
- Water for Refuges

Release Capacity from Sites

The "rightsized" project can deliver water to meet the demands of our participants and California's investment of water for the environment

Long term average ~240,000 AFY

Year Type	1,000 cfs Release Capacity (AFY) to the Colusa Basin Drain
Wet	90 - 120
Above Normal	260 - 290
Below Normal	245 - 275
Dry	355 - 385
Critically Dry	210 - 240



Assumed Diversion and Operations Criteria

Location	Criteria
Wilkins Slough Bypass Flow	8,000 cfs April/May 5,000 cfs all other times
Fremont Weir Notch	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 5%
Flows into the Sutter Bypass System	No restriction due to flow over Moulton, Colusa, and Tisdale Weirs
Freeport Bypass Flow	Modeled WaterFix Criteria (applied on a daily basis) Post-Pulse Protection (applied on a moving 7-day average) Post-Pulse (3 levels) = January–March Level 2 starts January 1 Level 1 is initiated by the pulse trigger
Net Delta Outflow Index (NDOI) Prior to Project Diversions	44,500 cfs between March 1 and May 31



Assumed Release Criteria

Most releases occur in dry years for water supply and environmental benefits

Priority of releases assume the following:

- Provide water to project participants north and south of the delta
- Provide water to Cache Slough area via Yolo bypass
- Provide water for incremental Level 4 refuge deliveries
- Support Reclamation goals through exchanges

Deliveries to SWP contractors supplement Table A (start @ 85% allocation and more aggressive releases starting @ 65%)



Rightsized to Meet Our Current and Future Water Supply Needs

The Value Planning process has resulted in a project that has a **smaller footprint and operated in a different manner** than originally designed

Due to these changes the Authority will revise and recirculate its Draft EIR

Work with landowners, tribes, stakeholders, NGOs, and local communities to develop a collaborative environmental review process

It is essential that we build a project now that makes sense for all our participants – local, state, and federal



Rightsized to Meet Our Current and Future Water Supply Needs

Reservoir Size (MAF)	1.5
Project Cost (2019\$, billions)	\$2.4 - \$2.7
Contingency Cost (2019\$, billions)	\$0.6
Total Project Cost (2019\$, billions)	\$3.0 - \$3.3
Annualized AFY release	240,000
Range of Annual Costs During Repayment Without WIFIA Loans (2020\$, \$/AF)	\$650 - \$710
Range of Annual Costs During Repayment With WIFIA Loans (2020\$, \$/AF)	\$600 - \$660

The rightsized project is roughly **\$2 Billion less** than the 2017 preferred alternative

Cost savings primarily from the removal of the Delevan Diversion facility on the Sacramento River and the Delevan Pipeline

Lowered the Annual Cost during repayment (\$/AF)

Significant savings to participants with finance through a WIFIA government backed loan



Provides Statewide Benefits for Generations to Come

Sites Reservoir provides many multi-layered benefits



Off-stream Storage

Does not create a barrier to native fish migration



Federal and State Agencies Manage Environmental Water

Adaptable to current and future conditions and priorities



Local Leadership and Cooperation

Aligns with Sacramento Valley's values and fosters regional and statewide collaboration



Cooperative Operation

Increases effectiveness and efficiency of existing water storage infrastructure



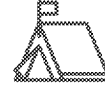
Adaptable to Climate Change

Contributes to system reliability and performance with climate change



Dry Year Water Supply

Reliable dry year water supply for California communities, farms and businesses



Recreational Opportunities

Provides northern Sacramento Valley with additional opportunities for recreation



Environmental Support

Provides environmental water in drier periods for native fish, and habitat for native species and birds



Provides Statewide Benefits for Generations to Come

Sites Reservoir provides water dedicated to environmental use

A significant portion of the Sites Reservoir Project's annual water supplies will be dedicated to environment uses:

Preserve cold-water pool in Lake Shasta later into the summer months to support salmon development, spawning and rearing

Provide a reliable supply of refuge water to improve Pacific Flyway habitat for migratory birds and other native species

Provide water dedicated to help improve conditions for the Delta Smelt

Water dedicated for the environment provided by Sites Reservoir will be managed by state resources agency managers who will decide how, and when, this water would be used - creating a water asset for the state that does not currently exist



Possibilities of Environmental Water Uses

Member	Reservoir Participation (AFY)
Public Water Agencies	
North of Delta	52,142
South of Delta	140,750
Subtotal Public Water Agencies	192,892
State of CA	~ 40,000
Total Requirement	~230,000



Sites creates a resource that can be managed for the benefit of the species.

Water for the environment is managed by state resource agencies.

There is flexibility to manage these benefits each year.

The range of possibilities will be covered in the recirculated Draft EIR.



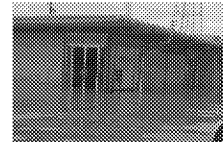
Provides Statewide Benefits for Generations to Come

Sites Reservoir provides regional flood protection benefits

Provides significant regional flood protection benefits for the Sacramento Valley

Will capture and store flood flows that would normally impact the community of Maxwell - protecting homes, business and farms

Will help to limit "down stream" flooding issues by capturing storm flows that sometimes overwhelm the regions flood control facilities



Provides Statewide Benefits for Generations to Come

Sites Reservoir will benefit the local and regional economy

Create hundreds of construction-related jobs during each year of the construction period, and long-term jobs related to operations

Creates new recreation opportunities in the Sacramento Valley which adds to the region's economy

Adding resiliency to the water supply will strengthen the statewide economy and business that rely on a reliable source of water for their operations – particularly agriculture



We are On-Track to Deliver This Vital Project for the People of California

Key Milestones Through 2021

Meet eligibility requirements under Prop 1 (WSIP) in order to access the remainder of the \$816 Million in funding

Recirculate Draft EIR for public comment, proactively engage stakeholders, develop responses to comments to support environmental feasibility determination

Complete Feasibility Report

Secure environmental permit certainty and draft permit applications

Update and refine cost estimate and affordability analysis

Develop Plan of Finance

Improve definition of SWP/CVP exchange, including Operations Plan

Enhance landowner, stakeholder & NGO engagement

Develop Operating Agreement Term Sheets with: DWR, USBR, TCCA, CCID, CBD Authority



Questions

 **Sites**

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 10/30/2020 8:45:27 AM
To: Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]; Heydinger, Erin [erin.heydinger@hdrinc.com]
CC: Kundargi, Kenneth@Wildlife [Kenneth.Kundargi@wildlife.ca.gov]; La Luz, Felipe@Wildlife [Felipe.LaLuz@wildlife.ca.gov]; Uttley, Paige@Wildlife [Paige.Uttley@wildlife.ca.gov]; Williams, Jonathan@Wildlife [Jonathan.Williams@wildlife.ca.gov]; Sherrick, Robert@Wildlife [Robert.Sherrick@Wildlife.ca.gov]; Huneycutt, Andrew@Wildlife [Andrew.Huneycutt@Wildlife.ca.gov]; Meyers, Erica@Wildlife [Erica.Meyers@wildlife.ca.gov]; Johnson, Matt@Wildlife [Matt.Johnson@wildlife.ca.gov]; Nelson, Jonathan@Wildlife [Jonathan.Nelson@wildlife.ca.gov]; Grover, Joshua@Wildlife [Joshua.Grover@wildlife.ca.gov]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; steven_schoenberg@fws.gov; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; Hendrick, Mike (Mike.Hendrick@icf.com) [Mike.Hendrick@icf.com]; Lecky, Jim [Jim.Lecky@icf.com]
Subject: RE: Sites Joint Aquatics Workshop #1
Attachments: _Readme_20201029_Sites_Prelim Effects Analysis.pdf; SITES-NODOS_Trend_Reporting_rev01cy_DV2_HistClim_CALSIM_DSM2_HEC5Q__ALTA2_092220_PrelimEffects.xlsm

Hi Kristal,

Thanks for the timely feedback, I'll work with Erin and Rob to get your specific questions answered. In the meantime, I did pass your (and Evan's) request for more raw modeling data along to the team and Jacob's was able to put something together. Please see the attached refined trend reporting spreadsheet that we hope will provide you with what you were looking for. Keep in mind that we are still refining the model, and that these numbers will change before our next meeting. As always, please feel free to forward any questions/comments you have.

Thanks.
John

John Spranza

D 916.679.8858 M 818.640.2487

From: Davis-Fadtke, Kristal@Wildlife [mailto:Kristal.Davis-Fadtke@wildlife.ca.gov]
Sent: Thursday, October 29, 2020 6:06 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>
Cc: Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; La Luz, Felipe@Wildlife <Felipe.LaLuz@wildlife.ca.gov>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Sherrick, Robert@Wildlife <Robert.Sherrick@Wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Meyers, Erica@Wildlife <Erica.Meyers@wildlife.ca.gov>; Johnson, Matt@Wildlife <Matt.Johnson@wildlife.ca.gov>; Nelson, Jonathan@Wildlife <Jonathan.Nelson@wildlife.ca.gov>; Grover, Joshua@Wildlife <Joshua.Grover@wildlife.ca.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; steven_schoenberg@fws.gov
Subject: RE: Sites Joint Aquatics Workshop #1

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi John,

Thank you for sending the diversion criteria. We want to be able to provide meaningful input to assist the Sites team as you further develop your analyses and operational plan. In order to evaluate the information presented on Monday, we need additional details on the diversion criteria, model assumptions and modeled outputs. The averaged data displayed in the charts isn't of sufficient resolution for us to assess how the project may affect the system. The best way for us to gain this understanding would be to review the Calsim runs.

Additionally, we have a couple of questions about the diversion criteria. Can you provide more detail on how the Fremont Weir notch criteria and Sutter Bypass criteria were operationalized? Given the presentation by Cyril and his finding that there is 50% survival starting at the flow threshold of 10,700 cfs at Wilkins Slough, how does Sites propose to address reductions in survival with a bypass flow criteria of 8,000 cfs in April/May and 5,000 cfs during all other times?

Last year the Sites team presented a daily model that included more recent hydrology than what is in Calsim. At a future meeting would you be able to model different criteria with the daily model so we could look at changes to the system for years where we have fishery data?

Just so you know, several members of our team will be off during the holiday week. We look forward to continuing to work with you.

Best,

Kristal

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Tuesday, October 27, 2020 9:02 AM

To: Leaf, Rob/SAC (Rob.Leaf@jacobs.com) <Rob.Leaf@jacobs.com>; Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Davis, Ryan A <rdavis@usbr.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Hendrick, Mike (Mike.Hendrick@icf.com) <Mike.Hendrick@icf.com>; Jerry Brown (jbrown@sitesproject.org) <jbrown@sitesproject.org>; Melissa Dekar (mdekar@usbr.gov) <mdekar@usbr.gov>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Wilder, Rick <Rick.Wilder@icf.com>; La Luz, Felipe@Wildlife <Felipe.LaLuz@wildlife.ca.gov>; Chris Fitzer (CFitzer@esassoc.com) <CFitzer@esassoc.com>; Hassrick, Jason (Jason.Hassrick@icf.com) <Jason.Hassrick@icf.com>; Noble Hendrix <noblehendrix@gmail.com>; Greenwood, Marin <Marin.Greenwood@icf.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Jim Lecky (jim.Lecky@icf.com) <jim.Lecky@icf.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; Alicia Forsythe <ali@forsythe-group.com>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Perry, Russell W <rperry@usgs.gov>; ebuttermore@usbr.gov; mbeakes@usbr.gov; smanugian@usbr.gov

Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Schoenberg, Steven <steven_schoenberg@fws.gov>; cyril.michel@noaa.gov; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Johnson, Matt@Wildlife <Matt.Johnson@wildlife.ca.gov>; Sherrick, Robert@Wildlife <Robert.Sherrick@Wildlife.ca.gov>; Nelson, Jonathan@Wildlife <Jonathan.Nelson@wildlife.ca.gov>; Meyers, Erica@Wildlife <Erica.Meyers@wildlife.ca.gov>

Subject: Sites Joint Aquatics Workshop #1

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Good Morning,

We'd like to thank all of you for attending yesterday's workshop and hope that you found it useful. I have a few action items to follow up on:

1. Diversion Criteria Distribution: Please see attached
2. Coordinate on running the STARS model on the project.
3. Next meeting date: The week of the 23rd of November, very likely 10-12 on the 23rd. I will confirm with the team and send out an invite in the next day or so.
4. Determine the proportion of days and reversal of flows at Georgianna Slough.

We would appreciate your input on the workshop, and comments on the assumptions and effects seen in this model run. We are working on finalizing OBAN results and will have that ready in time for the next workshop.

Please let me know if I missed any action items.

Have a great day.

John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
hdrinc.com/follow-us

Preliminary Effects Analysis Trend Reporting Spreadsheet

The Trend Reporting Spreadsheet, NODOS_Trend_Reporting_rev01cy_DV2_HistClim_CALSIM_DSM2_HEC5Q__ALTA2_092220_PrelimEffects.xlsm, is designed to provide easy viewing of preliminary effects analysis model results. Scenarios provided in this trend reporting spreadsheet are tabulated below.

Model Name	Label Name (as seen in spreadsheet)	Description
No Action Alternative	NAA 091720	Baseline simulation (ROC on LTO model assumptions)
ALT A2 092220 rev03 (91 TAF CVP OpFlex) PEA	ALTA2 PEA	Alternative A2 with relaxed diversion criteria for the preliminary effects analysis

Please focus your attention to the "Report - ALL (DASHBOARD)" tab. At this tab, you can select the parameter that you wish to evaluate, the type of statistic that you would like to view (e.g. averages, water-year type averages, dry periods), and the seasonal period (e.g. individual months, water year, CVP contract year, selected seasons). There is also an option to convert flow data in CFS to volume in TAF/month.

The "Report - ALL (DASHBOARD)" tab presents data in the following formats:

- Results Table
- Bar chart of results
- Timeseries of selected statistic
- Exceedance plot (displays all data for the selected seasonal period; is not affected by "select statistic")
- Monthly Pattern (displays the selected statistic for each month; is not affected by "select seasonal period")
- Water-year type averages bar chart (not affected by "select statistic")
- Overall timeseries (includes entire timeseries, not affected by "select statistic" or "select seasonal period").

Not all statistics or seasonal periods should be used for all parameters. For example, seasonal averages or annual averages of reservoir storage do not provide value.

If reviewing results by water year type, please note that water year type averages are calculated based on calendar year, not water year.

Additionally, extra attention should be paid to the scales on the y-axis of each plot.

Pre-decisional working draft

File Provided Natively

From: Marcia Kivett [MKivett@sitesproject.org]
Sent: 10/30/2020 8:47:43 AM
To: Marcia Kivett [MKivett@sitesproject.org]; 'TBettner@gcid.net' [TBettner@gcid.net]; Jamie@tnpfarms.com; 'Rob Kunde (rkunde@wrmsd.com)' [rkunde@wrmsd.com]; RCheng@cvwd.org; Heather Dyer (heatherd@sbvmwd.com) [heatherd@sbvmwd.com]; MJazevedo@countyofcolusa.org; Jerry Brown [jbrown@sitesproject.org]; h2oman235@gmail.com; 'Jeff Davis (jdavis@sgpwa.com)' [jdavis@sgpwa.com]
CC: Kayla Mendonca [kmendonca@gcid.net]; Sylvia Bermudez [SBermudez@cvwd.org]; Kristeen Farlow [kristeenf@sbvmwd.com]
Subject: Sites Reservoir Coordination Workgroup
Attachments: 12.09.2020 Reservoir Committee Coordination Workgroup Meeting Agenda - 2pm.docx; Storage Integration Study Slide.pptx; 3 Month Look Ahead (December 2020 - February 2021).pdf
Location: Microsoft Teams Meeting
Start: 12/9/2020 2:00:00 PM
End: 12/9/2020 3:00:00 PM
Show Time As: Busy

Required Attendees: 'TBettner@gcid.net'; Jamie@tnpfarms.com; 'Rob Kunde (rkunde@wrmsd.com)'; RCheng@cvwd.org; Heather Dyer (heatherd@sbvmwd.com); MJazevedo@countyofcolusa.org; Jerry Brown; h2oman235@gmail.com
Optional Attendees: Kayla Mendonca; Sylvia Bermudez; Kristeen Farlow

Good Morning,

Please see the attached agenda and supporting documents for tomorrow's meeting.

-----Original Appointment-----

From: Marcia Kivett
Sent: Friday, October 30, 2020 8:48 AM
To: Marcia Kivett; 'TBettner@gcid.net'; Jamie@tnpfarms.com; 'Rob Kunde (rkunde@wrmsd.com)'; RCheng@cvwd.org; Heather Dyer (heatherd@sbvmwd.com); MJazevedo@countyofcolusa.org; Jerry Brown; h2oman235@gmail.com
Cc: Kayla Mendonca; Sylvia Bermudez; Kristeen Farlow
Subject: Sites Reservoir Coordination Workgroup
When: Wednesday, December 9, 2020 2:00 PM-3:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Robert Cheng – I hope this works with your schedule.

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Or call in (audio only)

[+1 213-379-5743,963693303#](#) United States, Los Angeles

[\(888\) 404-2493,963693303#](#) United States (Toll-free)

Phone Conference ID: 963 693 303#

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A Brown and Caldwell Teams meeting has been created for this event.

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Reservoir Committee Coordination Workgroup Agenda



Affordable Water, Sustainably Managed

Safety, Trust & Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility for Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity.

Meeting Participants:

Date: December 9, 2020 **Location:** [Click here to join the meeting](#)
 1-213-379-5743 Conference ID: 963 693 303#

Start Time: 2:00 p.m. **Finish Time:** 3:00 p.m.

Purpose: Ongoing update for the Reservoir Committee Coordination Workgroup

Meeting Participants:

Thad Bettner, Chairman	Jeff Davis, Vice-Chairman	Jamie Traynham, Member
Heather Dyer, Member	Robert Kunde, Member	Jerry Brown, Executive Director
Robert Cheng, Member	Mike Azevedo, Member	

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Follow-up Items from Last Coor Cmte Meeting.	Brown	5 min
2. November Board Meeting a. Any after thoughts or concerns about 2030 schedule and cash flow?	Brown	5 min
3. 3 month Look ahead Joint December Meeting a. Are there any issues Staff should be prepared to address?	Brown	10 min
4. Early Modeling Results a. Feedback on variance in average supplies from VP.	Brown	15 min
5. Prop 1 follow-up, Outreach to SJ Valley Interests a. Any concerns with initiating outreach?	Brown	5 min
6. Environmental Water Manager Update a. Reactions to developing operating plan with NGO's.	Brown	5 min

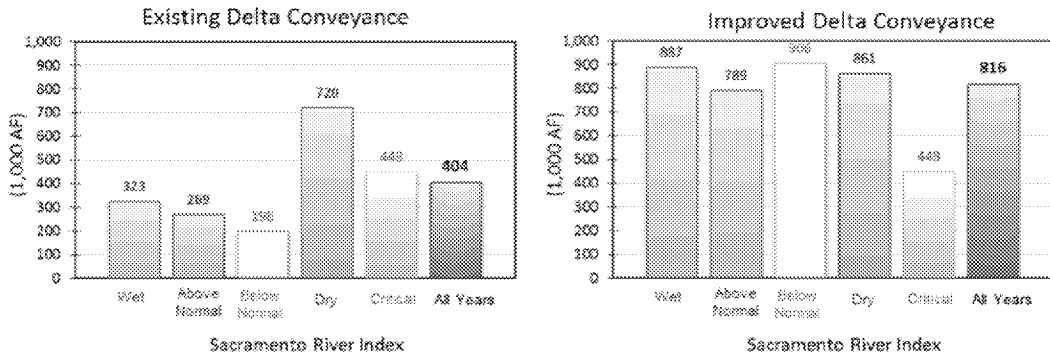


Figure 4. Average Annual Changes in Delivery with New Storage (Left) and New Storage and Improved Delta Conveyance (Right) by Water Year Type

Sites Reservoir Project - 3 Month Look Ahead

Primary	Assigned To	Governing Body
December 2020 (Joint Meeting)		
Consent Items		
Minutes	Yolanda Tirado	RC & AB
Treasurer's Report	Joe Trapasso	RC & AB
Payment of Claims	Joe Trapasso	RC & AB
Approve Fechter and Company to conduct JPA 2020 Fiscal Audit	Joe Trapasso	RC & AB
Action Items		
Approve Updated Delegation of Authority to Staff	Jerry Brown, Joe Trapasso	RC & AB
Approve Final Strategic Plan	Jerry Brown	RC & AB
Discussion and Informational Items		
Review and Comment on Option to add Reclamation @ 25% investment as an alternative 3 to EIR/EIS Project Description	Ali Forsythe, Laurie Warner Herson	RC & AB
Receive Final Federal Feasibility Report	Erin Heydinger, Jerry Brown	RC & AB
Closed Session		
Negotiations for real property (Facilities Use Agreements)	JP Robinette	RC & AB
Committees/Workgroups		
Section 404/401/408- Update on Application and Agency Discussions	aforsythe@sitesproject.org, John Spranza	Environmental Planning and Permitting
Update on TRR Design Considerations	Henry Luu	Land Management
ROE Update on Geotech	Kevin Spesert	Land Management
2021		
January 2021		
Advance Check Approval Policy - Annual Renewal	Joe Trapasso	AB
Approve Posting the RDEIR/SDEIS Project Description on the Authority's Website	aforsythe@sitesproject.org, John Spranza, Laurie Warner Herson	RC & AB
Placeholder: Preliminary Options for Second Cash Call	Joe Trapasso, JP Robinette	RC & AB
Review and Comment on Inventory of Risks and Benefits - related to water supply and service contract development	JP Robinette	RC & AB
Review and comment on Participants Debt Processes and Schedules - informs Plan of Finance development	JP Robinette	RC & AB
Confirm Final Operations Analysis for EIR/EIS/BA	Erin Heydinger	RC & AB
Committees/Workgroups		
Section 2081 and Biological Assessment - Agency Discussions and Effects Modeling Update	aforsythe@sitesproject.org, John Spranza	Environmental Planning and Permitting
Biological Assessment - Initial Desktop Findings	aforsythe@sitesproject.org, John Spranza	Environmental Planning and Permitting
EIR/EIS and BA Project Description with Operations	aforsythe@sitesproject.org, John Spranza, Laurie Warner Herson	Ad Hoc Env. Planning & Permitting
EIR/EIS Document Development - Progress Update	aforsythe@sitesproject.org, Laurie Warner Herson	Ad Hoc Env. Planning & Permitting
CDFW ITP and BA Technical Analysis Update	aforsythe@sitesproject.org, John Spranza	Ad Hoc Env. Planning & Permitting
EIR/EIS/BA Final Operations Analysis & Project Description with Operations	Ali Forsythe	Ad Hoc Operations & Engineering
Storage Policy Update - small group and full workgroup	Erin Heydinger	Ad Hoc Operations & Engineering

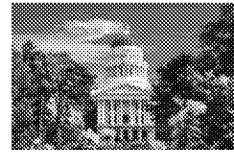
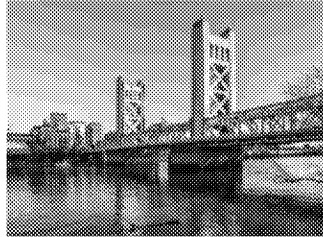
Primary	Assigned To	Governing Body
Review Federal Leg and Outreach 2021 Priorities	Kevin Spesert	Ad Hoc Legislative & Outreach
Review State Leg and Outreach 2021 Priorities	Kevin Spesert	Ad Hoc Legislative & Outreach
February 2021 (Joint Meeting)		
Conduct Elections - AB (Chair, Vice Chair, Secretary, Treasurer) and RC (Chair, Vice Chair)	Jerry Brown	RC & AB
Second Cash Call Approve Revised Amendment 2 Work Plan and updated Exhibit B (updated to include updated participation/revenue, plan of finance details) and Exhibit A (participation), Release Invoices for cash call 2 & Schedule Update	JP Robinette	RC & AB
Principles for Allocation of Risks and Benefits - related to water supply and service contract	JP Robinette	RC & AB
Credit Reimbursement Policy - contributed credit review	Joe Trapasso	RC & AB
Placeholder: Facilities Use Agreement Term Sheets, GCID and TCCA	JP Robinette	RC & AB
Committees/Workgroups		
BA & Section 2081 - Initial Findings and Mitigation - Construction and Operations	aforsythe@sitesproject.org, John Spranza	Ad Hoc Env. Planning & Permitting
Section 106 - Full Introductory Briefing	aforsythe@sitesproject.org, John Spranza	Ad Hoc Env. Planning & Permitting
Class IV Engineering Cost Estimate	Henry Luu	Ad Hoc Operations & Engineering
DSOD Application	Henry Luu	RC & AB

Sites Reservoir



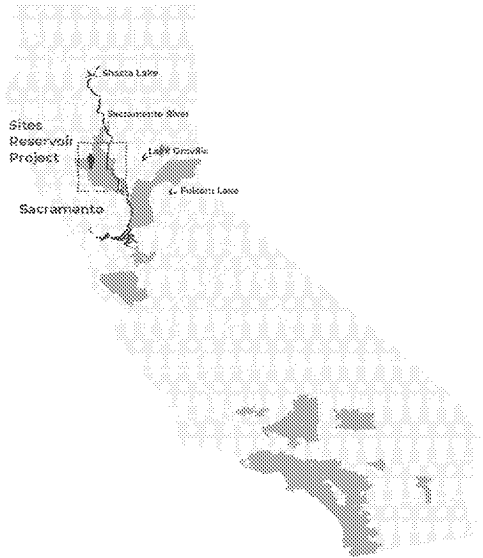
21st Century Solution to California's Water Reliability Challenges

Sites Reservoir is a generational opportunity to construct a multi-benefit water storage project that helps restore flexibility, reliability, and resiliency to our statewide water supply



Our Strength is in Our Broad Statewide Participation

Diverse statewide representation of public agencies advancing Sites Reservoir



Participants include
counties, cities, water
and irrigation districts

Urban and Rural

Sacramento Valley

San Joaquin Valley

Bay Area

Southern California



Our Strength is in Our Broad Statewide Participation

Sacramento Valley

Carter Mutual Water Company
City of American Canyon
Colusa County
Colusa County Water Agency
Cortina Water District
Davis Water District
Dunnigan Water District
Glenn County
Glenn-Colusa Irrigation District
LaGrande Water District
Placer County Water Agency
Reclamation District 108
City of Roseville
Sacramento County Water Agency
City of Sacramento
Tehama-Colusa Canal Authority
Westside Water District
Western Canal Water District

Bay Area

Santa Clara Valley Water District
Zone 7 Water Agency

San Joaquin Valley

Wheeler Ridge-Maricopa Water Storage
District

Southern California

Antelope Valley - East Kern Water Agency
Coachella Valley Water District
Desert Water Agency
Metropolitan Water District
San Bernardino Valley Municipal Water District
San Geronio Pass Water Agency
Santa Clarita Valley Water Agency



Rightsized to Meet Our Current and Future Water Supply Needs

Sites Reservoir has been designed and optimized to meet our water supply needs for today and in the future

The Sites Project Authority conducted a rigorous Value Planning effort to review the project's proposed operations and facilities to develop a project that is "right sized" for our investors and participants while still providing water supply reliability and enhancing the environment

Rightsizing the reservoir was responsive to input from state and federal agencies, NGOs, elected officials, landowners and local communities

The feedback we received through a robust outreach effort was critical to developing a reservoir that is the right size for both people and the environment

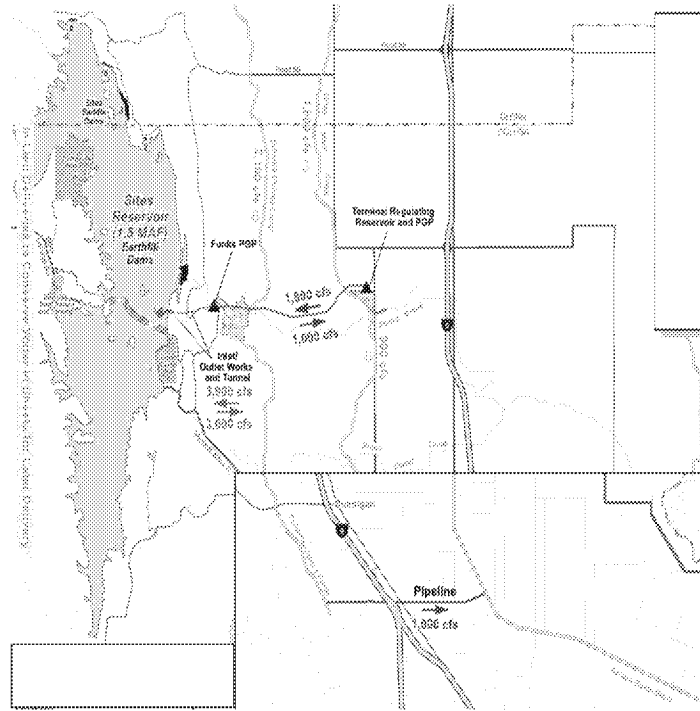


Rightsized to Meet Our Current and Future Water Supply Needs

1.5 million acre-feet

Utilizes the existing Glenn-Colusa Irrigation District and Tehama-Colusa Canal Authority canals to convey water to Sites Reservoir from the Sacramento River

Delivers water back to the Sacramento River through the Tehama-Colusa Canal and through the Colusa Basin Drain for participant deliveries and for the environment



Rightsized to Meet Our Current and Future Water Supply Needs

Member	Reservoir Participation (AFY)
Public Water Agencies	
North of Delta	52,142
South of Delta	140,750
Subtotal Public Water Agencies	192,892
State of CA	~ 40,000
Total Requirement	~230,000

Participant Demand

Participant water subscriptions allocated in the current participation agreement

Allocation of State of California water subscription is based on the Proposition 1 water investment

- Water for Delta Smelt
- Water for Refuges

Release Capacity from Sites

The "rightsized" project can deliver water to meet the demands of our participants and California's investment of water for the environment

Long term average ~240,000 AFY

Year Type	1,000 cfs Release Capacity (AFY) to the Colusa Basin Drain
Wet	90 - 120
Above Normal	260 - 290
Below Normal	245 - 275
Dry	355 - 385
Critically Dry	210 - 240



Assumed Diversion and Operations Criteria

Location	Criteria
Wilkins Slough Bypass Flow	8,000 cfs April/May 5,000 cfs all other times
Fremont Weir Notch	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 5%
Flows into the Sutter Bypass System	No restriction due to flow over Moulton, Colusa, and Tisdale Weirs
Freeport Bypass Flow	Modeled WaterFix Criteria (applied on a daily basis) Post-Pulse Protection (applied on a moving 7-day average) Post-Pulse (3 levels) = January–March Level 2 starts January 1 Level 1 is initiated by the pulse trigger
Net Delta Outflow Index (NDOI) Prior to Project Diversions	44,500 cfs between March 1 and May 31



Assumed Release Criteria

Most releases occur in dry years for water supply and environmental benefits

Priority of releases assume the following:

- Provide water to project participants north and south of the delta
- Provide water to Cache Slough area via Yolo bypass
- Provide water for incremental Level 4 refuge deliveries
- Support Reclamation goals through exchanges

Deliveries to SWP contractors supplement Table A (start @ 85% allocation and more aggressive releases starting @ 65%)



Rightsized to Meet Our Current and Future Water Supply Needs

The Value Planning process has resulted in a project that has a smaller footprint and operated in a different manner than originally designed

Due to these changes the Authority will revise and recirculate its Draft EIR

Work with landowners, tribes, stakeholders, NGOs, and local communities to develop a collaborative environmental review process

It is essential that we build a project now that makes sense for all our participants – local, state, and federal



Rightsized to Meet Our Current and Future Water Supply Needs

Reservoir Size (MAF)	1.5
Project Cost (2019\$, billions)	\$2.4 - \$2.7
Contingency Cost (2019\$, billions)	\$0.6
Total Project Cost (2019\$, billions)	\$3.0 - \$3.3
Annualized AFY release	240,000
Range of Annual Costs During Repayment Without WIFIA Loans (2020\$, \$/AF)	\$650 - \$710
Range of Annual Costs During Repayment With WIFIA Loans (2020\$, \$/AF)	\$600 - \$660

The rightsized project is roughly **\$2 Billion less** than the 2017 preferred alternative

Cost savings primarily from the removal of the Delevan Diversion facility on the Sacramento River and the Delevan Pipeline

Lowered the Annual Cost during repayment (\$/AF)

Significant savings to participants with finance through a WIFIA government backed loan



Provides Statewide Benefits for Generations to Come

Sites Reservoir provides many multi-layered benefits



Off-stream Storage

Does not create a barrier to native fish migration



Federal and State Agencies Manage Environmental Water

Adaptable to current and future conditions and priorities



Local Leadership and Cooperation

Aligns with Sacramento Valley's values and fosters regional and statewide collaboration



Cooperative Operation

Increases effectiveness and efficiency of existing water storage infrastructure



Adaptable to Climate Change

Contributes to system reliability and performance with climate change



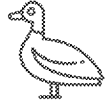
Dry Year Water Supply

Reliable dry year water supply for California communities, farms and businesses



Recreational Opportunities

Provides northern Sacramento Valley with additional opportunities for recreation



Environmental Support

Provides environmental water in drier periods for native fish, and habitat for native species and birds



Provides Statewide Benefits for Generations to Come

Sites Reservoir provides water dedicated to environmental use

A significant portion of the Sites Reservoir Project's annual water supplies will be dedicated to environment uses:

Preserve cold-water pool in Lake Shasta later into the summer months to support salmon development, spawning and rearing

Provide a reliable supply of refuge water to improve Pacific Flyway habitat for migratory birds and other native species

Provide water dedicated to help improve conditions for the Delta Smelt

Water dedicated for the environment provided by Sites Reservoir will be managed by state resources agency managers who will decide how, and when, this water would be used - creating a water asset for the state that does not currently exist



Possibilities of Environmental Water Uses

Member	Reservoir Participation (AFY)
Public Water Agencies	
North of Delta	52,142
South of Delta	140,750
Subtotal Public Water Agencies	192,892
State of CA	~ 40,000
Total Requirement	~230,000

Sites creates a resource that can be managed for the benefit of the species.

Water for the environment is managed by state resource agencies.



There is flexibility to manage these benefits each year.

The range of possibilities will be covered in the recirculated Draft EIR.



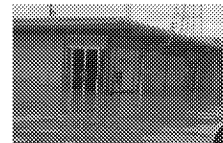
Provides Statewide Benefits for Generations to Come

Sites Reservoir provides regional flood protection benefits

Provides significant regional flood protection benefits for the Sacramento Valley

Will capture and store flood flows that would normally impact the community of Maxwell - protecting homes, business and farms

Will help to limit "down stream" flooding issues by capturing storm flows that sometimes overwhelm the regions flood control facilities



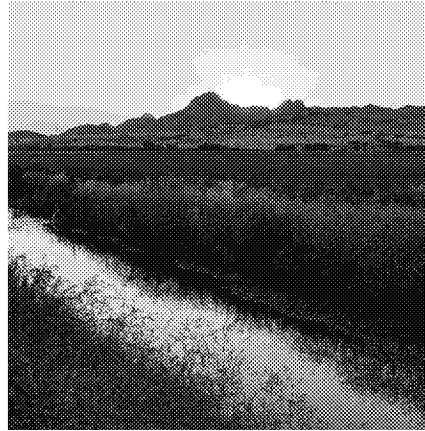
Provides Statewide Benefits for Generations to Come

Sites Reservoir will benefit the local and regional economy

Create hundreds of construction-related jobs during each year of the construction period, and long-term jobs related to operations

Creates new recreation opportunities in the Sacramento Valley which adds to the region's economy

Adding resiliency to the water supply will strengthen the statewide economy and business that rely on a reliable source of water for their operations – particularly agriculture



We are On-Track to Deliver This Vital Project for the People of California

Key Milestones Through 2021

Meet eligibility requirements under Prop 1 (WSIP) in order to access the remainder of the \$816 Million in funding

Recirculate Draft EIR for public comment, proactively engage stakeholders, develop responses to comments to support environmental feasibility determination

Complete Feasibility Report

Secure environmental permit certainty and draft permit applications

Update and refine cost estimate and affordability analysis

Develop Plan of Finance

Improve definition of SWP/CVP exchange, including Operations Plan

Enhance landowner, stakeholder & NGO engagement

Develop Operating Agreement Term Sheets with: DWR, USBR, TCCA, GCID, CBD Authority



Groundwater Considerations

Primary Area for Possible Groundwater Interactions

Near the Sites Reservoir footprint

Funks Creek & Stone Corral Creek

Terminal Regulating Reservoir (TRR) near the GICD Canal

Colusa Basin Drain in the Dunnigan area



Groundwater Consideration

Groundwater Effects Analysis



Some areas within the local basin will benefit

Quantity and quality of groundwater could be improved

Limited micro effects still need to be analyzed

All other effects are less than significant



Questions

 **Sites**

From: Megan Misuraca [mmisuraca@rrbwsd.com]
Sent: 10/30/2020 10:41:21 AM
To: Marcia Kivett [MKivett@sitesproject.org]; Eric Averett [eaverett@rrbwsd.com]
CC: Jerry Brown [jbrown@sitesproject.org]
Subject: RE: Sites Project Second Amendment to the 2019 Project Agreement
Attachments: 2020-10-26 agr. Second Amendment to 2019 Reservoir Project Agreement- Sites Project Authority.pdf

Good morning Marcia,

Attached is the executed Second Amendment to the 2019 Sites Reservoir Project Agreement. Please forward a fully executed copy upon completion.

Thank you,

Megan Misuraca



Ph (661) 589-6045 Fax (661)-589-1867

849 Allen Road
Bakersfield, CA 93314
<http://www.rrbwsd.com/>

From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Monday, October 26, 2020 10:23 AM
To: Eric Averett <eaverett@rrbwsd.com>
Cc: Megan Misuraca <mmisuraca@rrbwsd.com>; Jerry Brown <jbrown@sitesproject.org>
Subject: Sites Project Second Amendment to the 2019 Project Agreement

Mr. Averett,

Attached is the Second Amendment to the 2019 Sites Reservoir Project Agreement ready for your signature on page 6 (S1). Please also fill out the date, title, Participation (Annualized Acre-Foot) and Cost. We accept electronic signatures.

Let us know if you have any questions. Welcome to the team.

I will work with Megan on an on-boarding call with you and Jerry.

Thank you.

Marcia Kivett
Sites Project Admin
Phone: 561.843.9740
Email: mkivett@sitesproject.org
Web: www.SitesProject.org

P.O. Box 517
122 Old Hwy 99W
Maxwell, CA 95955

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Thursday, October 22, 2020 8:51 AM
To: Eric Averett <eaverett@rrbwsd.com>
Cc: Marcia Kivett <MKivett@sitesproject.org>
Subject: Re: Sites Project Participation Letter of Intent

Eric – The Authority and the Reservoir Committee have approved RRBWSD’s participation in Sites at the requested 500af. I’ll get the signature pages we need from you put together and send them over shortly.

Would you like me to schedule an on-boarding discussion? My hope is to get you involved and make the December Reservoir Committee your 1st official meeting attendance.

Jerry

From: Jerry Brown <jbrown@sitesproject.org>
Date: Thursday, October 1, 2020 at 11:10 AM
To: Eric Averett <eaverett@rrbwsd.com>
Subject: Re: Sites Project Participation Letter of Intent

Excellent, thanks Eric – I’ll get back to you after I get through my board process later this month.

From: Eric Averett <eaverett@rrbwsd.com>
Date: Thursday, October 1, 2020 at 10:54 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Sites Project Participation Letter of Intent

I already have authority/approval to execute-

Eric

From: Jerry Brown [<mailto:jbrown@sitesproject.org>]
Sent: Thursday, October 1, 2020 7:52 AM
To: Eric Averett <eaverett@rrbwsd.com>
Subject: Fwd: Sites Project Participation Letter of Intent

Eric – I’ve confirmed the current project agreement plus amendments sufficiently covers new participants. All of these documents are on the portal site (<https://brwncald-my.sharepoint.com/:f/p/jrobinette/Epm9iMLcDwNOhIMc2840b6EBFm-igGMQPzc-HU2pCxovcQ?e=Z6687k>). I need to get my board’s approval to execute that agreement with you which I will be doing later this month. What do you expect your timing to be?

Jerry

From: Jerry Brown <jbrown@sitesproject.org>
Date: Friday, September 18, 2020 at 4:47 PM
To: Eric Averett <eaverett@rrbwsd.com>
Subject: Re: Sites Project Participation Letter of Intent

Eric – The Sites Authority Board met yesterday and was very appreciative of your letter of intent. I’d like to proceed so we can hopefully get to a “ready to sign agreement” by October 16 (next Sites bd meeting date, we need to coordinate on your timing too). I’m checking on the documents to make sure our current project agreement properly covers the “new participant” situation and will let you know on that early next week hopefully. Have a great weekend.

From: Eric Averett <eaverett@rrbwsd.com>
Date: Tuesday, September 15, 2020 at 10:58 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: FW: Sites Project Participation Letter of Intent

Jerry,

As a follow-up to our prior discussion, please find a letter of intent for Rosedale’s participation in the sites project.

Eric

From: Megan Misuraca
Sent: Tuesday, September 15, 2020 10:51 AM
To: Eric Averett <eaverett@rrbwsd.com>
Subject: Sites Project Participation Letter of Intent

Eric,

Attached is the executed Letter of Intent for Participation in the Sites Project.

Thank you,

Megan Misuraca



Ph (661) 589-6045 Fax (661)-589-1867

849 Allen Road

Bakersfield, CA 93314

<http://www.rrbwsd.com/>

SECOND AMENDMENT TO 2019 RESERVOIR PROJECT AGREEMENT

BY AND AMONG
SITES PROJECT AUTHORITY

and

THE PROJECT AGREEMENT MEMBERS LISTED HEREIN

Dated as of July 1, 2020

THIS SECOND AMENDMENT TO 2019 RESERVOIR PROJECT AGREEMENT (this “Second Amendment”), dated as of July 1, 2020, by and among SITES PROJECT AUTHORITY, a joint powers authority duly organized and existing under the laws of the State of California (the “Authority”), and the project agreement members listed in the Agreement referenced below (the “Project Agreement Members”) and amends that certain 2019 Reservoir Project Agreement dated as of April 1, 2019 (the “Original Agreement”), as previously amended by the First Amendment to 2019 Reservoir Project Agreement dated as of January 1, 2020 (the “First Amendment” and, together with the Original Agreement, the “Agreement”), each by and among the Authority and the Project Agreement Members;

WITNESSETH:

WHEREAS, Authority and the Project Agreement Members have determined to approve an Amendment 2 Work Plan and to extend the term of the Agreement to December 31, 2021; and

WHEREAS, under Section 11 of the Agreement, the Agreement may be amended by a writing executed by the Authority and at least 75% of the total weighted vote of the then current Committee members as provided in Subsection 3(g); and

WHEREAS, all acts, conditions and things required by law to exist, to have happened and to have been performed precedent to and in connection with the execution and the entering into of this Second Amendment do exist, have happened and have been performed in regular and due time, form and manner as required by law, and the parties hereto are now duly authorized to execute and enter into this Second Amendment;

NOW, THEREFORE, THIS SECOND AMENDMENT WITNESSETH, the Authority and the Project Agreement Members agree, as follows:

ARTICLE I

DEFINITIONS

Section 1.01. **Definitions.** All capitalized terms not otherwise defined herein shall have the meaning set forth in the Agreement.

ARTICLE II

AMENDMENTS TO AGREEMENT

Section 2.01. **Project Agreement Members.**

(a) Effective September 1, 2020, the Project Agreement Members attached as Exhibit A to the Agreement shall be succeeded in their entirety by the Project Agreement Members attached hereto as Exhibit A.

Section 2.02. **Work Plan.**

(a) Effective September 1, 2020, the 2019 Work Plan attached as Exhibit B to the Agreement shall be supplemented by the Work Plan attached hereto as Exhibit B (the “Amendment 2 Work Plan”).

Section 2.03. **Funding.**

The Agreement is hereby amended to remove Section 4(a) in its entirety and replace it with the following:

“(a) **Budget.** The Committee shall, in cooperation with the Authority’s Board, provide and approve both a Fiscal Year operating budget and reestablish a Phase 2 budget target, annually or more frequently as needed. The Project Agreement Members shall contribute their respective pro-rata share of the budgeted sums reflected in the 2019 Work Plan (prior to November 1, 2020) and the Amendment 2 Work Plan (on and after November 1, 2020) in accordance with Section 5 of this Project Agreement; provided, however, that in no event shall the amount paid by a Project Agreement Member exceed \$160 per acre-foot (with \$60 of such amount being attributable to the 2019 Work Plan and \$100 of such amount being attributable to the Amendment 2 Work Plan) without the approval of such Project Agreement Member. The contribution with respect to the pro-rata budgeted sums reflected in the Amendment 2 Work Plan shall be payable by each Project Agreement Member in two installments. The first installment shall be in an amount equal to \$60 per acre-foot and shall be payable by no later than November 1, 2020. The second installment shall be in an amount up to \$40 per acre-foot and shall be payable by no later than April 1, 2021. The exact amount per acre-foot of the second installment shall be established by the Committee, in cooperation with the Authority’s Board, and notice of such amount shall be provided by the Authority to each Project Agreement Member.”

Section 2.04. **Future Development of the Sites Reservoir Project.**

The Agreement is hereby amended to remove Section 6(b) in its entirety and replace it with the following:

“(b) Without limiting the foregoing, any Project Agreement Member that elects to continue participating in the development, financing, and construction of the Sites Reservoir Project to the time when the Authority offers contracts for a water supply or other services, will be afforded a first right, equal to that Project Agreement Member’s Participation Percentage, to contract for a share of any water supply that is developed, and for storage capacity that may be available from, the Sites Reservoir Project. In any successor phase agreements, Project Agreement Members who are parties to this Project Agreement that submitted a proposal to participate before February 28, 2019, shall be granted rights to contract for a share, in an amount equal to that Project Agreement Member’s Participation Percentage as of the effective date of such successor phase agreement, of any water supply that is developed, and for storage capacity that may be available from the Sites Reservoir Project prior to the rights of those becoming parties to this Project Agreement after that date.

If a participating Project Agreement Member as of February 28, 2019 identifies a lesser amount in the Second Amendment than its Original Agreement requested amount, that participating Project Agreement Member’s first rights of refusal in the future are to be based on the Second Amendment amounts and not the February 28, 2019 amounts.

Provided, however, that if a Project Agreement Member withdraws from the Project Agreement pursuant to Section 9 of this Agreement but later requests to be reinstated, then to the extent there is unsubscribed participation in the Project as determined by the Committee, the

Committee may vote to readmit said withdrawn Member with a reinstated first right of refusal provided said withdrawing Member provides funding to the Project commensurate with the funding requirements met by all current Project Agreement Members in the current phase of the Project as well as any prior phase, as adjusted for any credits, payments and/or reimbursements made under the Authority's credit reimbursement policy (the "Credit Reimbursement Policy").

Further provided, that if a Project Agreement Member desires to increase its participation after execution of the Second Amendment, then to the extent there is unsubscribed participation in the Project as determined by the Committee, the Committee may vote to approve said increase, or portion thereof, with a first right of refusal attendant thereto, provided said increasing Project Agreement Member provides funding to the Project commensurate with the funding requirements met by all current Project Agreement Members in the current phase of the Project as well as any prior phase, as adjusted for any credits, payments and/or reimbursements made under the Credit Reimbursement Policy.

The Authority and the Project Agreement Members will cooperate on the drafting of provisions in the water supply contract that will allow a Project Agreement Member or other eligible entity that commits to purchase a Sites Reservoir Project water supply to transfer water that the entity may not need from time to time on terms and conditions acceptable to the Project Agreement Member."

Section 2.05. **Term.** The Agreement is hereby amended to remove Section 8(b) in its entirety and replace it with the following:

"(b) The term of this Project Agreement shall continue until December 31, 2021. In the event that this Second Amendment is not approved by Project Agreement Members with the requisite percentage of the total weighted vote as set forth in the Agreement by June 30, 2020, the Agreement shall be revived immediately upon approval by such requisite percentage, without any additional approval of the Project Agreement Members, and this Second Amendment shall become effective."

Section 2.06. **Executive Director.** All references to the "General Manager" in the Agreement shall be changed to "Executive Director."

ARTICLE III

PROJECT AGREEMENT MEMBER PARTICIPATION

Section 3.01. **Project Agreement Participation.** Each Project Agreement Member shall specify its participation in the Sites Reservoir Project by indicating its elected water participation amount in the Sites Reservoir Project and the associated cost in the space provided therefor on the signature page to this Second Amendment. Based upon the respective participation elections of the Project Agreement Members, the Authority shall update Exhibit A pursuant to Section 5 of the Agreement.

ARTICLE IV

MISCELLANEOUS

Section 4.01. **Effectiveness of Agreement.** Except as expressly amended by this Second Amendment, the Agreement is hereby ratified and confirmed and shall continue in full force and effect in accordance with the terms and provisions thereof. The amendments set forth in this Second Amendment shall be incorporated as part of the Agreement upon their effectiveness in accordance with Section 11 of the Agreement.

Section 4.02. **Execution in Several Counterparts.** This Second Amendment may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the Authority and the Project Agreement Members shall preserve undestroyed, shall together constitute but one and the same instrument.

Section 4.03. **Authorization, Ratification and Confirmation of Certain Actions.** The Authority and the Project Agreement Members each hereby authorize, ratify and confirm the extension of the term of the Agreement, as previously extended pursuant to the First Amendment, to June 30, 2020, and the expenditure of funds collected under the Agreement with respect to the 2019 Work Plan on and prior to June 30, 2020.

Section 4.04. **Laws Governing Second Amendment.** The effect and meaning of this Second Amendment and the rights of all parties hereunder shall be governed by, and construed according to, the laws of the State.

IN WITNESS WHEREOF, the Authority and Project Agreement Members hereto, pursuant to resolutions duly and regularly adopted by their respective governing bodies, have caused their names to be affixed by their proper and respective officers on the date shown below:

Dated: _____

SITES PROJECT AUTHORITY

By: _____

Name:

Title:

[PROJECT AGREEMENT MEMBER]

Dated: 10/26/2020

ROSEDALE-RIO BRAVO WSD

(Authority & Project Agreement Member)

By:  _____

Name: Eric Averett

Title: General Manager

PARTICIPATION AMOUNT

[PROJECT AGREEMENT MEMBER] hereby elects to participate in the Sites Reservoir Project in the amount and at the cost identified below.

**Participation
(Second Amendment
Annualized Acre-Foot): 500 Acre-Feet**

**Second Amendment Cost: \$60 per Acre-Foot
Not to Exceed \$100 per
Acre-Foot**

EXHIBIT A

PROJECT AGREEMENT MEMBERS

Participant	Participation	
	Preliminary	Percent
American Canyon, City of		
Antelope Valley-East Kern Water Agency		
Carter Mutual Water Company #		
Coachella Valley Water District		
Colusa County		
Colusa County Water District		
Cortina Water District		
Davis Water District		
Desert Water Agency		
Dunnigan Water District		
Glenn-Colusa Irrigation District		
Irvine Ranch Water District		
LaGrande Water District		
Metropolitan Water District of S. CA		
Pacific Resources Mutual Water Company #		
Reclamation District 108		
Rosedale-Rio Bravo Water Storage District		
San Bernardino Valley Municipal Water District		
San Geronio Pass Water Agency		
Santa Clara Valley Water District		
Santa Clarita Valley Water Agency		
Westside Water District		
Wheeler Ridge-Maricopa Water Storage District		
Zone 7 Water Agency		

Total:

Participation Percentages exclude State of California and United States Bureau of Reclamation share of the Project.

Denotes a non-public agency. Refer to California Corporations Code Section 14300 et. seq. with additional requirements provided in both the Public Utilities Code and Water Code.

EXHIBIT B
AMENDMENT 2 WORK PLAN

Exhibit B
Reservoir Committee
2020 and 2021 Work Plan

Reservoir Committee Annual Budget for FY 2020 and FY 2021 (\$000)

	Subject Area	2020	2021	Total
Revenue	Beginning Balance	\$6,847	\$0	\$6,847
	Participation Revenue	\$11,520	\$7,680	\$19,200
	Federal Revenue	\$0	\$4,000	\$4,000
	State Revenue	\$5,134	\$5,502	\$10,636
Revenue Total		\$23,501	\$17,182	\$40,683
Expenses	Permitting	(\$2,558)	(\$5,011)	(\$7,569)
	Early Mitigation	(\$243)	(\$2,257)	(\$2,500)
	Environmental Planning	(\$3,511)	(\$2,376)	(\$5,887)
	Operations Modeling	(\$3,486)	(\$536)	(\$4,022)
	Engineering	(\$4,360)	(\$2,180)	(\$6,540)
	Geotechnical	(\$1,142)	(\$2,003)	(\$3,145)
	Real Estate	(\$145)	(\$272)	(\$417)
	Communications	(\$489)	(\$579)	(\$1,068)
	Project Controls	(\$1,333)	(\$1,528)	(\$2,861)
	Funding	(\$777)	(\$590)	(\$1,367)
	Growth	(\$819)	(\$910)	(\$1,729)
	Management	(\$461)	(\$1,219)	(\$1,681)
Support	(\$248)	(\$388)	(\$636)	
Expenses Total		(\$19,573)	(\$19,848)	(\$39,422)
Grand Total		\$3,928	(\$2,666)	\$1,261

Annual expense budgets are based on the projected spend rate for the Amendment 1B and Amendment 2 work plans combined (Pg 2 and 3).

Amendment 1B Budget by Month (\$000s)

Reservoir Committee Work Plan Summary

Subject Area	Jan 20	Feb 20	Mar 20	Apr 20	May 20	Jun 20	Jul 20	Aug 20	Total
Revenue									
Beginning Balance*	\$6,847								\$6,847
Participation Revenue									\$0
Federal Revenue									\$0
State Revenue	\$3,300								\$3,300
Revenue Sum	\$10,147								\$10,147
Expenses									
Environmental Planning	(\$269)	(\$245)	(\$269)	(\$269)	(\$245)	(\$257)	\$0	\$0	(\$1,555)
Operations Modeling	(\$519)	(\$472)	(\$355)	(\$220)	(\$116)	(\$85)	(\$55)	(\$53)	(\$1,876)
Engineering	\$0	(\$151)	(\$237)	(\$239)	(\$247)	(\$272)	(\$248)	(\$205)	(\$1,600)
Geotechnical	\$0	\$0	(\$27)	(\$118)	(\$107)	(\$118)	(\$118)	(\$113)	(\$601)
Real Estate	(\$7)	(\$6)	(\$7)	(\$7)	(\$6)	(\$7)	(\$7)	(\$7)	(\$55)
Communications	(\$38)	(\$35)	(\$38)	(\$38)	(\$35)	(\$38)	(\$38)	(\$36)	(\$297)
Project Controls	(\$255)	(\$77)	(\$85)	(\$85)	(\$77)	(\$85)	(\$85)	(\$81)	(\$828)
Funding	(\$74)	(\$109)	(\$120)	(\$121)	(\$104)	(\$61)	(\$37)	(\$35)	(\$661)
Growth	(\$93)	(\$84)	(\$93)	(\$93)	(\$84)	(\$93)	(\$93)	(\$88)	(\$719)
Management	\$0	\$0	\$0	(\$1)	(\$23)	(\$25)	(\$9)	\$0	(\$58)
Support	(\$15)	(\$14)	(\$15)	(\$15)	(\$14)	(\$15)	(\$15)	(\$15)	(\$120)
Expense Sum	(\$1,271)	(\$1,194)	(\$1,247)	(\$1,206)	(\$1,039)	(\$1,056)	(\$765)	(\$633)	(\$8,370)

*Adjusted from value published in work plan based on 2019 close-out

Amendment 2 Budget by Month (\$000s)

Reservoir Committee Work Plan Summary

Subject Area	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Oct 21	Sep 21	Nov 21	Dec 21	Total
Revenue																	
Participation Revenue			\$11,520					\$7,680									\$19,200
Federal Revenue							\$2,000				\$2,000						\$4,000
State Revenue			\$1,834			\$1,834						\$1,834			\$1,834		\$7,336
Revenue Total			\$13,354			\$1,834	\$2,000	\$7,680			\$2,000	\$1,834			\$1,834		\$39,536
Expenses																	
Permitting	(\$253)	(\$577)	(\$1,023)	(\$705)	(\$525)	(\$525)	(\$584)	(\$471)	(\$419)	(\$448)	(\$295)	(\$309)	(\$295)	(\$295)	(\$613)	(\$232)	(\$7,569)
Early Mitigation	\$0	\$0	(\$113)	(\$131)	(\$119)	(\$119)	(\$136)	(\$131)	(\$119)	(\$235)	(\$231)	(\$242)	(\$231)	(\$231)	(\$220)	(\$242)	(\$2,500)
Environmental Planning	(\$488)	(\$512)	(\$442)	(\$513)	(\$474)	(\$474)	(\$218)	(\$71)	(\$65)	(\$71)	(\$61)	(\$62)	(\$216)	(\$42)	(\$343)	(\$279)	(\$4,332)
Operations Modeling	(\$621)	(\$680)	(\$232)	(\$78)	(\$71)	(\$71)	(\$81)	(\$72)	(\$43)	(\$48)	(\$46)	(\$48)	(\$11)	(\$46)	\$0	\$0	(\$2,146)
Engineering	(\$1,134)	(\$768)	(\$398)	(\$461)	(\$108)	(\$185)	(\$355)	(\$292)	(\$221)	(\$190)	(\$161)	(\$186)	(\$155)	(\$155)	(\$147)	(\$25)	(\$4,941)
Geotechnical	(\$52)	(\$54)	(\$61)	(\$374)	(\$346)	(\$461)	(\$513)	(\$134)	(\$124)	(\$172)	(\$42)	(\$44)	(\$42)	(\$42)	(\$40)	(\$42)	(\$2,544)
Real Estate	(\$23)	(\$24)	(\$20)	(\$24)	(\$21)	(\$25)	(\$25)	(\$24)	(\$21)	(\$24)	(\$23)	(\$24)	(\$23)	(\$23)	(\$21)	(\$24)	(\$362)
Communications	(\$48)	(\$50)	(\$43)	(\$50)	(\$46)	(\$46)	(\$52)	(\$50)	(\$46)	(\$50)	(\$48)	(\$50)	(\$48)	(\$48)	(\$46)	(\$50)	(\$771)
Project Controls	(\$126)	(\$132)	(\$114)	(\$132)	(\$120)	(\$120)	(\$138)	(\$132)	(\$120)	(\$132)	(\$126)	(\$132)	(\$126)	(\$126)	(\$120)	(\$132)	(\$2,033)
Funding	(\$29)	(\$30)	(\$26)	(\$30)	(\$64)	(\$66)	(\$76)	(\$73)	(\$66)	(\$71)	(\$29)	(\$30)	(\$29)	(\$29)	(\$28)	(\$30)	(\$706)
Growth	(\$25)	(\$26)	(\$23)	(\$26)	\$0	\$0	(\$38)	(\$36)	(\$33)	(\$36)	(\$35)	(\$154)	(\$146)	(\$146)	(\$139)	(\$148)	(\$1,010)
Management	(\$101)	(\$106)	(\$91)	(\$106)	(\$96)	(\$96)	(\$110)	(\$106)	(\$96)	(\$106)	(\$101)	(\$106)	(\$101)	(\$101)	(\$96)	(\$106)	(\$1,623)
Support	(\$32)	(\$34)	(\$29)	(\$34)	(\$31)	(\$31)	(\$35)	(\$34)	(\$31)	(\$34)	(\$32)	(\$34)	(\$32)	(\$32)	(\$31)	(\$34)	(\$516)
Expenses Total	(\$2,994)	(\$3,294)	(\$2,310)	(\$2,360)	(\$2,010)	(\$2,214)	(\$2,262)	(\$1,634)	(\$1,494)	(\$1,318)	(\$1,230)	(\$1,422)	(\$1,454)	(\$1,314)	(\$1,246)	(\$1,243)	(\$31,312)

CDFW Terrestrial- Sites Re-start Meeting Notes



Date: October 28, 2020

Location:

[Join Microsoft Teams Meeting](#)

+1 213-493-7443 United States, Los Angeles (Toll)
Conference ID: 921 135 958#

Time: 1:00 pm – 2:30 pm

Purpose: To re-initiate discussions with CDFW on the Sites Reservoir project, and provide background information to new CDFW staff.

Attendees:

Juan Torres, CDFW
Ian Boyd, CDFW
Ian Caine, HDR

Zachary Kearns, CDFW
Ali Forsythe, Sites Authority

John Spranza, HDR
Monique Briard, ICF
Ellen Berryman, ICF

Agenda:

Discussion Topic	Topic Leader	Notes
1. Introductions/Safety/Admin	John Spranza	Went around the virtual room for introductions. Juan is the new CDFW supervisor/lead and Zachary may be taking over Ian B's role, but Ian B will stay involved through the transition for continuity.
2. Project Overview	John Spranza	John walked the group through PPT slides of the project and provided project description/background. Start of construction anticipated to begin in late 2023/early 2024.
3. 2019 CDFW meetings and decisions	Ellen Berryman	Ellen re-capped meetings with CDFW in 2019, focusing on issues relevant to the ITP.
4. Species List	Ellen Berryman	Ellen showed list from 2019 and explained that CTS was also considered but we determined no take because all the habitat is to the west of the project in Dunnigan area. Zachary reminded group that bald eagle is fully protected so it should come off the list for 2081. Need to add palmate-bracted bird's beak. We discussed adding western bumblebee and Crotch's bumblebee – these species are being addressed for Delta Conveyance Project on a habitat basis and they anticipate mitigation overlapping with other mitigation needs for the project – DCP model for bumblebees includes all grasslands. Juan suggested we look at narrowing model down to focus on floodplains. Action: ICF will look into refining bumblebee models.
5. Habitat Model Overview (refine bumblebee model)	Ellen Berryman	Ellen gave brief overview of models and showed the detailed write-up ICF did in 2019 for GGS. Ian said he remembers reviewing and may have already provided feedback on latest draft.

	<p>Action: Ellen will re-distribute the GGS write-up for CDFW to do a final review and make sure they're comfortable with the approach before ICF completes the model write-ups for the remainder of the species. CDFW will provide feedback soon after receiving.</p>
<p>6. 1602</p>	<p>Together we looked at aerial imagery of an intermittent drainage to discuss where the line should be drawn for 1602 coverage. CDFW suggested looking at topo and basing it on how much of the vegetation we think is dependent on that drainage. Best to be conservative for the EIR and then maybe narrow it down later for 1602 when there's access to the property.</p>
<p>7. 2081 Approach (e.g., linking mitigation w/survey results)</p>	<p>Ellen Berryman</p> <p>We discussed the constraint of not having property access to do surveys and detailed ground truthing. Need for flexibility to allow mitigation to be adjusted in a streamlined fashion based on site surveys after the ITP is completed. We talked about project phasing, with some properties becoming available sooner than others. Juan expressed a willingness to work with us to find solutions.</p> <p>One ITP vs. two? The team agreed that there is no rush to make this decision at this point. Juan asked whether it needs to be resolved during CEQA – Monique answered that she didn't think so, but would check.</p> <p>We discussed developing a schedule that includes CDFW's continued involvement in the development of the permit applications that includes a review of the draft applications. The applications are scheduled to be submitted by the end of 2021.</p> <p>Action: Monique will look into CEQA issue on timing for resolving one vs two ITPs. That is, does the EIR need to specify one vs two?</p>
<p>8. Next steps</p>	<p>See action items above.</p> <p>Also:</p> <p>Action: Ellen will set up meeting for three to four weeks from now, to (1) initiate discussions related to the EIR; and (2) discuss models.</p> <p>Action: Other topics for future meetings include potential flow effects on bank swallow and cuckoo, and the 2081 approach (providing flexibility and one vs two ITPs).</p> <p>Action: John will confirm if the Revised EIR/Supplemental EIS schedule includes a review period for CDFW prior to public release in July 2021.</p>