
From: Marcia Kivett [MKivett@sitesproject.org]
Sent: 8/3/2020 7:32:25 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: FW: August 18th Water Storage Update for the Water and Environmental Task Force
Attachments: Sites_Overview PPT EBLC.pptx

Due to Gary on the 14th

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Monday, July 27, 2020 1:52 PM
To: Marcia Kivett <MKivett@sitesproject.org>
Subject: FW: August 18th Water Storage Update for the Water and Environmental Task Force

Please set a reminder for me to get Kevin a draft doc for him to polish by August 10. thanks

From: Gary Darling <gary@darlingh2o.com>
Date: Monday, July 27, 2020 at 11:58 AM
To: Jerry Brown <jbrown@sitesproject.org>, "Marguerite Patil (mpatil@ccwater.com)" <mpatil@ccwater.com>, Garth Hall <ghall@valleywater.org>
Cc: Lindy Lavender <lindy@eblcmail.org>, "mcintyre@dsrsd.com" <mcintyre@dsrsd.com>, "Bob Whitley (rdwhitley@mindspring.com)" <rdwhitley@mindspring.com>, Dave Requa <dave@requa.org>, Dave Richardson <drrichardson@woodardcurran.com>
Subject: August 18th Water Storage Update for the Water and Environmental Task Force

Greetings Jerry, Marguerite and Garth. Thanks for agreeing to present to our August 18 Water and Environmental Task Force meeting to bring our members up to speed on the reservoir projects that most impact the Bay Area water supplies. We expect that we will have great attendance (50 plus). The Zoom meeting will start promptly at 8:30 and each presenter will have 20 minutes to talk, then we will open it up to questions with a closing time of 10am.

Since 20 minutes is a pretty short timeframe for you to present and a desire by our team that you all cover similar territory we have the following suggestions on what to cover:

1. Brief project overview (location, size including water supply/storage benefits, schedule and cost)
2. Description of NET environmental benefits that will be used to convince NGOs to support your project and regulatory agencies to permit
2. Challenges to getting to construction including:
 - a. Strategies related to partnerships and funding at the local, state and federal levels
 - b. Strategy on avoiding, minimizing and then mitigating impacts to protected aquatic and terrestrial species in order to accelerate permitting & construction
 - c. Others?
3. Issues that the 3 projects can work together on (e.g.: state and federal funding and timing, regulatory agency priorities, editorials advocating public support, etc.)
4. What can the East Bay Leadership Water and Environmental Task Force do that would be helpful?

Timing:

1. Please provide a brief bio to myself and Lindy by the end of this week (August 31).
2. Please provide your PowerPoint to myself and Lindy by August 14th.

Please do not hesitate to reach out to me if you would like to discuss further. Thanks, Gary

Gary W. Darling

Darling H2O Consulting Inc.

925-382-4350

gary@darlingh2o.com

www.darlingh2o.com

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/3/2020 8:49:35 AM
To: Marc VanCamp [Vancamp@mbkengineers.com]; Anne Williams [williams@mbkengineers.com]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Follow up on Phase 1b water rights call

Thanks Marc.

John Spranza

D 916.679.8858 M 818.640.2487

From: Marc VanCamp [mailto:Vancamp@mbkengineers.com]
Sent: Wednesday, July 29, 2020 3:11 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Anne Williams <williams@mbkengineers.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: Follow up on Phase 1b water rights call

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 likely candidate at the Division of Water Rights is Erik Ekdahl. He will bring in who he feels needed which, unfortunately we can not control. The BOD member that would be productive is Sean McQuire. Ali should verify this if/when she speaks to David Guy. I did let David know that I made this suggestion.

All the best,

Marc Van Camp
vancamp@mbkengineers.com

MBKEngineers

455 University Avenue, Suite 100
Sacramento, CA 95825-6579
Voice: (916) 456-4400
Fax: (916) 456-0253
<http://www.mbkengineers.com>

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Wednesday, July 29, 2020 8:31 AM
To: Marc VanCamp <Vancamp@mbkengineers.com>; Anne Williams <williams@mbkengineers.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: Follow up on Phase 1b water rights call

Morning all,

Thanks for making time for a call yesterday, I have a few notes from our meeting.

- 1) SharePoint site link for water rights is here, please let me know if you have any access issues: <https://sitesreservoirproject.sharepoint.com/WaterRights/SitePages/Home.aspx>
- 2) The general thinking is that there would be enough information to still have a meeting with State Board staff in October (and maybe a Board member too). This would allow time to get the new water rights legal team under contract and up to speed.
- 3) An updated project description that has the general project features and operations would be needed for the meeting.
- 4) A brief highlight of changes from Alt D would be helpful as well.
- 5) Areas of discussion for the meeting could include:
 - a. Project Description/Changes from Alt D
 - b. Schedule
 - c. Water Routing
 - d. Project Benefits
 - e. CDFW Discussions and Coordination Activities
- 6) A discussion with David Guy would be potentially helpful as he has regular discussions with State Board members and may have some insight.
 - a. Ali to follow up or delegate this.

Lastly, I have a question for Marc and Anne, who should we be contacting to get the meeting on the books with the Board? Do you have any recommendations on who to talk to (and who not to)?

Feel free to revise the above items and send back around.

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: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/3/2020 8:53:15 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: Re: NGO

You're right. I'll talk to Ali about Cal Trout and Trout Unlimited in our next call to see what she thinks we should do. Will let you know the outcome. Thanks.

From: Marcia Kivett <MKivett@sitesproject.org>
Date: Monday, August 3, 2020 at 8:46 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: NGO

I do not see their names on the meeting invite, unless they are covered by a different individual under one of the organizations below.

- | | | |
|-------------------------------------|-----------------------|---|
| <input checked="" type="checkbox"/> | <input type="radio"/> | Mark Smith <mark@smithpolioygroup.com> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Mike Lynes' <mlynes@audubon.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'ewehr@gwdwater.org' |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Mark Biddlecomb' <mbiddlecomb@ducks.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Rachel Zwillinger' <rzwillinger@defenders.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Elizabeth Forsburg (eforsburg@tnc.org)' |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Altamirano, Juan' <jaltamirano@audubon.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Mark Hennelly' <mhennelly@calwaterfowl.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Jeanne Brantigan' <jbrantigan@tnc.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Ric Ortega' <rortega@gwdwater.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Jeff Volberg' <jvolberg@calwaterfowl.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Catherine Hickey' <chickey@pointblue.org> |
| <input checked="" type="checkbox"/> | <input type="radio"/> | 'Gary Link' <glink@ducks.org> |

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Monday, August 3, 2020 7:47 AM
To: Marcia Kivett <MKivett@sitesproject.org>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Re: NGO

Are we sure trout unlimited and cal trout were not part of the water for wetlands call (ie Mark Smith)?

I think we covered the other ones indirectly through the other calls we've had.

Once we sort out the trout people I think we're done with this first round. Second round would occur once we have modeling results. Please put a reminder for Nov 1 to ask me and Ali about scheduling meetings to discuss modeling results.

From: Marcia Kivett <MKivett@sitesproject.org>
Date: Thursday, July 30, 2020 at 8:15 AM
To: Jerry Brown <jbrown@sitesproject.org>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: NGO

Do you want me to start reaching out to past individuals who you have not met with?

Steve Rotherth - He was with American Rivers and recently started DWR as Chief of Division of Multiple Benefit Initiatives.

Richard Collins - Water and Power Law Group

Curtis Knight/Jacob Katz - CalTrout

Renee Henry - Trout Unlimited

Linda LaZotte - I know this is Valley Water, but she is on the list.

Delta Stewardship Council Staff - - need to check in if delta plan consistency is required per Randy Fiorini

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/3/2020 8:56:05 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Marcia Kivett [MKivett@sitesproject.org]
Subject: Re: NGO

Thanks Ali.

Marcia – Let's try for each one individually and invite Fritz to the meeting with Cal Trout as Ali suggests. Me and Ali to the Trout Unlimited meeting. Sometime this month would be okay.

From: Alicia Forsythe <aforsythe@sitesproject.org>
Date: Monday, August 3, 2020 at 8:53 AM
To: Jerry Brown <jbrown@sitesproject.org>, Marcia Kivett <MKivett@sitesproject.org>
Subject: RE: NGO

Jerry – Lets do CalTrout and Trout Unlimited separately than the wetlands folks. Their interest will be much more fishery focused. And CalTrout might actually be an interesting and possible supporter. I don't know enough about the two to know if we can group them together. In my work with TU on the San Joaquin River, they never really brought CalTrout into the room – or really mentioned them. But CalTrout is much more active in the Sac Valley than the San Joaquin.

If we only want to do one, I'd focus on CalTrout. They are very active in the Sacramento Valley. We may want to include Fritz as I think he is friends with some of them – at least I know he goes to trout days each year where CalTrout staff invite out certain Ag leaders to fish with their staff for the day.

Ali

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

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Cc: Alicia Forsythe <aforsythe@sitesproject.org>
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Linda LaZotte - I know this is Valley Water, but she is on the list.

Delta Stewardship Council Staff - - need to check in if delta plan consistency is required per Randy Fiorini

From: Robert Cheng [RCheng@cvwd.org]
Sent: 8/4/2020 11:00:23 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Permitting activity changes between Alt D and VP 7

Ali,

Thanks so much for the detailed explanation. I know that you have discussed these issues in the past and though it's not the first time that I've heard this, it is different when you are the one having to explain it. So, I appreciate your patience as I'm generating the message.

Your comment about the difficulty of permitting through the Wildlife Refuge area triggered my memory of a tour a few years back to view the proposed Delevan Pipeline alignment. Standing there at the refuge, it was hard to envision how the project would have been able to proceed without significant hurdles and environmental mitigation measures.

So, it sounds like there may not be a significant reduction in the cost associated with the planning efforts, and we might end up at the same point in time for the permitting process, but the revised project should be easier to permit and mitigate for. These are definitely significant changes for the good and I will try to relay this to the Board when I discuss this with them next week.

Thanks again for your help,
Robert

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, August 4, 2020 10:10 AM
To: Robert Cheng <RCheng@cvwd.org>
Subject: RE: Permitting activity changes between Alt D and VP 7

Yes, you are correct on all of this.

In general the process for an EIR/EIS is shown in the attached (included as a JPEG also in case you want to use it in your presentation) – it starts with scoping, then the Draft EIR/EIS is developed and released for public review, public review and comment, and then the Final EIR/EIS which responds to those public comments and makes any changes to the document. The final step is the agency decision / adoption.

For Alt D, we made it thru the Draft EIR/EIS and public comment period and were responding to comments. So we were about 70-ish percent of the way thru the process.

Now that we have so many changes to the project, we need to circle back to revise the Draft EIR/EIS and go back out for public comment. So we are about 30ish percent of the way thru the process.

This sounds like a step backwards – and it kinda is. However there were significant comments on the 2017 Draft EIR/EIS that were going to make it hard to finalize the document without major re-work. Revising and reissuing the document allows us to both reformulate for the revised project (VP7) but also address those previous comments, strengthen the document, and strengthen the record. These are all good things.

Under Amendment 2 we will prepare and release the Draft EIR/EIS, conduct the public comment period, and start drafting responses to comments. So at the end of Amendment 2 (end of calendar year 2021), we will be in the same place as we were with the prior document (about 70 ish percent done). We'll finish up the Final EIR/EIS and the agency decision / adoption in early 2022.

I will say that VP7 will be easier to permit than Alt D. The pumping plant on the Sacramento River under Alt D would have been very difficult to permit. And the Delevan pipeline crossed a major area of giant garter snake habitat but, more significantly, crossed the Delevan National Wildlife Refuge. There were significant concerns with impacts to refuge lands, species, and frankly, if the USFWS could even grant us a right / easement to cross their lands.

VP7 will have some effects to giant garter snake with the Dunnigan pipeline, but this pipeline is shorter and doesn't cross a National Wildlife Refuge. And there is no new pumping plant on the Sacramento River under VP7, which will be quite helpful in permitting.

In terms of cost savings – yes, we have to do more work to revise and re-issue the Draft EIR/EIS with VP7. However, we have less work in permitting the Delevan pipeline and pumping plant on the Sacramento River. Its hard to quantify the exact cost difference for permitting, but I would guess its about a wash. However, I do expect that we will also save money on mitigation as the Delevan facilities would have necessitated quite a bit of mitigation. We haven't quantified the mitigation cost savings, and we wouldn't expect it to be more than \$50M, so in the whole scheme of things, its likely not a huge cost savings. But it all adds up in the end to contribute to an overall savings.

I hope this helps. Happy to chat about all of this on the phone if that would help.

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: Robert Cheng <RCheng@cvwd.org>
Sent: Tuesday, August 4, 2020 7:58 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Permitting activity changes between Alt D and VP 7

Hi Aly,

I'm finishing my Board presentation for the Second Amendment, and I was hoping to get a bit more clarity on the changes in the permitting activities from the old project to the "right-sized" project. I think former permitting task was intended to finalize the EIR/EIS for the project (so I'm thinking it takes the process through the public comment period), for the 1.8 maf reservoir? Was this intended to meet the requirements for the Prop 1 and the WIIN Act funding? For the VP7 alternative, I believe that we are reducing the size of the reservoir to 1.5 maf and resubmitting the application for the EIR/EIS process, but only getting it to the public comment period which provides a bit of relief in terms of the work effort? I'm trying to paint a story of the significant cost-reduction measures that the Project has taken, and besides a change in the strategy of not pursuing the WIIN Act funding, I see the scaling back of the scope in the permitting process as being another meaningful step (but not jeopardizing our standing in the Prop 1 process). Any clarification that you might be able to provide would be very helpful.

Thanks,
Robert

From: Alicia Forsythe [aforsythe@sitesproject.org]
Sent: 8/5/2020 8:59:49 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: RE: Sites Project - Environmental Water Manager

Let me check with Kristal and John to see. I'll circle back shortly.

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: Marcia Kivett <MKivett@sitesproject.org>
Sent: Wednesday, August 5, 2020 8:47 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Project - Environmental Water Manager

Ali, is there any way to move this meeting from 1:00 to 4:00? We just asked Reclamation to move the bi-weekly meeting for the Ops & Engineering Workgroup meeting.

If not, then during your Tuesday call can you discuss an additional discussion with Jerry.

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Wednesday, August 5, 2020 8:42 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Marcia Kivett <MKivett@sitesproject.org>
Subject: Re: Sites Project - Environmental Water Manager

If we can make it work with schedules that would be fine. Do you know Josh Grover? Is he part of the conversation too? If schedules can't work for next Tuesday then you all can meet and we can schedule another discussion after.

Regarding cost reimbursement, I think they are getting interagency Prop 1 money to pay for their involvement on environmental benefits. Our contract should only need to cover staff performing EIR/permit work. Please confirm.

From: Alicia Forsythe <aforsythe@sitesproject.org>
Date: Wednesday, August 5, 2020 at 8:05 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: Re: Sites Project - Environmental Water Manager

Hey Jerry - John and I had a call with Kristal yesterday on their cost reimbursement. At the end of the call, she asked to set up a meeting to talk about the environmental benefits. We set this for next Tuesday. I was thinking this would be a pretty free flowing discussion and then we could structure and figure out next steps from there. Should I add you to this and we can talk with her next week?

Ali

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

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Wednesday, August 5, 2020 7:58:40 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: FW: Sites Project - Environmental Water Manager

I'm setting a meeting with you me Kristal and Josh to discuss bringing them into the Reservoir Committee activities and decision making. They need a seat at the table with the other investors.

Let discuss how/when to communicate this with the RC/AB at our next 1v1.

From: "Bonham, Chuck@Wildlife" <Chuck.Bonham@wildlife.ca.gov>
Date: Tuesday, August 4, 2020 at 3:47 PM
To: Jerry Brown <jbrown@sitesproject.org>
Cc: "Ortiz, Jan@Wildlife" <Jan.Ortiz@wildlife.ca.gov>, Marcia Kivett <MKivett@sitesproject.org>
Subject: RE: Sites Project - Environmental Water Manager

Contact Kristal Davis-Fadtke and Josh Grover.

Thanks.

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Tuesday, August 4, 2020 2:58 PM
To: Bonham, Chuck@Wildlife <Chuck.Bonham@wildlife.ca.gov>
Cc: Ortiz, Jan@Wildlife <Jan.Ortiz@wildlife.ca.gov>; Marcia Kivett <MKivett@sitesproject.org>
Subject: Sites Project - Environmental Water Manager

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Hi Chuck – I'm reaching out to you because I need a point person from your agency who can speak for the Agency in regard to managing the Prop 1 environmental water asset being acquired in the Sites Reservoir. We are formulating policies and designing our operations and I believe the environmental benefit manager needs to be at the table early to make the outcomes most successful which is what we all want to see happen.

Can you assign someone so I can reach out and get them engaged?

Thanks
Jerry

August 18, 2020

AMENDED 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, Chief Executive Officer

Melanie Richardson, Assistant Chief Executive Officer

Rachael Gibson, Interim Chief of External Affairs

Garth Hall, Interim Chief Operating Officer, Water Utility

Sue Tippets, Interim Chief Operating Officer, Watersheds

Stanly Yamamoto, District Counsel

Brian Hopper, Senior Assistant District Counsel

Anthony Fulcher, Senior Assistant District Counsel

Aaron Baker, Deputy Operating Officer, Raw Water Division

Don Rocha, Interim Deputy Administrative Officer, Office of Government Relations

Jerry De La Piedra, Interim Deputy Operating Officer, Water Supply Division

Heath McMahon, Deputy Operating Officer, Water Utility Capital Division

Christopher Hakes, Deputy Operating Officer, Dam Safety & Capital Delivery Division

Erin Baker, Asset Management Manager

Cindy Kao, Imported Water Manager, Imported Water Unit

Ryan McCarter, Pacheco Project Manager, Pacheco Project Delivery Unit

Charlene Sun, Treasury and Debt Manager

Metra Richert, Unit Manager, Water Supply Planning & Conservation Unit

Samantha Greene, Senior Water Resources Specialist, Water Supply Planning & Conservation Unit

An amended regular meeting of the Santa Clara Valley Water District (SCVWD) Water Storage Exploratory Committee is to be held on **Friday, August 21, 2020, at 12:00 p.m.** Join Zoom Meeting <https://valleywater.zoom.us/j/98473736757>

Enclosed are the meeting agenda and corresponding materials. Please bring this packet with you to the meeting.

Enclosures



Join Zoom Meeting

<https://valleywater.zoom.us/j/98473736757>

Meeting ID: 984 7373 6757

One tap mobile

+16699009128,,98473736757# US (San Jose)

Dial by your location

+1 669 900 9128 US (San Jose)



Santa Clara Valley Water District Water Storage Exploratory Committee Meeting

Teleconferencing Via Zoom

AMENDED REGULAR MEETING AGENDA

**Friday, August 21, 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 I. 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

GLENN 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**

**AMENDED REGULAR MEETING
AGENDA**

Friday, August 21, 2020

12:00 PM

Teleconferencing 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. CALL TO ORDER

Join Zoom Meeting

<https://valleywater.zoom.us/j/98473736757>

Meeting ID: 984 7373 6757

One tap mobile

+16699009128,,98473736757# US (San Jose)

Dial by your location

+1 669 900 9128 US (San Jose)

1.1 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.

20-0651

Recommendation: Approve the July 13, 2020, Meeting Minutes.

Manager: Michele King, 408-630-2711

Attachments: Attachment 1: 07132020 DRAFT WSEC Minutes

4. ACTION ITEMS:

4.1. Update on Los Vaqueros Reservoir Expansion Project: 2019 Multi-Party Agreement Amendment

20-0652

Recommendation: Receive and discuss information regarding the Amendment 2 to the 2019 Multi-Party Agreement Increasing SCVWD Cost Share By Up to \$1 Million.

Manager: Jerry De La Piedra, 408-630-2257

Attachments: Attachment 1: Draft Amendment No. 2 to the CSA for LVRE Pro
Attachment 2: LVE Project

Est. Staff Time: 20 Minutes

- 4.2. Second Amendment to 2019 Reservoir Project Agreement for Continued Participation in the Sites Reservoir Project 20-0653

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;
 C. Recommend to Board to Direct Valley Water staff to continue engagement in Sites Reservoir Committee and negotiate future parameters for participation.

Manager: Jerry De La Piedra, 408-630-2257

Attachments: Attachment 1: July Agenda Memo Staff Report
 Attachment 2: Second Amendment
 Attachment 3: Preliminary Amendment 2 Participation Table
 Attachment 4: Exhibit A Project Agreement Members
 Attachment 5: PowerPoint
 Attachment 6: Sites Authority Board Letter

Est. Staff Time: 20 Minutes

- 4.3. Review Water Storage Exploratory Committee Work Plan and the Committee's Next Meeting Agenda. 20-0654

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
 Attachment 2: WSEC Draft Agenda

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. District Counsel Report on Closed Session.

7. **ADJOURN:**

7.1. Adjourn

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Santa Clara Valley Water District

File No.: 20-0651

Agenda Date: 8/21/2020
Item No.: 3.1.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Approval of Minutes.

RECOMMENDATION:

Approve the July 13, 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: 07132020 WSEC Draft Mins

UNCLASSIFIED MANAGER:

Michele King, 408-630-2711

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SANTA CLARA VALLEY WATER DISTRICT (VALLEY WATER)
WATER STORAGE EXPLORATORY COMMITTEE

DRAFT MINUTES

MONDAY, JULY 13, 2020

3:00 PM

(Paragraph numbers coincide with agenda item numbers)

A regular meeting of the Water Storage Exploratory Committee (Committee) was held on July 13, 2020, via Zoom Meeting at Valley Water, 5700 Almaden Expressway, San Jose, California.

1. CALL TO ORDER

The Water Storage Exploratory Committee was called to order by Chair Director Gary Kremen at 3:02 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.

Staff in attendance were: Aaron Baker, Erin Baker, Lisa Bankosh, Glenna Brambill, Frances Brewster, Domingo Candelas, Jerry De La Piedra, Mark DeMartini, Vincent Gin, Samantha Greene, Andy Gschwind, Christopher Hakes, Garth Hall, Brian Hopper, Katrina Jessop, Cindy Kao, Eric Leitterman, Kathleen Low, Bill Magleby, Michael Martin, Ryan McCarter, Heath McMahan, Steven Peters, Melanie Richardson, Metra Richert, Don Rocha, Eli Serrano, Charlene Sun and Beckie Zisser.

Guests in attendance were: Anthea Hansen and Chris White (Del Puerto), Marguerite Patil (Contra Costa Water District-CCWD, Tim Francis, Steve Jordan, and Danielle McPherson (BAWSCA), Bill Tuttle (San Jose Water Company) Mourad Attalla, Andrew Bell, David Cramer, Reid Fisher, Catherine Matsuiyo Tompkison, Michelle Shiro, Grace Silverboard, Bob Green, Phil Gregory, Katja Irvin, Leslie Moulton, David Niese, Nancy Walker, and Javed.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON AGENDA

There was no one present who wished to speak.

3. APPROVAL OF MINUTES

3.1 APPROVAL OF MINUTES

It was moved by Director Richard P. Santos, seconded by Director John L. Varela, and unanimously carried to approve the minutes of the January 15, 2020, meeting of the Water Storage Exploratory Committee as presented by roll call vote and all Directors voting yes!

4. ACTION ITEMS

4.1 DEL PUERTO CANYON RESERVOIR UPDATE

Ms. Anthea Hansen and Mr. Chris White reviewed the materials as outlined in the agenda item.

The Committee (Directors Kremen, Santos and Varela) discussed the following: project WIIN ACT funding, feasibility study, CEQA almost completed, alternate locations, banking projects, finances, economy, costs, likes/dislikes of potential partners, legality of park, permitting, acre foot costs, critical and non-critical years, nature enthusiasts/interested agencies, and outreach. The Committee had questions from Dave Cramer and Phil Gregory, regarding; hard bids, construction, costs, design concerns and small business opportunities.

Ms. Anthea Hansen and Mr. Chris White were available to answer questions.

The Committee took no action.

4.2 LOS VAQUEROS RESERVOIR EXPANSION PROJECT: STORAGE, TRANSFER-BETHANY PIPELINE, AND SOUTH BAY AQUEDUCT CAPACITY

Ms. Samantha Greene reviewed the materials as outlined in the agenda item.

The Committee (Directors Kremen, Santos and Varela) discussed the following: Conveyance/storage capacity, multi-party agreement (MPA) expiration June 2020 and extension unto December 2020, South Bay Aqueduct (SBA) poor condition, payments, agencies and the shared cost (Zone 7, Alameda), DWR's feasibility study, Anderson Dam fault concerns, LAP-new water and diversification of storage.

Ms. Erin Baker reported that she is working with SBA/DWR and contractors (Brown and Caldwell) regarding capacity availability and the MPA that has expired and the quarterly payments. Discussed the agreement coming back to the Committee before going to the Full Board.

The Committee received a question from Mr. Steve Jordan on estimated cost for conveyance and if it will be done for storage.

Mr. Jerry De La Piedra, Ms. Metra Richert and Ms. Marguerite Patil (CCWD) were available to answer questions. Cost concerns can be found in the Water Supply Master Plan online.

The Committee took the following action:

It was moved by Director John L. Varela seconded by Director Richard P. Santos, and unanimously carried to approve the Committee's recommendation 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 all Directors voting yes! One footnote, Committee requested that updated information come back to the Committee before going to the full Board.

4.3 SECOND AMENDMENT TO 2019 RESERVOIR PROJECT AGREEMENT FOR CONTINUED PARTICIPATION IN THE SITES RESERVOIR PROJECT

Ms. Cindy Kao reviewed the materials as outlined in the agenda item.

The Committee (Directors Kremen, Santos and Varela) discussed the following: can support this project but where are the funds coming from, minimum participation in next year's budget, pros and cons, local water vs outside water, and low and high range levels for

The Committee received a question from Mr. Steve Jordan does the yield go up in drought years.

Mr. Jerry De La Piedra and Mr. Garth Hall were available to answer questions.

The Committee took no action, however, before taking any action, requested more information on the agreement/project for further discussion at the next meeting.

Chair Director Kremen moved to Agenda 4.5

4.5 UPDATE ON PACHECO RESERVOIR EXPANSION/SAN LUIS LOW POINT IMPROVEMENT PROJECTS

Mr. Ryan McCarter reviewed the materials as outlined in the agenda item.

The Committee (Directors Kremen, Santos and Varela) discussed the following: Prop funding, EIR data, WSIP funding, public scoping meeting in late September 2020 or early October 2020 for public input and partner discussions.

The Committee took no action.

Chair Director Kremen moved to Agenda 4.4

4.4 UPDATE ON THE B. F. SISK DAM RAISE PROJECT

Ms. Cindy Kao reviewed the materials as outlined in the agenda item.

The Committee (Directors Kremen, Santos and Varela) discussed the following: Project relocation costs, raising cost significant and support from environmentalists.

The Committee took no action.

Chair Director Kremen moved to Agenda 4.6

4.6 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.

Committee discussed LVE/SBA, Pacheco, Sites and San Luis Reservoir Low Point costs for continued discussion.

Staff will work with Chair Kremen on next meeting's agenda.

5. CLERK REVIEW AND CLARIFICATION OF COMMITTEE ACTIONS

Ms. Glenna Brambill noted there was one action item for Board consideration.

Agenda 4.2

The Committee took the following action:

The Committee recommended approving 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 all Directors voting aye! One footnote, Committee requested that updated information come back to the Committee before going to the full Board.

6. 6.1 CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION

Govt. Code Sec. 54956.9(d)(1)

SCVWD v. Jin, et al., Santa Clara County Superior Court, No. 19CV352227

6.2 DISTRICT COUNSEL REPORT ON CLOSED SESSION

Mr. Brian Hopper reported that direction was given to staff.

7. ADJOURNMENT

Chair Director Gary Kremen adjourned the meeting at 5:43 p.m.

Glenna Brambill
Board Committee Liaison
Office of the Clerk of the Board

Approved:



Santa Clara Valley Water District

File No.: 20-0652

Agenda Date: 8/21/2020
Item No.: 4.1.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Update on Los Vaqueros Reservoir Expansion Project: 2019 Multi-Party Agreement Amendment

RECOMMENDATION:

Receive and discuss information regarding the Amendment 2 to the 2019 Multi-Party Agreement Increasing SCVWD Cost Share By Up to \$1 Million.

SUMMARY:

At meeting July 13, 2020, the Water Storage Exploratory Committee (Committee) considered the continued participation in the Los Vaqueros Expansion Project and recommended that Amendment 2 to the 2019 MPA be presented to the full Board for consideration. The Committee was advised by staff at the July meeting that the item would proceed to the Board in the Fall once the Second Amendment was finalized for approval. The draft of the Second Amendment is provided to the Committee for information. The additional cost share for Santa Clara Valley Water District (Valley Water) is expected to be between approximately \$800,000 to just over \$1 million.

Valley Water continues to evaluate participating in the Los Vaqueros Reservoir Expansion Project (LVE Project) led by Contra Costa Water District (CCWD). 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 entered into a 2019 Multi-Party Agreement (MPA) that included a \$314,782 cost share to fund LVE Project development through June 30, 2020, which was extended to December 31, 2020 by Amendment 1 to the 2019 MPA. To continue project development, CCWD has requested project partners adopt Amendment 2, which extends the MPA through 2021 and includes an additional cost share.

Background

The LVE Project would expand Los Vaqueros Reservoir storage from 160 thousand acre-feet (TAF) to 275 TAF and improve and build new conveyance facilities, including the 300 cubic feet per second (cfs) Transfer-Bethany Pipeline that would connect Los Vaqueros facilities to the State Water Project's (SWP) South Bay Aqueduct (SBA). To date, Valley Water has spent approximately \$591,000 towards LVE Project cost sharing for the Water Storage Investment Program (WSIP) application and project development, including in-kind labor costs.

Amendment 2 to the 2019 Multi-Party Agreement

To participate in project development, the Board authorized joining the LVE Project MPA on March 26, 2019, which included cost share funds not to exceed \$355,000. The MPA was fully executed on

April 30, 2019 and committed Valley Water to \$314,782 with a term date of June 30, 2020. Valley Water signed Amendment 1 in June 2020 to extend the existing agreement through December 31, 2020. Amendment 1 was only a time extension and did not require additional funding. CCWD has drafted Amendment 2, which will extend the MPA through December 31, 2021, expand the scope of work, and require an additional cost share. The total cost for Amendment 2 is estimated at \$17.8 million with the Local Agency Partners (LAPs) share totaling \$6.1 million accounting for state and federal funding. The cost share to Valley Water is expected to be approximately between \$800,000 to just over \$1 million, depending on the number of LAPs that continue to participate. The cost is split equally among the LAPs, which is the same as the original MPA. The additional cost share in Amendment 2 will fund: JPA formation, preparation of service agreements, developing permits and agreements necessary to secure full WSIP funding, operational or conveyance issues identified by LAPs (e.g., SBA conveyance), 90% level of LVE Project design, and other critical path items as required to receive full WSIP funding from the California Water Commission. CCWD has requested the LAPs decide on Amendment 2 by the end of September 2020. Given that Amendment 2 is requesting a significant financial commitment, CCWD proposes to split the cost share into four payments: September 2020, November 2020, March 2021, and July 2021. There will also be provisions that allow LAPs to withdraw at any time, and if a decision to withdraw is made prior to any one of the payment due dates, those future payments would not need to be made.

Valley Water staff has provided comments on the draft Amendment 2 (Attachment 1) which focus on clarifying the responsibilities of CCWD, the South Bay Aqueduct Contractors (including Valley Water), and the Department of Water Resources related to determining available capacity in the SBA. The SBA may be used to deliver water from Los Vaqueros to the South Bay Aqueduct Contractors and potentially San Francisco Public Utilities Commission (SFPUC) and the Bay Area Water Supply & Conservation Agency (BAWSCA).

Next Steps

The following are the key long-term decision points and milestones for the LVE Project:

- September 2020: Board meeting to consider a Valley Water resolution to adopt Amendment 2 to the 2019 MPA, which includes additional cost-share.
- Fall 2020: Committee meeting to discuss and recommend JPA Agreement for the Board's consideration.
- Winter 2020/2021: 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).
- 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 Amendment No. 2 to the Cost Share Agreement for Los Vaqueros Reservoir Expansion Project Planning

File No.: 20-0652

Agenda Date: 8/21/2020
Item No.: 4.1.

Attachment 2: PowerPoint Presentation

UNCLASSIFIED MANAGER:

Jerry De La Piedra, 408-630-2257

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**Amendment No. 2 to the
Cost Share Agreement for
Los Vaqueros Reservoir Expansion Project Planning**

The Cost Share Agreement for Los Vaqueros Reservoir Expansion Project Planning between Contra Costa Water District (CCWD) and Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7); Alameda County Water District (ACWD); Bay Area Water Supply & Conservation Agency (BAWSCA); East Bay Municipal Utility District (EBMUD); Grassland Water District (GWD); San Francisco Public Utilities Commission (SFPUC); San Luis & Delta-Mendota Water Authority (SLDMWA); and Santa Clara Valley Water District (Valley Water) (collectively, "Local Agency Partners"), dated April 30, 2019 and amended on June 22, 2020 (referred to hereafter as the "Agreement"), shall hereby be amended by this Amendment No. 2. The Agreement, together with Amendment No. 1 and this Amendment No. 2, may be referenced hereafter as the "Agreement as amended".

RECITALS

WHEREAS, Contra Costa Water District and the Local Agency Partners (collectively, "Parties") entered into the Agreement dated April 30, 2019, to provide for the cost-sharing of the funding requirements for the planning of the Los Vaqueros Reservoir Expansion Project ("Project"); and

WHEREAS, pursuant to Sections 5 and 17 of the Agreement, the Agreement was amended on June 22, 2020 to extend the term of the Agreement to December 31, 2020; and

WHEREAS, on April 30, 2020 CCWD and the City of Brentwood entered into a Memorandum of Understanding (Brentwood/CCWD MOU) regarding the City's potential service form Los Vaqueros and CCWD is participating in coordination with and on behalf of the City of Brentwood through the Brentwood/CCWD MOU; and

WHEREAS, on April 29, 2019 CCWD and ACWD entered into a letter agreement to procure services to complete the independent review of the proposed usage fees developed by CCWD and EBMUD; and

WHEREAS, ACWD entered into a contract with Bartle Wells Associates to complete the independent review of the proposed usage fees;

WHEREAS, on December 30, 2019 Bartle Wells Associates provided the Parties with the final report of the evaluation of the proposed usage fees; and

WHEREAS, on May 13, 2020 CCWD's Board of Directors approved the Project and certified the Final Supplement to the Final Environmental Impact Statement/ Environmental Impact Report; and

WHEREAS, on May 22, 2020 the Notice of Determination for the Los Vaqueros Reservoir Expansion Project was filed with the state clearinghouse; and

WHEREAS, the Final Federal Feasibility Report has been completed by Reclamation; and

WHEREAS, the 2020 federal budget included \$2.155 million to fund Reclamation's work to advance pre-construction activities for the Project; and

WHEREAS, a legal workgroup was formed consisting of counsel from each of the Parties; the legal workgroup unanimously selected Joint Powers Authority (JPA) Formation Counsel; and

WHEREAS, on May 18, 2020 the first draft of the Joint Exercise of Powers Agreement was provided to the legal workgroup; and

WHEREAS, draft biological assessments were provided to Reclamation to support re-initiation of consultation with U.S. Fish and Wildlife Service and National Marine Fisheries Service under Section 7 of the Endangered Species Act; and

WHEREAS, on May 21, 2020 the Technical Review Board and representatives from the Division of Safety of Dams reviewed the 50% design of the Los Vaqueros dam raise; and

WHEREAS, on May 26, 2016 CCWD entered into a funding agreement with the California Department of Water Resources (DWR) for the Canal Replacement Project and amended that agreement to fund preliminary design evaluations of Pumping Plant No. 1 Replacement; and

WHEREAS, CCWD competitively selected an engineering consultant and entered into a professional services agreement to prepare preliminary design evaluations of Pumping Plant No. 1 Replacement in support of permitting efforts; and

WHEREAS, CCWD and the South Bay Aqueduct Contractors which currently hold contracts with DWR for supply from the State Water Project and conveyance of these supplies through the South Bay Aqueduct have initiated discussions with DWR to address potential changes to water rights, Delta operations, and other agreements necessary to implement the Project; and

WHEREAS, the South Bay Aqueduct is currently a critical conveyance facility for the South Bay Aqueduct Contractors and has been proposed as the primary conveyance facility for delivering supplies from the Project to BAWSCA's and the SFPUC's Service Areas; and

WHEREAS, DWR is conducting a condition assessment of the South Bay Aqueduct in coordination with the South Bay Aqueduct Contractors; and

WHEREAS, the South Bay Aqueduct Contractors have procured a consultant to evaluate potential capacity in the South Bay Aqueduct available for BAWSCA and the SFPUC; and

WHEREAS, DWR, as the owner and operator of the South Bay Aqueduct, has the authority to approve the conveyance of non-State Water Project water supplies through the South Bay Aqueduct for use by BAWSCA and the SFPUC; and

WHEREAS, time is of the essence in terms of the completion of both the South Bay Aqueduct condition assessment and capacity study and the development of additional agreements with DWR as necessary in order for the South Bay Aqueduct Contractors, BAWSCA, and the SFPUC to be provided with the necessary information and assurances to further evaluate the benefits and costs of participation in the Project; and

WHEREAS, the California Water Commission (CWC) and CCWD have amended the Early Funding Agreement to increase the cap on State reimbursements from \$13.65 million to \$22.95 million;

WHEREAS, Parties have paid a total of \$2,833,036 to date in addition to in-kind services to support work in the Agreement; and

WHEREAS, the Parties wish to again amend the Agreement to further extend the term and to fund additional planning activities necessary to proceed to a final award hearing and secure a final funding award from the CWC; and

NOW, THEREFORE, the Parties agree that the above recitals are incorporated in and made part of the Agreement, and, pursuant to Section 17 of the Agreement, do hereby amend the Agreement as amended as follows:

1. Section 1 (Purpose)

In addition to purposes a through h, as provided for in the Agreement, the following purposes and additional paragraphs shall be included in the Agreement as amended.

- i) permits, approvals, certifications, and agreements as required by the CWC to proceed to a final award hearing and secure a final funding award;
- j) design of the Los Vaqueros dam to the 90% level and advancement of design work on other Project facilities; and
- k) draft service agreements;

Purposes a and b, as provided for in the Agreement, have been achieved and do not require additional funding.

Work to achieve Purposes c, d, e, f, g, h, i, j, and k will be advanced under the Agreement as amended. Work completed by the Consultant Team and CCWD staff to achieve these Purposes will be partially funded by this Amendment No. 2 to the Agreement.

A detailed scope of work and budget for activities funded by this Amendment No.2 are included in Exhibit A-2 and Exhibit B-2, respectively, which are attached hereto and incorporated herein as if fully set forth in this Amendment No. 2 to the Agreement.

2. Section 2 (Roles & Responsibilities)

In addition to the existing roles and responsibilities described in the Agreement, the following additional roles and responsibilities shall be included in the Agreement as amended.

2.1 Contra Costa Water District Responsibilities

- a-l) as described in the Agreement; and
- m) will submit permit applications for construction and operations of Project facilities including but not limited to: Transfer-Bethany Pipeline, Los Vaqueros Dam Raise, Pumping Plant No. 1 Replacement, Neroly Highlift Pump Station, Transfer Facility, Delta-Transfer Pipeline; and
- n) will advance the design of Project facilities including but not limited to Los Vaqueros Dam Raise, Pumping Plant No. 1 Replacement, Transfer-Bethany Pipeline, and Neroly Highlift Pump Station; and
- o) will enter into coordinated operations agreements with Reclamation and DWR; and

- p) will file change petitions as appropriate on water rights held by CCWD, if deemed necessary and appropriate; and
- q) will work cooperatively with DWR and Reclamation to modify their water rights to the extent necessary; and
- r) will execute contracts for administration of public benefits with the California Department of Fish and Wildlife (CDFW) and DWR; and
- s) will enter into a cost share agreement with Reclamation; and
- t) will work cooperatively with the South Bay Aqueduct Contractors to secure conveyance agreements with DWR to convey water from the Project through the South Bay Aqueduct; and
- u) will work cooperatively with EBMUD to develop and execute a Memorandum of Understanding for the potential provision of water during Project construction; and
- v) will complete an operational risk and reliability assessment; and
- w) will enter into an agreement with the City of Brentwood to continue its participation in the development of the Project; coordinate with Brentwood and seek their timely input, review and feedback as described in this Agreement; and provide for Brentwood's participation in negotiations, meetings, conference calls, webinars, and committees. No other party will object to such participation.

2.2 East Bay Municipal Utility District Responsibilities

- a-k) as described in the Agreement; and
- l) will obtain permits for facilities that will be funded in part by the CWC (Walnut Creek VFD, Mokelumne Relining); and
- m) will work cooperatively with CCWD to develop and execute a Memorandum of Understanding for the potential provision of water during Project construction; and
- n) will file change petitions on water rights held by EBMUD if deemed necessary and appropriate by EBMUD.

2.6 South Bay Aqueduct Contractors Responsibilities

- a-d) as described in the Agreement; and
- e) will work cooperatively with CCWD to secure conveyance agreements with DWR to convey water from the Project through the South Bay Aqueduct to the South Bay Aqueduct Contractors; and
- f) will provide results of the South Bay Aqueduct condition assessment and capacity study to BAWSCA and the SFPUC. Final capacity assessments and operational constraints will be identified by DWR.

2.8 Joint responsibilities

- a-b) as described in the Agreement; and
- c) CCWD and all Local Agency Partners will work cooperatively to secure federal funding.

The following Section 2.9 shall be added in its entirety to Section 2 of the Agreement as amended:

2.9. San Francisco Public Utilities Commission Responsibilities

In addition to the joint responsibilities and the responsibilities of a Local Agency Partner, the SFPUC, may:

- a) coordinate with BAWSCA and seek its timely input, review and feedback as described in this Agreement.
- b) enter into a separate agreement with BAWSCA to formalize its participation in coordination with the SFPUC in the further development of the Project.
- c) Both the SFPUC and BAWSCA can provide for BAWSCA's participation, in whole or in part in the development of the Project. Participation may include but is not limited to participating in negotiations, meetings, conference calls, webinars, and committees. No other party will object to such participation.

3. Section 3 (Cost & Payment)

Shall be amended such that the following terms shall, as applicable, supplement and/or supersede the corresponding terms in the Agreement in their entirety.

Funds previously provided under the Agreement have been nearly expended. The cost and payment are intended to provide sufficient funding for advancing the completion of the additional Scope of Work as provided for in Exhibit A-2 and Budget provided for in Exhibit B-2.

- a) Total costs to fund work hereunder are identified in Exhibit B-2. The CCWD and Local Agency Partners' collective total share of the cost shall not exceed \$6,081,967 ("Total Cost Share").
- b) Notwithstanding anything to the contrary in the Agreement, CCWD and the Local Agency Partners, excluding GWD, shall be responsible for providing the Total Cost Share in accordance with Exhibit B-2. Timing and quantity of payment for each Local Agency Partner shall not vary from what is put forth in Exhibit B-2 unless CCWD and the Local Agency Partners voluntarily agree to modifications pursuant to Sections 3(d)(iii) and 17 of the Agreement. The Total Cost Share described herein is exclusive of any joint defense or litigation cost share amounts which may be determined in a subsequent written agreement entered into pursuant to Section 9 of the Agreement.
- c) The SFPUC's payments as a Local Agency Partner are subject to the fiscal provisions of the San Francisco charter and the budget decisions of its Mayor and Board of Supervisors. No SFPUC funds will be available hereunder until prior written authorization certified by the City's Controller. The Controller cannot authorize payments unless funds have been certified as available in the budget or in a supplemental appropriation. This Agreement shall automatically terminate, without liability to the City, if funds are not properly appropriated by the Mayor and Board of Supervisors or certified by the Controller. The SFPUC's obligations hereunder shall never exceed the amount certified by the Controller for the purpose and period stated in such certification. The SFPUC, its employees and officers are not authorized to request services that are beyond the scope of those expressly described herein, unless a written amendment is approved as required by law.
- d) CCWD and the Local Agency Partners will split the Total Cost Share equally over four payments. CCWD will invoice each of the Local Agency Partners for its share of the Total Cost Share detailed in Exhibit B-2.
 - (i) Four invoices are anticipated according schedule to the list below:

1. Upon execution, if agencies do not execute, the additional cost share will be added to payment #2.
 2. November 1, 2020
 3. March 1, 2021
 4. July 1, 2021
- (ii) Payment from the Local Agency Partners shall be remitted within thirty (30) days after invoice submittal.
 - (iii) Funds contributed by the Local Agency Partners shall be committed by CCWD and expended only for work required to further the Purposes of this Agreement.
 - (iv) If a sufficient number of Parties withdraw before the second, third, or fourth invoice such that the Local Agency Partners' cost shares exceed \$1,013,661, each remaining Local Agency Partner, at its sole discretion consistent with Section 3.b of this Agreement, shall determine whether to withdraw from the Agreement. CCWD and the Local Agency Partners who do not choose to withdraw will work together to develop an amendment that substantially conforms to this Agreement. If no mutually agreeable amendment can be developed, the remaining Parties will terminate this Agreement.
 - (v) If a new Local Agency Partner is added, consistent with Section 12 of this Agreement, before the second invoice, the second invoice for each Local Agency Partner will be adjusted to reflect the cost share of the new partner and the total number of Local Agency Partners.
 - (vi) If funds remain after work under this Agreement is completed, each Local Agency Partner will determine whether its pro-rata share of the remaining funds shall be returned or contributed to future work consistent with Section 7 of this Agreement. Each Local Agency Partner shall advise CCWD of its determination within 60 days of receiving notice from CCWD of the completion of the work, or the remaining funds shall automatically be contributed towards future work.
 - (vii) In-kind services may include labor costs and overhead costs for staff who are providing in-kind services for Project activities under this Agreement, including but not limited to data collection, document review, communications, stakeholder outreach, management of third-party consultant contracts, and attending Project meetings. In-kind services will contribute toward the non-State funding match required by the Early Funding Agreement, as it may be amended from time to time. In-kind services, pursuant to Section 2.7(d) of this Agreement, are contributed at the discretion of each Local Agency Partner with no minimum or maximum in-kind contribution limits.

5. Section 5 (Term)

Shall be amended such that the following term shall supersede and replace the corresponding term in the Agreement in its entirety:

This Agreement shall be effective as of the date first written above and shall terminate on the earlier of the completion of the work contemplated herein or December 31, 2021, unless the Term is modified consistent with Section 17 of this Agreement.

8. Section 10 (Early Funding Agreement)

Shall be amended such that the following term shall supersede and replace the corresponding term in the Agreement in its entirety:

Early funding, in the amount of \$13.65 million, which is equal to fifty percent of the estimated total planning and permitting costs, was approved by the California Water Commission on July 24, 2018. The Early Funding Agreement was amended on ##, 2020 to increase the total funding available from the California Water Commission from \$13.65 million to \$22.95 million. The Amendment to the Early Funding Agreement, which is attached hereto in Exhibit E-2, requires a fifty percent (50%) funding match from non-State entities (“Non-Program Cost Share”). The Local Agency Partners hereby agree to cooperate in good faith with CCWD to reasonably assist CCWD in its compliance with the Early Funding Agreement. Without limiting the generality of the foregoing, each Local Agency Partner agrees to provide information and access to records in all forms as may be necessary to facilitate CCWD’s compliance with all reporting and audit requirements of the Early Funding Agreement, including but not limited to information necessary to adequately document the Non-Program Cost Share.

9. Section 11 (Federal Funding)

Shall be amended such that the following term shall supersede and replace the corresponding term in the Agreement in its entirety:

Federal appropriations in Federal Fiscal Year 2020 allocated \$2.155 million to Reclamation to complete pre-construction activities for the Project. Reclamation recommended \$7.845 million for the Project in Federal Fiscal Year 2021. With support from the Local Agency Partners, CCWD is seeking a total of \$223 million in federal funding for design, pre-construction, and construction activities through the Water Infrastructure Improvements for the Nation (WIIN) Act or other federal legislation. If federal funding for the Project is appropriated by Congress, Reclamation would receive the requested funding and the funds would support Reclamation’s staff and consultant team and the federal permitting process. Reclamation and the CCWD may enter into a funding agreement that would provide funding to CCWD for staff and consultants to complete design and pre-construction activities. Some portion of the federal funds may be directly applied to the scope of work contained in Exhibit A-2. The federal funds could be credited towards any Non-Program Cost Share as required in the Early Funding Agreement as described in Section 10 of this Agreement.

Effective date of Amendment No. 2.

Amendment No. 2, including the financial contribution provisions herein, shall be effective as to CCWD and each Local Agency Partner as of the date of signature by CCWD and each subsequent Local Agency Partner signatory.

This Amendment No. 2 may be executed in counterparts, each of which shall be deemed an original but all of which taken together shall constitute on and the same Amendment No. 2.

Robert Shaver, General Manager
Alameda County Water District

Date

Nicole Sandkulla, CEO / General Manager
Bay Area Water Supply and Conservation
Agency

Date

Stephen J. Welch, General Manager
Contra Costa Water District

Date

Clifford Chan, General Manager
East Bay Municipal Utility District

Date

Ric Ortega, General Manager
Grassland Water District

Date

Harlan L. Kelly, Jr., General Manager
San Francisco Public Utilities Commission

Date

Federico Barajas, Executive Director
San Luis & Delta-Mendota Water Authority

Date

Rick Callender, Chief Executive Officer
Santa Clara Valley Water District

Date

Valerie Pryor, General Manager
Zone 7 Water Agency

Date

Draft Exhibit A-2

Amendment No. 2 Scope of Work

The following tasks describe the work efforts by Contra Costa Water District (CCWD), consultants for the Los Vaqueros Reservoir Expansion (LVE) Project, and the Local Agency Partners (as indicated) under this Amendment No. 2 to the Agreement. References to work efforts by Reclamation are described as appropriate to describe joint work efforts, but are not intended to imply that Reclamation is a party to this Amendment. CCWD will be supported by the consultant and legal services team that are under contract to CCWD and managed by CCWD.

Task 1 Project Management

Task 1 CWC Early Funding Agreement Administration

Administer the Early Funding Agreement executed by CCWD and the California Water Commission (CWC), including meeting reporting and invoicing requirements of the Agreement, coordinating with CWC staff as needed to respond to questions and data requests, and managing cost commitments. Provide financial statements and other supporting documentation as requested by the CWC staff pertaining to the Early Funding Agreement.

Pursuant to the Early Funding Agreement, prepare quarterly progress reports detailing work completed in prior quarter in accordance with Water Storage Investment Program (WSIP) requirements. Progress reports will explain the status of the Project and will include the following information: summary of the work completed for the project during the reporting period; activities and milestones achieved; and accomplishments and any problems encountered in the performance of work.

Prepare monthly invoices meeting the invoice content terms of the Early Funding Agreement, including relevant supporting documentation for submittal to the CWC and Reclamation. Coordinate with consultants and Local Agency Partners to prepare and submit sufficient backup documentation to support claimed costs.

Deliverables:

- Invoices and associated backup documentation
- Quarterly Progress Reports (for CWC and Reclamation)

Task 1.2 Project Management Activities

This task includes project management activities performed by CCWD, local agency partners, consultants, and other agencies related to, but not limited to, managing staff, invoicing, budgeting, scheduling, reviewing submittals, meetings and conference calls, and coordinating project activities that are within the objectives of the Project and of this Agreement.

Deliverables:

- Summary updates on project management activities in Quarterly Progress Reports

Task 1.3 Joint Powers Authority Formation

Selection of legal counsel to assist the Local Agency Partners and CCWD in forming a Joint Powers Authority (JPA) was completed previously. Legal counsel will assist in implementing JPA formation through development of a joint powers agreement.

Develop Project term sheet to identify roles of the JPA and Local Agency Partners, as well as outline major terms of existing agreements amongst CCWD and the Local Agency Partners. Based on the Project term sheet, engage special counsel to develop a joint powers agreement. Conduct meetings and workshops as necessary with Local Agency Partners to negotiate terms.

Legal counsel will work with the legal workgroup to develop draft service agreements.

Deliverables:

- Joint selection of special counsel (completed)
- JPA Agreement (in progress)
- Term sheet (in progress)
- Draft services agreements

Task 2 Environmental Planning

Task 2.1 Modeling

Modeling tasks to support preparation of the Final Supplement to the Final EIS/EIR were completed previously. Develop new or modify existing modeling tools so that operations or limitations of the governance structure of the JPA can be evaluated in terms of benefits to partners. Refine the model to track terms and requirements of various water rights. Re-build or refine the Los Vaqueros daily operations model to accommodate partner operations, which may serve as a tracking tool in the future for permit reporting, billing, scheduling deliveries, etc.

Deliverables:

- Revised CalSim Model
- Summaries of modeling results

Task 2.2 Public Outreach

Perform outreach activities to educate and inform the media, elected officials, CCWD ratepayers, communities in the Los Vaqueros area, environmental organizations, and regional and statewide interests about the purpose, objectives, and results of the technical studies.

Respond to routine stakeholder comments. Post responses as appropriate to the CCWD hosted project website at ccwater.com or share with stakeholders in informal meetings.

A public meeting was previously held in Concord to support the CCWD Board of Directors' certification of the Final Supplement, approval of a project, and adoption of CEQA Findings and MMRP.

Deliverables:

- Stakeholder and public involvement program
- Documentation of outreach activities
- Public meeting(s) for Final Supplement to the Final EIS/EIR (completed)
- Public meetings to support Record of Decision if necessary

Task 2.3 Environmental Document and Technical Studies

The U.S. Department of the Interior, Bureau of Reclamation, Region 10 – California-Great Basin (Reclamation) is the lead agency under the National Environmental Policy Act (NEPA) for preparation of the EIS and, in conjunction with CCWD, the lead agency under CEQA. Reclamation and CCWD previously prepared a joint Final EIS/EIR in March 2010 and CCWD completed construction of the first phase of reservoir expansion from 100,000 acre-feet (100 TAF) to 160 TAF in 2012. Reclamation and CCWD previously prepared a joint Supplement to the Final EIS/EIR document to support the second phase of reservoir expansion up to 275 TAF.

The development of the Supplement to the Final EIS/EIR, including the completion of the necessary technical studies in support of this effort culminating with issuance of the Supplement, were previously completed. The studies and data produced adhered to the federal planning and NEPA guidelines, CEQA guidelines, and WSIP guidance. Technical studies were conducted in accordance with the alternatives identified in the Draft Supplement.

All agency meetings and technical workgroup meetings required to support the environmental document and studies are described in 0and Task 2.2.

(2.3.1) Post-Draft Supplement Technical Studies and Surveys

This task has been completed.

(2.3.2) Transfer-Bethany Pipeline Alternative Location Evaluation

This task has been completed.

(2.3.3) Final Supplement to the Final EIS/EIR

This task has been completed.

(2.3.4) CEQA Findings and Mitigation Monitoring and Reporting Plan

This task has been completed.

(2.3.5) Record of Decision

It is anticipated that Reclamation will issue a Record of Decision on the Project during the term of this Amendment. CCWD will provide support to Reclamation with any necessary reporting, public meetings, briefings, white papers, and/or presentations.

Deliverables:

- Record of Decision

Task 2.4 Regulatory Permitting

Prepare documentation of environmental regulatory compliance including the Clean Water Act (CWA) Section 404(b)(1), CWA Section 401, the Federal Endangered Species Act (Section 7), the California Endangered Species Act, Section 1602 of the California Fish and Game Code, the National Historic Preservation Act (NHPA Section 106), and the Fish and Wildlife Coordination Act (FWCA). When possible or beneficial, obtain amendments to existing permits and excess compensation land acquired/managed during the Phase 1 expansion. If not possible to amend existing permits, seek new permits. Coordinate with regulatory agencies to confirm when amendments will be appropriate. In support of this task, several key work efforts (described below) will be completed.

Conduct reconnaissance-level biological field surveys of any new project areas (if any) to identify the potential for the presence of sensitive biological resources. Conduct a desktop analysis including a database search of the California Natural Diversity Data Base (CNDDDB), California Native Plants Society's Inventory of Rare and Endangered Plants, USFWS species lists, and NMFS species lists in order to determine the potential occurrence of special-status plants, animals, and vegetation communities. Conduct site-specific biotic assessments to identify biological resources that are present or have a high likelihood to occur in the study area, and to assess the likely impacts associated with construction and/or long-term operations of the proposed project on biological resources. The results of the reconnaissance survey and analysis will be used to inform the CEQA/NEPA documentation, regulatory permitting documents, and resource agency review.

Prepare the regulatory permit applications for the proposed project. Attend meetings with regulatory agencies. Develop supporting technical reports, as needed, to support preparation of proposed permit applications. Permit applications and supporting documents to be prepared in support of the project may include: Biological Assessment for Federal Endangered Species Act compliance and Magnuson Stevens Fisheries Conservation and Management Act compliance; Clean Water Act Section 404/Section 10 Individual Permit Application; Clean Water Act Section 401 Clean Water Act Water Quality Certification Application; California Fish and Game Code Section 1602 Streambed Alteration Agreement Application; Section 2081 California Endangered Species Act Incidental Take Permit Application; Fish and Wildlife Coordination Act Report; National Historic Preservation Act Section 106 compliance; and Aquatic Resources Delineation.

Deliverables:

- Rare plant surveys and report of results (completed)
- Wetland delineation and mapping, report of results (completed)
- Administrative Draft Supplement to the Final EIS/EIR (completed)
- Final Supplement to the Final EIS/EIR (completed)
- Draft CEQA Findings and MMRP (completed)
- Final CEQA Findings and MMRP (completed)
- Permit applications and supporting technical reports, as applicable

Task 2.5 Water Rights Permitting

Coordinate with Reclamation, the Department of Water Resources (DWR), Local Agency Partners, and the State Water Resources Control Board (State Board) regarding changes to existing water rights. Prepare petitions for change for CCWD's water right permit and assist Reclamation, DWR, and

Local Agency Partners with preparation of change petitions as required. File petitions with the State Board, assist State Board staff with drafting orders and permit amendments as required, respond to any protests that may be filed and seek resolution of those protests, prepare for and participate in hearings as required.

Deliverables:

- Change petition on CCWD water right
- Change petition on CVP water rights
- Change petition on DWR water rights
- Change petition on Local Agency Partners' water rights as required

Task 2.6 Land Transactions

Identify and contact the landowners of parcels that will be surveyed for Task 2.3.1, Task 2.3.2. Acquire the appropriate land rights to gain access to the properties. Identify potential mitigation lands as needed for Task 2.4. Determine preliminary appraisal value of potential mitigation lands. Initiate discussions to obtain right-of-way for Transfer-Bethany Pipeline. Acquire options to acquire mitigation lands with the concurrence of the Local Agency Partners.

Deliverables:

- Entry permits and temporary easements on properties needed for technical surveys
- Identification and preliminary appraisal of potential mitigation sites
- Discussions regarding right-of-way for Transfer-Bethany Pipeline

Task 2.7 Final Award Hearing Requirements

A series of agreements will be needed to meet the final award hearing requirements of the California Water Commission. Progress on a number of agreements will commence during the term of this amendment. The agreements necessary to get to the final award hearing may include but are not limited to: operations coordination agreements with Reclamation and the Department of Water Resources; conveyance agreements with DWR to convey water from the Project through the California Aqueduct and the South Bay Aqueduct; contracts for administration of public benefits; a cost share agreement with Reclamation for pre-construction activities; agreement with DWR for the design and construction of the Transfer-Bethany Pipeline connecting to SWP facilities; agreement with the JPA for design and construction of Project conveyance facilities and the expanded Los Vaqueros Reservoir dam; agreement between CCWD and EMBUD for provision of emergency water supplies during construction.

Deliverables:

- Operations coordination agreement(s) with Reclamation and DWR
- Conveyance agreement(s) with DWR
- Contracts for administration of public benefits
- Cost-share agreement with Reclamation
- Design and construction agreement with DWR
- Design and construction agreement with the JPA
- Emergency water supply during construction agreement with EBMUD

Task 3 Engineering Feasibility

Task 3.1 Financial Evaluation

Perform a financial evaluation that will assess the costs and merits of the Project.

Clean Energy Capital will further develop an excel-based Proforma Financial Model for the Project that incorporates water pricing options and integration with CalSim model. Perform stakeholder meetings and workshops; collect and review stakeholder and local partner comments and inputs to the model. Refine model as additional information arises that may affect the local agency partners, operations, water pricing, or other financial components of the Project. Clean Energy Capital will work directly with Local Agency Partners, as needed, to support each agency's understanding and familiarity with the financial evaluation.

ACWD will retain Bartle Wells Associates, an independent financial consultant, to further support evaluation of the usage fees CCWD and EBMUD have developed for use of their assets and infrastructure. Clean Energy Capital will also be available to support the independent financial review of the usage fees.

Create a Plan of Finance describing the proposed financing structure and assumptions for financing the Project. The Plan of Finance will take into consideration appropriate debt structures, timing, impact on rates, budgeting, credit ratings, tax laws, availability of grants and other State and Federal funding, and assessment of capital market conditions. Evaluate the funding capabilities of a JPA and associated contractual requirements for partners receiving and paying for services.

Deliverables:

- Updated Proforma Financial Model
- Further support for evaluation of Refined Usage Fees (as required)
- Plan of Finance

Task 3.2 Federal Feasibility Study

The Final Federal Feasibility Report was completed in 2020, however it has not been published yet. The Secretary of the Interior and/or Congress may continue to evaluate federal participation in the Project throughout the term of this Amendment.

Additional work may be necessary to secure federal support for the Project and future congressional budget appropriations. CCWD and Local Agency Partners will also provide support to Reclamation with any post-feasibility report requirements as needed.

Deliverables:

- Final Federal Feasibility Study (completed)
- Updated fact sheets for meetings with elected officials
- Updated federal funding and budget requests
- Post-feasibility report support

Task 3.3 Preliminary Design

(3.3.1) Pumping Plant No. 1

Preliminary design technical evaluations are being completed by CCWD as part of CCWD's Canal Replacement Project. Following completion of preliminary design, additional design development and evaluations must be completed in support of permitting and developing inter-agency agreements, including field work, site facility layouts, and development of electrical design sufficient for coordination with the Western Area Power Administration (WAPA) and other design development in order to maintain progress to allow construction consistent with the Project schedule.

Deliverables:

- Pumping Plant No. 1 Preliminary Design Report
- Facility layout drawings
- Electrical System Improvements Plans
- Principles of Agreement with WAPA

(3.3.2) Los Vaqueros Dam

This task includes work efforts related to design of the Los Vaqueros Dam expansion to gain Division of Safety of Dams (DSOD) authorization to construct. Design-related tasks may include, but are not limited to, reporting, investigations, testing, analysis, and surveys; geotechnical investigations and reporting; stability and deformation analysis; design of earthquake ground motions and parameters, spillway, outlet works, new emergency release outlet, tunnel/portal, transfer pipeline connection, and dam instrumentation; constructability review, value engineering, risk analysis, and feasibility studies; DSOD meetings and correspondence; and design of site restoration for the core borrow area. This task includes formation of a Technical Review Board for independent review of the dam consultant's work in accordance with DSOD guidelines.

Deliverables:

- LV Dam 50% (completed), 90% Final Drawings and Specifications
- LV Dam 50% (completed), 90% Final Cost Estimate/Schedule

(3.3.3) Transfer-Bethany Pipeline

CCWD will competitively procure an engineering consultant to continue pipeline alignment evaluations resulting from continued coordination with local resource and transportation agencies. CCWD will work with Contra Costa County Public Works and the Contra Costa Transportation Authority and their ongoing regional transportation planning for the Vasco Road widening and the State Route 239 Connector and will evaluate alignment adjustments as needed. CCWD will work with resource agencies to evaluate implications of alignment modifications and construction methods and associated mitigation and land needs along the alignment south of Vasco road in support of coordination with the East Contra Costa Habitat Conservation Plan and the County. CCWD will coordinate with the Department of Water Resources to review and define design criteria and to develop designs of the turn-in to the California Aqueduct, and will review available geotechnical information and define pipeline corridor within State owned lands. Topographic survey will be

completed with up-to-date aerial photography. Preliminary design of the pipeline and turn-in will be developed. CCWD will prepare a geotechnical work plan and initial assessment of land acquisition needs.

Deliverables:

- Alignment Adjustment Evaluations TM
- Transfer-Bethany Pipeline Preliminary Design Report
- Topographic Survey
- Geotechnical Work Plan
- Assessment of Pipeline Land Acquisition Need

(3.3.4) Operation and Reliability Assessment

Complete a risk assessment of CCWD's existing and planned facilities and their operation as a system to confirm appropriate criteria are developed for reliability, redundancy and viability of long-term operations to meet the Project objectives. The assessment will consider the range of operations and future scenarios that consider planned and unplanned shutdowns and other events that might affect performance of the system and the economic implications.

Deliverables:

- CCWD facilities and system operation risk assessment

Draft Exhibit B

Budget and Cost Share

The budget for Amendment No. 2 to the Agreement covers three major tasks: project management, environmental planning, and engineering feasibility. The total budget includes projected costs for legal and consulting services, CCWD staff in-kind services, Local Agency Partner in-kind services, and Reclamation expenses. The total cost for the scope of work listed in Exhibit A-2 is \$17,832,667 (original MPA total \$11,623,400) and is shown in Table 1.

(3. Table 1. Amendment No. 2 to the Multiparty Agreement (MPA) Budget

Task No.	Description	Original MPA	Amendment No. 2	Total
1	Project Management	\$1,090,600	\$2,302,400	\$3,393,000
2	Environmental Planning	\$3,777,400	\$5,368,967	\$9,146,367
3	Engineering Feasibility	\$6,755,400	\$10,161,300	\$16,916,700
	Total	\$11,623,400	\$17,832,667	\$29,456,067

The total cost to complete the scope of work, \$17,832,667 will be paid through a combination of in-kind services, contributions from Reclamation (pursuant to 2015 Cost Share Memorandum of Understanding between Reclamation and CCWD), reimbursement from the California Water Commission (CWC), and contributions from CCWD and the Local Agency Partners.

To calculate the amount owed by CCWD and the Local Agency Partners, the total cost is reduced by contribution from the CWC, Reclamation, CCWD in-kind services funded by CCWD, the Local Agency Partner's in-kind services, and the projected carryover of unspent funds from the original MPA. The CWC contribution includes fifty percent (50%) of the total cost, less 10% retention; the total CWC contribution therefore is estimated to be \$8,024,700.

The costs remaining after accounting for contributions from CWC, Reclamation, CCWD in-kind services, and Local Agency Partner in-kind services is \$6,081,967 as shown in Table 2. This is equal to the Total Cost share defined in Section 3(a) of the Agreement as amended and will be split equally among CCWD and the Local Agency Partners, excluding Grassland Water District which will provide in-kind services only. The ultimate cost per agency depends on the total number of Local Agency Partners that proceed and execute this Amendment. Four equal invoices are proposed over the amended term of the Agreement for CCWD and each Local Agency Partner. Table 3 shows the invoice schedule and the total costs per agency varying by the total number of agencies participating.

(4. Table 2. Amendment No. 2 to the Multiparty Agreement Cost Allocation

Total Projected Costs	\$17,832,667
less Reclamation Cost	-\$2,155,000
less CCWD in-kind services (portion funded by CCWD)	-\$441,000
less partner in-kind services	-\$980,000
less projected carryover of unspent funds from original MPA	-\$150,000
less projected CWC Invoice payments	-\$8,024,700
Remaining Cost Required from Local Agency Partners & CCWD	\$6,081,967

Table 3. Invoice schedule where each invoice equals 25 percent of total costs per agency

		Invoice #1	Invoice #2	Invoice #3	Invoice #4
	Total Cost Per Agency	Upon Execution	November 2020	March 2021	July 2021
8 Agencies	\$760,246	\$190,061	\$190,061	\$190,061	\$190,061
7 Agencies	\$868,852	\$217,213	\$217,213	\$217,213	\$217,213
6 Agencies	\$1,013,661	\$253,415	\$253,415	\$253,415	\$253,415

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WATER STORAGE COMMITTEE
AUGUST 20, 2020

Los Vaqueros Expansion Project

Project Cost Share

2019 MULTI-PARTY AGREEMENT

- Local Agency Partners (LAPs) executed on April 2019, committing Valley Water to \$314,782.

AMENDMENT #1

- LAPs executed on June 2020, extends agreements through December 2020 (no additional cost commitment).

AMENDMENT #2

- Agreement extension through December 2021.
- Revised scope of work.
- Additional cost share for calendar year 2021 project costs.

AMENDMENT 2 – Additional Cost Share

- Estimated cost of \$7.2 million – **Valley Water’s share is estimated between \$800 thousand to \$1 million**
 - Four payments: September & November 2020, March & July 2021
 - Withdrawal from agreement terminates cost share commitment for all future payment(s)
- Final cost share amount depends on the number of LAPs and the allocation approach
- LAP participation decision requested by September 30, 2020

Cost share will fund:

1. JPA formation
2. Preparation of service agreements
3. Permits and agreements necessary to secure full WSIP funding
4. Operational or conveyance issues identified by LAPs (e.g., SBA capacity)
5. Preliminary LVE Project design
6. Other critical path items as required



Santa Clara Valley Water District

File No.: 20-0653

Agenda Date: 8/21/2020
Item No.: 4.2.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Second Amendment to 2019 Reservoir Project Agreement for Continued Participation in the Sites Reservoir Project

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;
- C. Recommend to Board to Direct Valley Water staff to continue engagement in Sites Reservoir Committee and negotiate future parameters for participation.

SUMMARY:

On July 13, 2020, the Santa Clara Valley Water District's Water Storage Exploratory Committee (Committee) received an update and report on the Sites Reservoir Project (Sites Project). The Committee requested staff to provide additional information to continue discussions on the Second Amendment to 2019 Reservoir Project Agreement with Sites Project Authority (Second Amendment) and evaluation of Valley Water's level of participation including lowest credible level of participation in the Sites Project. For reference, a copy of the July Committee Agenda Memorandum and Second Amendment is provided as Attachment 1 and Attachment 2 respectively. Participants are requested to execute the Second Amendment by September 10, 2020. Execution of the agreement would obligate Valley Water to contribute funds to support continued Phase 2 work activities from June 2020 through December 2021 (Phase 2, Year 2 and 3) based on a specific participation level.

Several Valley Water directors have expressed interest in Valley Water taking a leadership position, such as membership in the Sites Project Authority. A leadership position may associated with a significant level of financial participation and/or perhaps a role building on Valley Water's knowledge and strong engagement in issues surrounding the Central Valley Project, State Water Project, and Delta science programs. For reference on financial participation, the Preliminary Amendment 2 Participation Table in Attachment 3 shows that staff in the top third of participants will each recommend a participation level of at least 10,000 AF (4.1% of total project costs) to their Boards. Valley Water staff has evaluated participation requests ranging from 7,800 AF (3.2% of total project costs) to 16,000 AF (6.6% of total project costs). Staff recommends continuing participation in the Sites Project at a participation level of at least 7,800 AF. A 7,800 AF participation level would commit Valley Water to \$0.78 million in contributions through December 2021, which would represent a 3.2%

participation in terms of total project costs. It would be slightly lower than that of the top third of participants. If sustained, it would also be a relatively low future commitment to the project given the amount of water supply (approximately 1.5%) when scaled to Valley Water’s aggregate supply from all sources, and given the staff ongoing administrative cost necessary for proper engagement with the project to assure effective project operations and management. This participation request would provide 4,700 to 6,100 AF of average annual yield south of the Delta to Valley Water if the project were constructed.

Background

Two participation approaches for the next phase of funding are presented in Table 1, while Table 2 provides advantages and disadvantages for each option:

1. Option A: Maintain Valley Water’s current level participation level in terms of total project costs (3.2%) and anticipated share of water delivered to Valley Water after losses (4,700 to 6,100 AF per year).

2. Option B: Maintain Valley Water’s current estimated share of project yield in terms of requested NOD yield (16,000 AF) and anticipated share of water delivered to Valley Water after losses (9,600 to 12,400 AF per year).

The Sites Project is composed of a two-tiered governance structure composed of a Joint Project Authority (JPA) and a Reservoir Committee, whose authority is delegated by the JPA. Valley Water is working to develop opportunities and secure a position on this JPA, the ultimate governing body that will own and operate the reservoir. Through participation in the Second Amendment, Valley Water would maintain participation in the Reservoir Committee. The Reservoir Committee is tasked to develop recommendations for continued governance of the project.

Participation and level of influence in the Reservoir Committee decisions is based on a weighted voting amongst participants. For the Committee’s convenience, a copy of the current public water agency participation levels and weighted voting rights, as contained in Exhibit A to the 2019 Reservoir Project Agreement and first amendment, is provided in Attachment 4. Attachment 3 shows the participation levels that other participants are planning to recommend to their Boards, with the top third of participants recommending a participation request of at least 10,000 AF (4.1% of total project costs).

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) ¹	\$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 Participation in Total Project	3.20%	3.20%	6.60%
Valley Water Participation Request (AF) ²	16,000	7,800	16,000
Valley Water Participation in Project Agreement Member Share	8.30%	4.10%	8.30%
ESTIMATED BENEFITS (STORAGE AND YIELD)			
Valley Water Average Delivered Yield (AF) ⁴	11,100	4,700 to 6,100	9,600 to 12,400
Valley Water Average Dry/Critical (Drier) Year Delivered Yield (AF) ⁴	21,500	6,500 to 8,200	13,200 to 16,800
Valley Water Storage Share (AF) ³	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) ⁵	\$242 Million	\$125 Million	\$255 Million
Estimated Levelized Unit Cost (constant 2020 dollars per AF of delivered yield) ⁶	Not available	\$600/AF - \$800/AF	\$600/AF - \$800/AF
Valley Water Funding Commitment⁷	\$0.96 Million	\$0.78 Million	\$1.60 Million

¹ During the last Board decision, capital cost was reported in 2015 dollars. For comparison with estimates for the new project description, these have been escalated up to 2019 dollars using the USBR CCT Composite Trend Indices per recommendation from Jeff Herrin (Sites Consultant, AECOM). The reported 2015 dollar values were \$5.5 billion for the total project and \$177 million for Valley Water's Share.

² This participation request is a value requested by the Sites Project managers and is used by them as a tool to calculate participation levels relative to other participants. Actual annual yield of the project is different and variable.

³ Share of storage is a rough estimate. Sites participants have not had a complete discussion regarding allocation of storage, but currently adopted Sites storage policy indicates storage rights will be in proportion to participation level.

⁴ Yields delivered to Valley Water assume a 25% carriage water loss applied to North of Delta (NOD) yield numbers. Yield numbers are very rough and are subject to change. The yield projected for a 3.2% participation level in February 2019 was 8,000 AF; this number has been updated to 11,000 AF in the table to reflect updated modeling assumptions.

⁵ Total Capital Cost published by the Sites Project were fully inflated by Valley Water financial staff to determine nominal construction costs.

⁶ Calculated using Valley Waters 100-year life cycle cost methodology. Inputs based on financial model used in Sites Value Planning Report, with additional conservative assumptions used for Capital Improvement Program Projects.

⁷ Sites is requesting funding for the next phase of work, which will begin September 1, 2020, and run through December 2021.

Note that these yield amounts available to Valley Water are new water, not otherwise available to Valley Water, for example, through other projects currently being considered. Ultimately the amount of project yield and benefit that is usable by Valley Water depends on the portfolio of water supply projects Valley Water ultimately implements as guided by the Water Supply Master Plan (WSMP); the outcome of negotiations among water agency participants, DWR, and Reclamation; the outcome of ongoing regulatory processes; and refinements of Sites Project operations to reflect storage benefits and updated operational constraints. Additional modeling refinements are currently being implemented to better estimate potential yields and benefits.

The location of Sites Reservoir north of the Delta poses challenges when conveying Sites' project yield across the Delta. In critically dry years, water quality issues may limit export pumping and shorten the window during which water may be delivered, and water losses across the Delta may be high. If Valley Water were to ultimately invest in the Sites Project, these risks could be reduced by also investing in conveyance improvement projects such as the Delta Conveyance Facility or the Transfer Bethany Pipeline (part of the Los Vaqueros Expansion Project).

Table 2: Participation Option Advantages/Disadvantages

Option	Valley Water Participation Level ¹	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 investments 	<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 Committee² • 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 Committee² • Reserves a larger portion of yield and storage benefits (17 TAF drier year yield, 90 TAF storage) • Participation level may be reduced later 	<ul style="list-style-type: none"> • Higher cost

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 192,892 acre-foot.

Another option to consider is withdrawing completely from the project by not executing the Project Agreement. However, doing so would result in no preservation of benefit, and, because the project size has decreased, there is a greater probability that it may proceed without Valley Water's support. In this case, it would be more difficult for Valley Water to rejoin the project at a later date.

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 Project Committee (Reservoir Committee) through December 2021. The total Second Amendment budget, for Phase 2 Year 2 and 3, is roughly \$40 million, with about \$19 million of this 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 WIIN Act.

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. The FY2021 Imported Water Program, Project No. 91131004 budget, includes \$1.6 million to support continued participation in this project.

ATTACHMENTS:

- Attachment 1: Committee Agenda Memo - July 13, 2020
- Attachment 2: Second Amendment
- Attachment 3: Preliminary Amendment 2 Participation Table
- Attachment 4: Exhibit A - Project Agreement Members
- Attachment 5: PowerPoint
- Attachment 6: Sites Authority Board Letter

UNCLASSIFIED MANAGER:

Jerry De La Piedra, 408-630-2257

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Santa Clara Valley Water District

File No.: 20-0540

Agenda Date: 7/13/2020
Item No.: 4.3.

COMMITTEE AGENDA MEMORANDUM

Water Storage Exploratory Committee

SUBJECT:

Second Amendment to 2019 Reservoir Project Agreement for Continued Participation in the Sites Reservoir Project

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 participation level of up to 6.6 percent of the total project and a funding commitment of up to \$1.6 Million;
- C. Recommend to Board to Direct Valley Water staff to continue engagement in Sites Reservoir Committee and negotiate future parameters for participation.

SUMMARY:

In 2019, the Santa Clara Valley Water District's (Valley Water) Board of Directors (Board) authorized the Chief Executive Officer to execute an agreement and subsequent first amendment to participate in Phase 2 of the Sites Reservoir Project (Sites Project). That agreement expired on June 30, 2020. The Sites Joint Powers Authority (JPA) is offering Valley Water the opportunity to continue participating in the Sites Project by executing the Second Amendment to the 2019 Reservoir Project Agreement (Attachment 1, Second Amendment), which will cover extended Phase 2 work and planning efforts to develop the Sites Project through December 2021.

Participants are requested to execute the Second Amendment by September 10, 2020. Execution of the agreement would obligate Valley Water to contribute funds to support continued Phase 2 work activities from June 2020 through December 2021 (Phase 2, Year 2 and 3) based on a specific participation level. Staff has analyzed two approaches for Valley Water's continued participation, summarized in Table 1. Table 2 provides advantages and disadvantages for each option. Staff recommends to continue participation in the Sites Project at a participation level that would maintain Valley Water's estimated share of water supply yield from the project, equivalent to up to 6.6 percent of total project and roughly 9.6 to 12.4 thousand acre-foot (TAF) of average annual yield, at a total fee of up to \$1.6 million.

Background

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. The Sites Project would collect

winter flood flows from the Sacramento River with the objective of increasing water supply certainty while ensuring in-stream flows that benefit the Delta ecosystem. The Sites Project is identified in Valley Water's Water Supply Master Plan (WSMP) as a potential alternative to help secure Delta-conveyed supplies. The Sites managers anticipate that the Sites Project will be cooperatively managed in conjunction with both the State Water Project (SWP) and Central Valley Project (CVP) and will increase the flexibility, reliability and resiliency of statewide water supplies in drier years for environmental, agricultural, and urban uses.

The Sites Project is envisioned to progress in a five phase approach:

- Phase 1 - California Water Storage Investment Program Planning (Proposition 1) funding application and EIR/EIS development. Completed in 2018;
- Phase 2 - EIR/EIS completion, predesign, critical permits, and water rights. In progress;
- Phase 3 - Final design, land and right of way acquisition, and remaining permits;
- Phase 4 - Construction; and
- Phase 5 - Transfer to Operations

Since 2016, Valley Water has been participating in the Sites Project. On February 26, 2019 the Board approved continued participation in the Sites Project Phase 2 Year 1 at a targeted participation level of up to 3.2 percent, (i.e., funding 3.2 percent of total project costs to preserve rights to 3.2 percent of total project benefits).

Accomplishments of the Sites Project Phase 2 Year 1 (2019) work includes:

- Securing an additional \$6 million in Congressional appropriations from the Water Infrastructure Improvements for the Nation (WIIN) Act, bringing total to \$10 million;
- Adoption of a Sites Storage Policy which better defines storage benefit to project participants and outlines rules of use;
- Completion of a Value Planning Alternatives Appraisal; and
- Sites Project specifically named in the Governor's 2019 Water Resilience Draft Portfolio - a plan to provide reliability and resiliency to statewide water supplies.

In April 2020, a Sites Project Value Planning Alternatives Appraisal Report (VPAA Report) was finalized as part of the Sites Project Phase 2 Year 1 work (February 2019 thru June 2020). The purpose of this report was to support planning efforts to continue development of the Sites Project, inform expectations on diversion permits and water rights, and shape investor participation. This report evaluates several project alternatives for reservoir sizes, conveyance capacities, and participant subscriptions. The recommended project alternative, referred to as VP7, includes a 1.5 million acre-foot (MAF) reservoir storage capacity with an estimated yield ranging from 190,000 to 240,000 acre-foot (AF), at an estimated project cost of \$3 billion (2019 Dollars). Reducing the size of

the reservoir was responsive to input from state and federal agencies, non-government organizations, elected officials, landowners and local communities.

The work projected for Phase 2 Year 2 and 3 includes continuation of efforts to complete a revised draft EIR/EIS for public review and comment, preparing and submitting final feasibility reports for Prop 1 and WIIN Act funding, and moving forward on predesign, critical permits, securing water rights, and interim financing.

Potential Valley Water Benefits

Sites Project water supply and operational benefits could be realized by diverting surplus water into Sites Reservoir during high river flow events for later release to participants, in conjunction with operation of Oroville and Shasta Reservoirs. Staff anticipates that the Sites Project could provide the following benefits to Valley Water, if it is able to divert and store water as proposed with operations integrated with the SWP and CVP:

- An increase in water supply, including significant amounts in dry years, which could, subject to future negotiations, be delivered as SWP project supplies;
- Storage rights in Sites reservoir proportional to the Valley Water's targeted participation level;
- Improvement in Shasta Reservoir storage levels and cold-water pool that may provide fishery benefits; and
- Stabilization or increase in CVP water supply allocations.

The extent to which these benefits can be realized depends on several issues that have yet to be resolved, including permit requirements, potential participation by Reclamation and other agencies and integration of operations with the SWP and CVP as well as with other Sacramento Valley users and projects.

Staff has evaluated preliminary modeling results provided by the VPAA Report to assess the share of yield that could be delivered to Valley Water for a range of target participation levels. Given general uncertainties associated with conveyance across the Delta, staff has assigned losses of 25 percent on estimated NOD yields (see Table 1).

Execution of the Second Amendment would provide Valley Water with a continuing seat on the Sites Reservoir Project Committee (Reservoir Committee) through December 2021. Staff will provide an update on long-term governance of the project at the July 13 Water Storage Exploratory Committee meeting.

Two participation approaches for the next phase of funding are presented in Table 1, while Table 2 provides advantages and disadvantages for each option:

1. Option A: Maintain Valley Water's current level participation level in terms of percent (3.2%).
2. Option B: Maintain Valley Water's current estimated share of project yield in terms of

requested NOD yield (16,000 AF) and anticipated share of water delivered to Valley Water after losses (roughly 10,000 AF).

Table 1: Comparison of Participation Options

	February 26, 2019 Board Decision (3.2% Participation Share)	Option A	Option B
		Maintain 3.2% Participation Share in the Project	Maintain Estimated Share of Project Yield
PROJECT DESCRIPTION			
Total Capital Cost (2019 Dollars) ¹	\$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 Participation in Total Project	3.20%	3.20%	6.60%
Valley Water Participation Request (AF) ²	16,000	7,800	16,000
Valley Water Participation in Project Agreement Member Share	8.30%	4.10%	8.30%
ESTIMATED BENEFITS (STORAGE AND YIELD)			
Valley Water Average Delivered Yield (AF) ⁴	11,100	4,700 to 6,100	9,600 to 12,400
Valley Water Average Dry/Critical (Drier) Year Delivered Yield (AF) ⁴	21,500	6,500 to 8,200	13,200 to 16,800
Valley Water Storage Share (AF) ³	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) ⁵	\$242 Million	\$125 Million	\$255 Million

Valley Water Funding Commitment	\$0.96 Million	\$0.78 Million	\$1.60 Million
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¹ In the February 26, 2019 Board materials, capital cost was reported in 2015 dollars. For comparison with estimates for the new project description, these have been escalated up to 2019 dollars using the USBR CCT Composite Trend Indices per recommendation from Jeff Herrin (Sites Consultant, AECOM). The reported 2015 dollar values were \$5.5 billion for the total project and \$177 million for Valley Water's Share.

² This participation request is a value requested by the Sites Project managers and is used by them as a tool to calculate participation levels relative to other participants. Actual annual yield of the project is variable based on hydrology (year type) and other factors.

³ Share of storage is a rough estimate. Sites participants have not had a complete discussion regarding allocation of storage, but currently adopted Sites storage policy indicates storage rights will be in proportion to participation level.

⁴ Yields delivered to Valley Water assume a 25% carriage water loss applied to North of Delta (NOD) yield numbers. Yield numbers are very rough and are subject to change. The yield projected for a 3.2% participation level in February 2019 was 8,000 AF; this number has been updated to 11,000 AF in the table to reflect updated modeling assumptions.

⁵ Total Capital Cost published by the Sites Project were fully inflated by Valley Water financial staff to determine nominal construction costs.

⁶ Sites is requesting funding for the next phase of work, which will begin September 1, 2020, and run through December 2021.

Note that these yield amounts available to Valley Water are new water, not otherwise available to Valley Water, for example, through other projects currently being considered. Ultimately the amount of project yield and benefit that is usable by Valley Water depends on the portfolio of water supply projects Valley Water ultimately implements as guided by the WSMP; the outcome of negotiations among water agency participants, DWR, and Reclamation; the outcome of ongoing regulatory processes; and refinements of Sites Project operations to reflect storage benefits and updated operational constraints. Additional modeling refinements are currently being implemented to better estimate potential yields and benefits.

Table 2: Participation Option Advantages/Disadvantages

Option	Valley Water Participation Level ¹	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 investments 	<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 • 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 • Reserves a larger portion of yield and storage benefits (17 TAF drier year yield, 90 TAF storage) • Participation level may be reduced later 	<ul style="list-style-type: none"> • Higher cost

¹ Valley Water participation level in total project and associated funding commitment for the Second Amendment.

Another option to consider is withdrawing completely from the project by not executing the Project

Agreement. However, doing so would result in no preservation of benefit, and, because the project size has decreased, there is a greater probability that it may proceed without Valley Water's support. In this case, it would be more difficult for Valley Water to rejoin the project at a later date.

For the Committee's convenience, a copy of the current public water agency participation levels contained in Exhibit A to the 2019 Reservoir Project Agreement and first amendment is provided as Attachment 2.

Project Funding

Execution of the Second Amendment would obligate Valley Water to provide funding for continued work on Phase 2 of the Sites Project. The total Second Amendment budget, for Phase 2 Year 2 and 3, is roughly \$40 million, with about \$19 million of this 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 WIIN Act.

The allocation of costs to the Sites 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. Staff plans to add \$600,000 to the FY2021 Imported Water Unit budget through a budget adjustment such that \$1.6 million will be available to support Option B if the Board authorizes that participation level.

ATTACHMENTS:

"Copies of this memo's attachments can be found using the following link to view the Water Storage Exploratory Committee Agenda from July 13, 2020:"

<https://www.valleywater.org/how-we-operate/committees/board-committees> or

<https://www.valleywater.org/sites/default/files/WSEC-Agenda-07132020.pdf>

UNCLASSIFIED MANAGER:

Jerry De La Piedra, 408-630-2257

May 21, 2020

Dear Reservoir Committee Member,

In April 2020, actions were taken by the Project and Authority governing bodies to adopt the April 13, 2020, Sites Project Value Planning Alternatives Appraisal Report and the Amendment 2 Work Plan which together constitute the scope, schedule and budget for the next stage of project development through December 2021. In taking these actions, funding requirements were set which established the timing and amount due from each participating member that wishes to continue its participation in the Project during the Amendment 2 Work Plan period.

As a participating member in the original Phase 2 Project Agreement dated April 1, 2019 and the First Amendment dated January 1, 2020, the Authority hereby requests your determination of interest in continued participation by returning the attached Second Amendment completed and signed by your authorized agency designee, **no later than September 10, 2020.**

Please note that the Second Amendment requires the following information in addition to the authorized signature on the amendment:

- Indicate the amount of capacity shares in acre feet that you are securing through this phase of the project which, in accordance with the amended Section 2.04, will represent the capacity share amount to which your agency has first rights of refusal in any future phase of work. These capacity share amounts indicated by each participating member will be used for the final Exhibit A of the Second Amendment.
- Indicate your commitment to provide up to the total funding required for the capacity shares you have designated. The unit cost is the total for the original agreement already paid (\$60/AF) and the new commitment for the Amendment 2 Work Plan (not to exceed \$100/AF).

We have prepared a set of documents for you to use in your agency deliberations of this request. Documents are available for you to download at this link: <https://brwncald-my.sharepoint.com/:f:/p/irobinette/Epm9iMLcDwNOhiMc2840b6EBFm-igGMQPzc-HU2pCxovcQ?e=76687k>. Don't hesitate to contact Kevin Spesert, Sites Project Authority, External Affairs Manager, at ksperert@sitesproject.org if you need assistance with any of these materials.

The project team is excited to embark on this ambitious Amendment 2 Work Plan. It is critical that you receive timely information for your next decision prior to December 2021 where we will be seeking commitment of the total project local cost share which is one of the conditions for receiving the \$816M State WSIP funds.

Please don't hesitate to contact me if there are any questions or you need my support regarding this request.

Jerry Brown
Executive Director, Sites Project Authority

Sincerely,

A handwritten signature in black ink, appearing to be 'JB' with a flourish extending to the right.

Jerry Brown, Executive Director
Sites Project Authority

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: _____

Name:

Title:

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).

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		\$30,536
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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Preliminary Amendment 2 Participation Tableⁱ

Participant	Phase 2 (2019) Participation Request (AF)	Amendment 2 Staff Recommended Participation Request (AF)	Variance (AF)	Interest in Participation Increase (AF)	Estimated Cost Share of Total Project ⁱⁱ
American Canyon, City of	4,000	4,000	0		1.6%
Antelope Valley-East Kern WA	500	500	0		0.2%
Carter MWC	300	300	0		0.1%
Coachella Valley WD	10,000	10,000	0		4.1%
Colusa County	10,000	10,000	0		4.1%
Colusa County WD ⁱⁱⁱ	11,975	11,000	-975	Possibly	4.5%
Desert WA	6,500	6,500	0		2.7%
Glenn-Colusa ID	5,000	5,000	0		2.1%
Metropolitan WD of S. CA	50,000	50,000	0		20.6%
Reclamation District 108	4,000	4,000	0		1.6%
San Bernardino Municipal WD	21,400	21,400	0		8.8%
San Geronio Pass WA	14,000	14,000	0		5.8%
Santa Clara Valley WD	16,000	7,800	-8,200		3.2%
Santa Clarita Valley WA	5,000	5,000	0	5,000	2.1%
TC4: Cortina WD	450	450	0		0.2%
TC4: Davis WD	2,000	2,000	0		0.8%
TC4: Dunnigan WD	2,717	2,717	0		1.1%
TC4:LaGrande WD	1,000	1,000	0		0.4%
Westside WD ⁱⁱⁱ	15,000	2,000	-13,000		0.8%
Wheeler Ridge-Marcopa WSD	3,050	3,050	0		1.3%
Zone 7 WA	10,000	10,000	0		4.1%
Pacific Resources MWC ^{iv}	0	0	0	10,000	0.0%
TOTAL	192,892	170,717	-22,175	15,000	70.3%

ⁱ Based on table provided at July 16, 2020 Sites Reservoir Committee meeting. Updated to reflect Valley Water Staff recommended minimum participation request and an estimate of each participants cost share of total project.

ⁱⁱ Based on staff recommended participation request only. Total does not include Prop 1 grant funding from State, which is expected to cover approximately 25% of the construction costs.

ⁱⁱⁱ Indicated possibility for higher participation, lower projected participation level shown

^{iv} Phase 1 participant, no survey response received. Interest expressed by a responding Phase 2 participant.

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EXHIBIT A

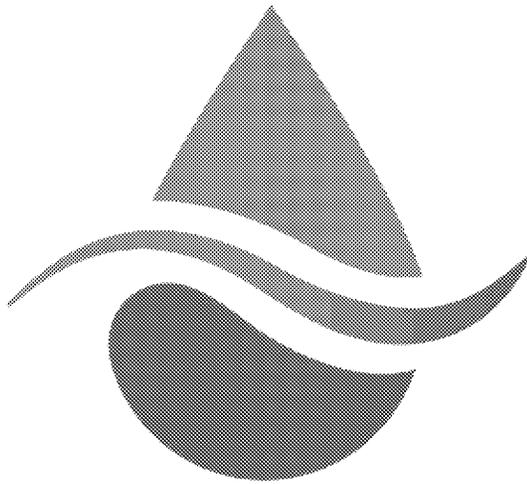
PROJECT AGREEMENT MEMBERS

Participant	Participation (Annualized Acre-Foot)		
	Estimated Deliveries	Water Supply Pct	Weighted Voting Pct
American Canyon, City of	4,000	2.1%	3.42 %
Antelope Valley-East Kern WA	500	0.3%	2.51 %
Carter MWC ‡	300	0.2%	2.46 %
Coachella Valley WD	10,000	5.2%	4.97 %
Colusa County	10,000	5.2%	4.97 %
Colusa County WD	11,975	6.2%	5.49 %
Desert WA	6,500	3.4%	4.06 %
Glenn-Colusa ID	5,000	2.6%	3.68 %
Metropolitan WD of S. CA	50,000	25.9%	15.34 %
Reclamation District 108	4,000	2.1%	3.42 %
San Bernardino Municipal WD	21,400	11.1%	7.93 %
San Geronio Pass WA	14,000	7.3%	6.01 %
Santa Clara Valley WD	16,000	8.3%	6.53 %
Santa Clarita Valley WA	5,000	2.6%	3.67 %
TC4: Cortina WD	450	0.2%	2.50 %
TC4: Davis WD	2,000	1.0%	2.90 %
TC4: Dunnigan WD	2,717	1.4%	3.09 %
TC4: LaGrande WD	1,000	0.5%	2.64 %
Westside WD	15,000	7.8%	6.27 %
Wheeler Ridge-Maricopa WSD	3,050	1.6%	3.17 %
Zone 7 WA	10,000	5.2%	4.97 %
Total:	192,892	100.0 %	100.00 %

Participation Percentages exclude State of California's and United States Bureau of Reclamation's participation in the Sites Reservoir Project.

‡ Denotes a non-member participating party. Refer to California Corporations Code Section 14300 et. seq. with additional requirements provided in both the Public Utilities Code and Water Code.

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Valley Water

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Water Storage Exploratory Committee Meeting
August 2020



Second Amendment to 2019 Reservoir Project Agreement for Continued Participation in the Sites Reservoir Project

August 20, 2020



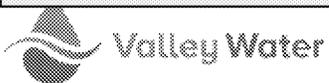
Staff Recommendations

- 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)	Variance (AF)	Interest in Participation Increase (AF)	Estimated Cost Share of Total Project
American Canyon, City of	4,000	4,000	0		1.6%
Antelope Valley-East Kern WA	500	500	0		0.2%
Carter MWC	300	300	0		0.1%
Coachella Valley WD	10,000	10,000	0		4.1%
Colusa County	10,000	10,000	0		4.1%
Colusa County WD	11,975	11,000	-975	Possibly	4.5%
Desert WA	6,500	6,500	0		2.7%
Glenn-Colusa ID	5,000	5,000	0		2.1%
Metropolitan WD of S. CA	50,000	50,000	0		20.6%
Reclamation District 108	4,000	4,000	0		1.6%
San Bernardino Municipal WD	21,400	21,400	0		8.8%
San Geronio Pass WA	14,000	14,000	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	0	5,000	2.1%
TC4: Cortina WD	450	450	0		0.2%
TC4: Davis WD	2,000	2,000	0		0.8%
TC4: Dunnigan WD	2,717	2,717	0		1.1%
TC4:LaGrande WD	1,000	1,000	0		0.4%
Westside WD	15,000	2,000	-13,000		0.8%
Wheeler Ridge-Marcopa WSD	3,050	3,050	0		1.3%
Zone 7 WA	10,000	10,000	0		4.1%
Pacific Resources MWC	0	0	0	10,000	0.0%
TOTAL	192,892	170,717	-22,175	15,000	70.3%

valleywater.org



Phase 2 Project Participation Options

Option	Valley Water							
	Target Level of Participation		Estimated Benefits (Storage and Yield)			Cost		
	Total Project (%)	Request (AF)	Average Delivered Yield (AF) ¹	Average Drier Year Delivered Yield (AF) ¹	Storage Share (AF)	Total Capital Cost (\$ Million)	Total Capital Cost Fully Inflated (\$ Million)	Funding Commitment (\$ Million)
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. Yields delivered to Valley Water assume a 25% carriage water loss applied to North of Delta yield numbers.

Staff estimate a \$600-\$800 per AF 100-year levelized unit cost for both options (2020 constant dollars) based on the yields shown above.



Evaluation of Participation Options

Option	Valley Water Participation Level ¹	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 Committee² • May be difficult to increase participation at a later date • Higher cost
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 • Potential for partial refund of previous investment 	<ul style="list-style-type: none"> • 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
C	0% (\$0.0 M)		

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



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.



Valley Water

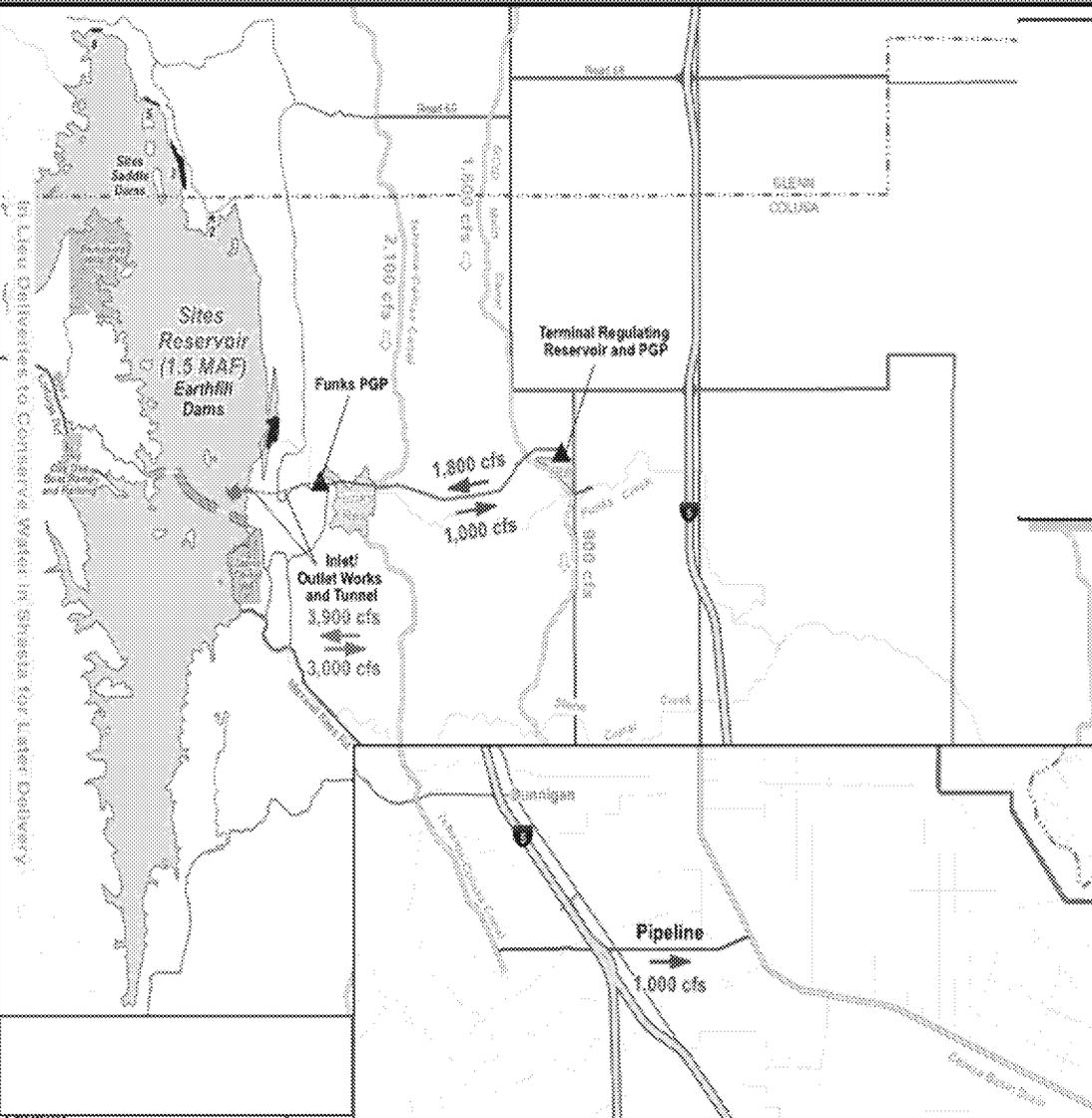
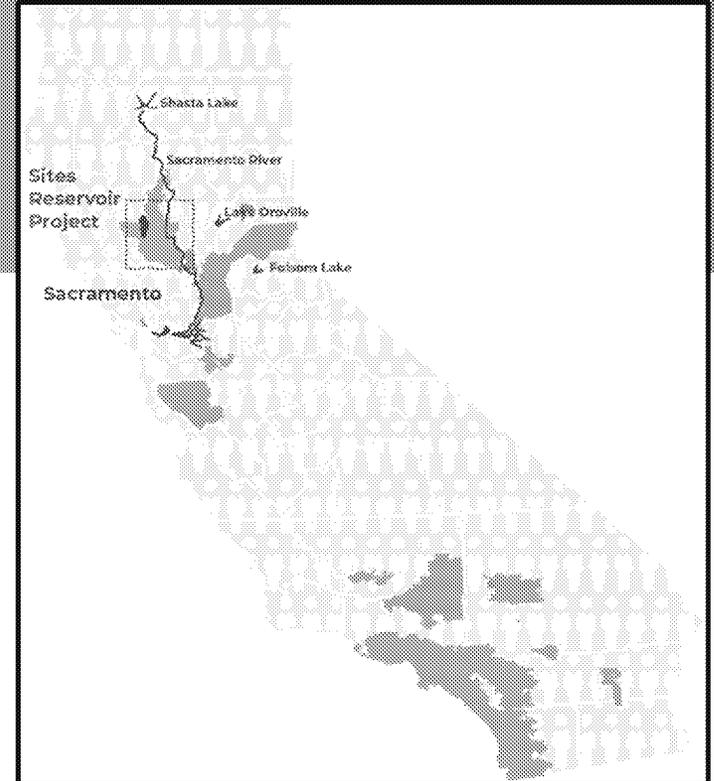
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Supplemental Slides



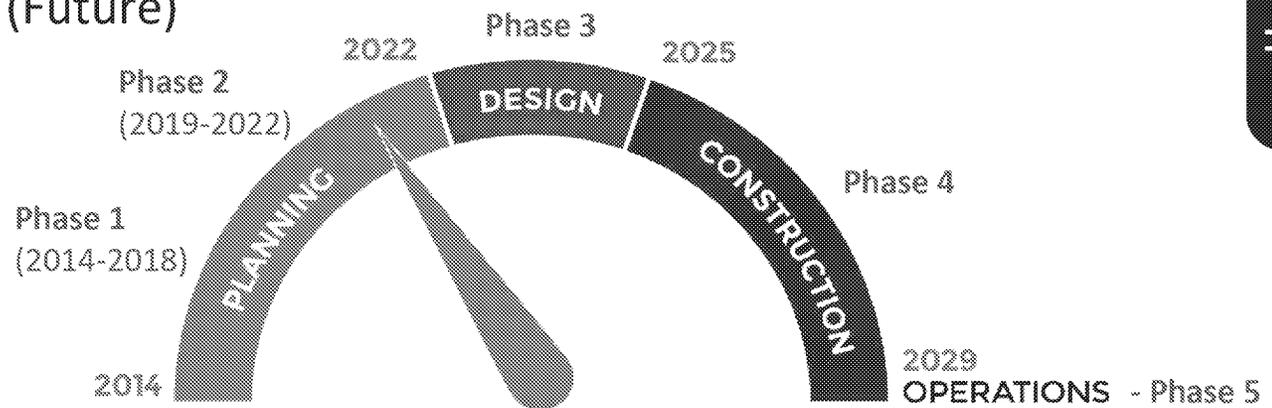
Sites Reservoir Project

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)



Second Amendment to Agreement

- Provides for continued planning work and funding for Phase 2 (Year 2 and 3) of the Project.
- Preserves right to contract for water supply and storage from finished project if executed by September 10, 2020.
- Provides for ability to influence Project through continued participation on Reservoir Committee.
- Commits Valley Water to provide funding for work through December 2021
 - Option A: Maintain Valley Water percent participation level (3.2%).
 - Option B: Maintain Valley Water estimated share of project yield.



August 11, 2020

Chairman Gary Kremen
Valley Water Storage Exploratory Committee
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118-3686

Subject: Sites Reservoir Participation

Dear Chairman Kremen,

This is a follow-up to the July 24, 2020 meeting which was a productive discussion about the next stage of project development and areas of interest to the Valley Water Board of Directors. We understand the Valley Water Board looks to you for guidance with regard to evaluating Valley Water's continued participation in the Sites Reservoir Project as the Chair of your Board's Water Storage Exploratory Committee.

As was explained in the meeting, the recent rightsizing puts the project on a renewed path forward to deliver an affordable, permittable and buildable project within the next decade. We are seeing strong interest from other existing and new participants in the project and would like to see Valley Water, as an early participant, continue to be a key partner in building this critical statewide infrastructure.

We want you and the Board to know that we acknowledge your concerns about project governance and your interest in a greater level of policy oversight by participants outside of the Sacramento Valley. Governance and policy oversight will be a subject area considered by the Authority Board during this next stage of project development (within 16 months). In our positions as Chair and Vice Chair of the Authority Board, we have been and will continue to be committed to governance and policy oversight that provides every participant the control, oversight and independence to achieve its expected benefits from the investment. If there is something that is needed to strengthen that commitment, we would welcome your suggestion and ensure a discussion by the Authority Board.

Clearly, one of the key foundations of any large infrastructure project that expects to be successful is "partnership". But we also understand that partnership needs to be supported by legal assurances provided through contractual mechanisms. These



Valley Water Letter, Sites Reservoir Participation
August 11, 2020
Page 2

elements will be the subject of discussion as well in conjunction with policy and governance discussions over the next 16 months.

We value Valley Water's contributions to this project to date and we look forward to a continued, strong working relationships going forward.

Sincerely,

A handwritten signature in black ink that reads "FRITZ DURST".

Fritz Durst, Chairman
Sites Authority Board

A handwritten signature in black ink that reads "Jeff Sutton".

Jeff Sutton, Vice-Chairman
Sites Authority Board

cc: Valley Water Board of Directors
Rick Callender, Chief Executive Officer, Valley Water
Garth Hall, Interim Chief Operating Officer, Valley Water
Jerry De La Piedra, Interim Deputy Operating Officer of Water Supply, Valley Water
Cindy Kao, Imported Water Manager, Valley Water
Sites Authority Board of Directors
Sites Project Reservoir Committee
Jerry Brown, Executive Director, Sites Project Authority



Santa Clara Valley Water District

File No.: 20-0654

Agenda Date: 8/21/2020
Item No.: 4.3.

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.: 20-0654

Agenda Date: 8/21/2020
Item No.: 4.3.

UNCLASSIFIED MANAGER:
Michele King, 408-630-2711

2020 Work Plan: Water Storage Exploratory Committee

Update: June 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	Standing Items: 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 6. Semitropic 7. Sites 8. San Luis Reservoir Low Point 9. B.F. Sisk Dam Raise Project 10. Shasta	1-15-2020	<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>
2	Review of 2020 Water Storage Exploratory Committee Work Plan	1-15-2020 07-13-2020	<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>
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. 	<p><u>Accomplished July 13, 2020:</u> Special guests Mr. Chris White and Ms. Anthea Hansen gave a presentation of the Del Puerto Canyon Reservoir. The Committee 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: June 2020

ITEM	WORK PLAN ITEM	MEETING	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
4	Update on Los Vaqueros Reservoir Expansion Project: Storage, Transfer-Bethany Pipeline, and South Bay Aqueduct Capacity	07-13-2020 08-20-2020	<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><u>Accomplished July 13, 2020:</u> 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:.</p> <p>The Committee recommended to approve staff's recommendation to bring Amendment to the 2019 Multi-Party Agreement to the Board of Directors for its consideration by roll call vote and all Directors voting aye! One footnote, Committee requested that updated information come back to the Committee before going to the full Board.</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. 	<p><u>Accomplished July 13, 2020:</u> The Committee received an update on the B.F. Sisk Dam Raise Project and discussed without taking action.</p>
6	Second Amendment to 2019 Reservoir Project Agreement for Continued Participation in the Sites Reservoir Project	07-13-2020 08-20-2020	<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>
7	Update on Pacheco/San Luis Reservoir Low Point Projects	07-13-2020	<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 without taking action.</p>
8	Semitropic Groundwater Bank Update	TBD	<ul style="list-style-type: none"> • Receive and discuss information regarding the status of Semitropic Groundwater Bank 	

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: June 2020

ITEM	WORK PLAN ITEM	MEETING	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
9	Comparison of Proposed Groundwater Banking Projects	TBD	<ul style="list-style-type: none"> • Receive and discuss information regarding ongoing development of staff comparison tools to analyze and compare proposed groundwater banking projects. 	
10	Update on Conceptual Lake Del Valle Modifications	TBD	<ul style="list-style-type: none"> • Receive and discuss information regarding the status of Conceptual Lake Del Valle Modifications. 	

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1

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Page 90

	<p align="center"><u>SCVWD Water Storage Exploratory Committee:</u> Director Gary Kremen (Committee Chair) Director Richard P. Santos Director John L. Varela</p>	
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AAGENDA

WATER STORAGE EXPLORATORY COMMITTEE

TBD

**HEADQUARTERS BUILDING BOARDROOM
 5700 ALMADEN EXPY
 SAN JOSE CA 95118**

Time Certain:

	1.	<u>Call to Order/Roll Call</u>
	2.	<u>Time Open for Public Comment on Any Item Not on the Agenda</u> <i>Comments should be limited to two minutes. If the Committee wishes to discuss a subject raised by the speaker, it can request placement on a future agenda.</i>
	3.	<u>Approval of Minutes</u> 3.1 Approval of Minutes – August 20, 2020, meeting
	4.	<u>Discussion/Action Items:</u> 4.1 LVE/SBA 4.2 Sites Reservoir 4.3 Pacheco/San Luis Reservoir Low Point 4.4 Del Valle 4.5 Review of 2020 Water Storage Exploratory Committee Work Plan, remaining Standing Items, and the Committee’s next meeting agenda (Committee Chair)
	5.	<u>Clerk Review and Clarification of Committee Actions</u> <i>This is a review of the Committee’s Actions (from Item 4).</i>
	6.	<u>Adjourn</u>

Reasonable efforts to accommodate persons with disabilities wishing to attend committee meetings will be made. please advise the Clerk of the Board Office of any special needs by calling (408) 630-2277.

Meetings of this committee will be conducted in compliance with all Brown Act requirements. All public records relating to an open session 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 same time that the public records are distributed or made available to the legislative body, at the following location:

Santa Clara Valley Water District, Office of the Clerk of the Board
 5700 Almaden Expressway, San Jose, CA 95118

WATER STORAGE EXPLORATORY COMMITTEE PURPOSE:

The Water Storage Exploratory Committee was established to receive and discuss information on issues related to additional water storage options. The Committee representatives may assist their respective Board of Directors on policies and actions related to these matters.

From: Alicia Forsythe [aforsythe@sitesproject.org]
Sent: 8/5/2020 12:17:45 PM
To: Jerry Brown [jbrown@sitesproject.org]
CC: Marcia Kivett [MKivett@sitesproject.org]
Subject: RE: Sites Project - Environmental Water Manager

I coordinated with Kristal and just sent an updated invite for 4PM. I added Josh also. Kristal sent me this today –

He is our Branch Chief, under Chad, and will be getting more involved going forward.

So it sounds like the chain of command is Kristal reports to Josh, Josh reports to Chad. I just pulled up their org chart and this is consistent with the org chart.

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=35774&inline>

Jerry, I think you may have been in a meeting with Josh. He usually attends but is very quiet. He usually doesn't say much.

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, August 5, 2020 8:42 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Marcia Kivett <MKivett@sitesproject.org>
Subject: Re: Sites Project - Environmental Water Manager

If we can make it work with schedules that would be fine. Do you know Josh Grover? Is he part of the conversation too? If schedules can't work for next Tuesday then you all can meet and we can schedule another discussion after.

Regarding cost reimbursement, I think they are getting interagency Prop 1 money to pay for their involvement on environmental benefits. Our contract should only need to cover staff performing EIR/permit work. Please confirm.

From: Alicia Forsythe <aforsythe@sitesproject.org>
Date: Wednesday, August 5, 2020 at 8:05 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: Re: Sites Project - Environmental Water Manager

Hey Jerry - John and I had a call with Kristal yesterday on their cost reimbursement. At the end of the call, she asked to set up a meeting to talk about the environmental benefits. We set this for next Tuesday. I was thinking this would be a pretty free flowing discussion and then we could structure and figure out next steps from there. Should I add you to this and we can talk with her next week?

Ali

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

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Wednesday, August 5, 2020 7:58:40 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: FW: Sites Project - Environmental Water Manager

I'm setting a meeting with you me Kristal and Josh to discuss bringing them into the Reservoir Committee activities and decision making. They need a seat at the table with the other investors.

Let discuss how/when to communicate this with the RC/AB at our next 1v1.

From: "Bonham, Chuck@Wildlife" <Chuck.Bonham@wildlife.ca.gov>
Date: Tuesday, August 4, 2020 at 3:47 PM
To: Jerry Brown <jbrown@sitesproject.org>
Cc: "Ortiz, Jan@Wildlife" <Jan.Ortiz@wildlife.ca.gov>, Marcia Kivett <MKivett@sitesproject.org>
Subject: RE: Sites Project - Environmental Water Manager

Contact Kristal Davis-Fadtke and Josh Grover.

Thanks.

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Tuesday, August 4, 2020 2:58 PM
To: Bonham, Chuck@Wildlife <Chuck.Bonham@wildlife.ca.gov>
Cc: Ortiz, Jan@Wildlife <Jan.Ortiz@wildlife.ca.gov>; Marcia Kivett <MKivett@sitesproject.org>
Subject: Sites Project - Environmental Water Manager

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Hi Chuck – I'm reaching out to you because I need a point person from your agency who can speak for the Agency in regard to managing the Prop 1 environmental water asset being acquired in the Sites Reservoir. We are formulating policies and designing our operations and I believe the environmental benefit manager needs to be at the table early to make the outcomes most successful which is what we all want to see happen.

Can you assign someone so I can reach out and get them engaged?

Thanks
Jerry

From: Alicia Forsythe [aforsythe@sitesproject.org]
Sent: 8/5/2020 12:19:47 PM
To: Jerry Brown [jbrown@sitesproject.org]
CC: Marcia Kivett [MKivett@sitesproject.org]
Subject: RE: Sites Project - Environmental Water Manager

And I forgot to mention – you are correct on cost reimbursement. This is for their early / pre-consultation effort and EIR efforts. Managing the WSIP benefits is paid for by Prop 1.

John and I are putting together some talking points. Going to run those by Kristal and then get them to you.

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

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Can you assign someone so I can reach out and get them engaged?

Thanks
Jerry

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/5/2020 1:23:27 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: conversation with Stacey Leigh

Hi Ali,

I had a very pleasant call with Stacey Leigh at Reclamation this morning. The following are the key points from our call:

- The Sites project has an existing waiver for time only, requiring a ROD in November 2021. However, the project was put on pause May 1, 2020. When the project is taken off pause, the November 2021 deadline will be moved out, depending on how much time elapsed since paused. In other words, if the project were taken off pause today, we would add 3 months to the schedule. We are obligated to the 1 year timeframe.
- We currently do not have a waiver for page limits since the Draft EIS was already completed when the Secretary's memo was issued (April 2018). If we had gone straight to final, we would still not need to comply with the page limits. Because we are preparing a supplemental Draft EIS, we need to comply with the 2018 memo and page limits (150 pages). Anything more than 150 pages will require a waiver.
- Reclamation procedures don't specifically address supplements to a Draft EIS – there are no provisions to restart the clock even though there are for supplements to a Final EIS. So, in addition to the request for a waiver for page limits, we would also need a new waiver for time.
- Reclamation typically leaves projects on pause as long as possible to push out the time limits until the reason(s) the project was paused can be resolved. In this case, that could be as long as completion of an administrative draft supplemental EIS.
- She also confirmed that, as discussed between Richard Welsh and Jerry, the request for a waiver restarts the clock.

Stacey will be talking to Richard to confirm time limits and the approach to a waiver. She suggested that Reclamation could start drafting the waiver now and broach the topic with appropriate parties, allowing for a chance to explain project complexities and resolve the issue before the project is taken off pause. We will have a follow up call after she discusses this option with Richard.

I mentioned to her that the Authority wants to continue to coordinate on the NEPA approach, that we are considering options - including a NEPA-friendly EIR that could be used to develop a separate EIS, augmented as necessary to meet NEPA requirements. I brought up the need to have a single set of appendices to support both documents and the Authority's desire to have Reclamation review appendices before we finalize the EIR. She was supportive of this concept but mentioned that technical review will need to be provided by other sections of Reclamation so she was not able to commit to all of the reviews. I assume we will have to work with Ryan and Reclamation management to get complete buy-in to the early review process.

Finally, we talked about the updated CEQ NEPA regs and that with the upcoming election and the potential for a new administration the updated Regs could be revised and/or set aside. It may also not be the best time to request a waiver.

If you would like to schedule a follow up to our call yesterday with ICF, let me know. I can also forward the information in this email to ICF – I just wanted you to review and confirm first.

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: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/6/2020 11:40:33 AM
To: Briard, Monique [Monique.Briard@icf.com]
CC: Williams, Nicole [Nicole.Williams@icf.com]; Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: Re: conversation with Stacey Leigh

Hi Monique,

We never had a waiver for page limits. The 2017 Draft EIR/EIS was released before the 2018 Secretarial order setting page limits was issued. Nate was apparently incorrect.

Laurie

On Aug 6, 2020, at 11:27 AM, Briard, Monique <Monique.Briard@icf.com> wrote:

Thank you for the update Laurie – you covered a lot of ground with Stacey during your call. A question I have about your summary is what happened to the 300-page waiver that Nate said that they had in hand? Is it no longer valid because we are now supplementing the EIS vs. finalizing it?

Thanks,
Monique

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, August 5, 2020 3:45 PM
To: Williams, Nicole <Nicole.Williams@icf.com>; Briard, Monique <Monique.Briard@icf.com>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>
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<image001.png>
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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/6/2020 11:51:28 AM
To: Briard, Monique [Monique.Briard@icf.com]
CC: Williams, Nicole [Nicole.Williams@icf.com]; Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
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And yes, preparing a supplemental EIS makes us subject to page limits but preparing a final did not.

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Sites Schedule

Milestone	Date
Perform Operations Analysis for EIR/EIS, BA	July 2020 – November 2020
Re-Analyze Public Benefits	November 2020 – April 2021
Provide Support for Post-Authorization Report	January 2021 – June 2021
Submit State Prop 1 Feasibility Report	July 2021
Complete Plan of Finance and Allocation of Benefits and Costs	August 2021
Receive Confirmation of Local Agency Participation in Prop 1	October 2021
CWC Determination of Prop 1 Construction Funds Eligibility	December 2021
Submit Water Rights Application to SWRCB	January 2022
Issue Final EIR/EIS	March 2022

Sites-Reclamation Coordination

Milestone	Date
Meet with Sites/CVO to Outline Approach for modeling and term sheet	June 19, 2020
Meet to Review Operations Options with Reclamation <ul style="list-style-type: none"> ∞ Project water ∞ Assumed level of federal participation ∞ Operational exchange outline 	July – August 2020
Conduct Operations Analysis to show: <ul style="list-style-type: none"> ∞ Amount of water available ∞ CVP flexibility 	July 2020 – November 2020
Initial Meeting on Post-Authorization Report	December 2020
Establish initial term sheet reflecting final model results and initiate negotiation of commercial terms	January 2021
Final coordinated operations term sheet complete	June 2021
Post-Authorization Report Complete	June 2021
Reclamation Letter of Intent for funding drafted	July 2021
Reclamation Letter of Intent for funding signed	August 2021
Bi-weekly check-ins throughout (may shift to monthly depending on need)	

Comments:

1. Add Federal Project milestones: Cultural, Coordination Act Report, Final EIS, Water Rights, ROD, ESA Consultation, etc.
2. Post Authorization Report and WSIP report will become the same report. Strategize the timing but current suggested completion in 2022.
3. Remove Letter of Intent and replace with Secretary determination of feasibility transmittal letter.

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/6/2020 4:26:38 PM
To: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Luu, Henry [Henry.Luu@hdrinc.com]
Subject: Re: Reclamation Follow-up

Ok thank. Can you make the edits we agree with and review the revisions so we can finalize during our coordination meeting on Tuesday? This revision will represent the baseline schedule we'll review together hereafter.

From: "Heydinger, Erin" <Erin.Heydinger@hdrinc.com>
Date: Thursday, August 6, 2020 at 4:24 PM
To: Jerry Brown <jbrown@sitesproject.org>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>, "Luu, Henry" <Henry.Luu@hdrinc.com>
Subject: RE: Reclamation Follow-up

Yes, Michael and Ryan sent us a few comments (comments on the attached at the bottom). These are based on the meeting we had with them last Thursday – they gave us more feedback verbally. More broadly, they want the schedule to be extended beyond 2021 to include the ROD and want to see it adjusted so that the CWC feasibility is used as the basis for the post-authorization report.

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

hdrinc.com/follow-us

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Thursday, August 6, 2020 4:16 PM
To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Luu, Henry <Henry.Luu@hdrinc.com>
Subject: Reclamation Follow-up

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.

An action item from our last meeting was Michael Mosley providing comments on our side by side schedule. Is this complete?

Talking Points
Meeting with OMB on XX/XX/XX
Regarding the Final Federal Feasibility Report for the Sites Reservoir Project

Summary of points to make regarding the Final Feasibility Report:

- Sites is a state led storage project under the WIIN Act and the Sites Project Authority is the lead agency. Originally authorized under CALFED, Sites most recently was appropriated \$6m of FY19-20 WIIN preconstruction funds.
- To date, Sites participants have committed \$27 million to advance the development of the project – and are committing another \$19 million to cover additional work from September 2020 thru December 2021. Federal commitment over the same time period has been \$10.35m and State funding has been ~\$3M.
- The Final Feasibility Report is in the approval process and covers a range of project configurations with bookends of 1.3MAF to 1.8 MAF reservoir sizes.
- The overall BCR was determined to be 1.06 for the analyzed project configurations and the entire range of alternatives provides a proportional share of federal benefits found to be feasible.
- There are four federal objectives of interest in the project: i) CVP Operational Flexibility Deliveries, ii) Incremental Level 4 Water Supply to CVPIA Refuges, iii) Improvement of Sacramento, Feather, and American River water temperature and flow conditions, and iv) Delta Ecosystem Enhancement.
- A 25% cost share is warranted, although the Authority believes a lesser federal investment will be necessary because of strong local and state interest in the project. These changes in cost sharing would be documented in the post processing.
- The Sites Project Authority continues to conduct its project review and will establish a final project description in mid-2021. The final project will be within the range analyzed in the FFR and a post processing will occur to validate federal interest after Sites determines the final project description. The Sites Project Authority's is reviewing a project configuration estimated to cost approximately \$3 billion – roughly \$2 billion less than previously proposed.

(note on reimbursability: any of the federal benefits that provide for water supply and mitigation would likely be considered reimbursable and be paid by CVP contractors. There is no estimate in the FFR but my estimate is about 20%-40% of the federal investment would be reimbursable by all CVP contractors)

Possible questions that may arise in the conversation with OMB:

1. How will Sites be operated in conjunction with the existing system?

Diversion and release criteria are being established to protect aquatic species in the vicinity of the project while meeting demand requirements of participating local water agencies and environmental water management of the State. The Sites Project Authority will enter into agreements with the SWP and CVP to ensure proper coordination of operations. Once released to the Sacramento River, the flows from the Sites Reservoir “switch hands” from the Authority to the project operator in charge of getting the Sites water to the end user; in the case of a participating member being a state water contractor this would be the SWP and in the case of environmental water this would be California Department of Fish and Wildlife.

2. Will Sites have any impact on the Federal Government’s generation or use of project and/or preference use power?

The Sites project is not reliant on any federal power for pumping Sites water. The Sites Authority intends to purchase market power. There will be some power generation (in-line conduit hydro) as part of the project, however this would offset but not completely eliminate market purchases by the Sites Authority. There may be circumstances where it is advantageous to the CVP to pump CVP water and/or “in lieu CVP water” into Sites Reservoir but this would not increase power consumption for federal water. The timing of exchanges to make additional cold water available in federal reservoirs may delay the generation of power by months, but not reduce such generation on an annual basis.

3. What assurances will be provided to ensure the Federal Government receives the benefits it would be paying for?

The Federal Government would be one of several participants in the Sites Reservoir Project. The project is being developed under the beneficiary pays approach. The Authority will enter into water service contracts with each participant, including Reclamation, to commit to the delivery of benefits each is paying to receive. The State of California is participating in the amount of approximately 27% cost share through its determination under the Prop. 1 Water Storage Investment Program to acquire environmental, flood control and recreation benefits in the project. The Sites Authority will have contracts with state agencies to ensure these benefits are delivered as well.

4. How is the Sites Authority controlling costs to avoid risk of increased costs to the Federal Government?

All participants in the project are responsible for their individual cost share with three different buckets; federal, state and local. The local agencies intend to use pooled debt financing which would include appropriate bond covenants to protect bondholders and remedies for default

which would not crossover to federal or state participants (ie. any default on the local share would stay with other locals to make it up). The federal government would be responsible only for the federal share of the project and the State would be responsible for its share. This applies to capital as well as OM&R. It is preferred that the entire Federal share be paid as a capital contribution so impacts on operations can be avoided due to the uncertainty of annual appropriations.

5. How many water storage projects are being considered under the WIIN Act and what are those projects?

Sites, Temperance Flat, Shasta enlargement, San Luis Reservoir, Friant Kern Canal, Delta Mendota, Pacheco, Del Puerto Canal, and Los Vaqueros; noted other projects in Idaho and Washington. There is ~\$650m of WIIN Act funds available for these projects. Reclamation should establish a ranking criteria and priorities to select projects for the limited amount of WIIN Act funding. We strongly believe Sites would score high in any ranking because of the additional flexibility and resiliency it would create in California's existing water management infrastructure to combat the impacts of climate change.

6. Is the Sites project the most efficient at storing and moving water and how does the project compare to the others out there?

The capital investment in Sites is efficient because of the reliance on existing conveyance; ie the Tehama Colusa Canal and the Glenn Colusa Canal. The storage component is rightsized to the existing conveyance capacity and the restrictive diversion and release criteria protective of aquatic resources. Sites can be an important new piece to state and federal operations because of its proximity to the Delta and its location of releases into the Sacramento River. The CVP and SWP storage reservoirs on the Sacramento, Feather and American Rivers can be managed in coordination with Sites to optimize releases for aquatic protections. Releases are situated perfectly to provide valuable additional water supplies for meeting Delta water quality and restoration efforts through voluntary agreements. Sites has broad and diverse statewide support.

7. Why should state/federal taxpayers pay for these public benefits?

Sites is a cost-efficient means to meet federal obligations under the 1992 CVPIA to supply incremental level 4 water supplies to refuges. Sites can deliver the largest amount of new water supply to meet California Delta restoration efforts. The federal government has a responsibility to support meeting these objectives.

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/7/2020 8:32:20 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: Re: August 18th Water Storage Update for the Water and Environmental Task Force

correct

From: Marcia Kivett <MKivett@sitesproject.org>
Date: Friday, August 7, 2020 at 8:31 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: FW: August 18th Water Storage Update for the Water and Environmental Task Force

I think Kevin said he did not need to review this, but I want to confirm.

From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Monday, August 3, 2020 7:32 AM
To: Marcia Kivett <MKivett@sitesproject.org>
Subject: FW: August 18th Water Storage Update for the Water and Environmental Task Force

Due to Gary on the 14th

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Monday, July 27, 2020 1:52 PM
To: Marcia Kivett <MKivett@sitesproject.org>
Subject: FW: August 18th Water Storage Update for the Water and Environmental Task Force

Please set a reminder for me to get Kevin a draft doc for him to polish by August 10. thanks

From: Gary Darling <gary@darlingh2o.com>
Date: Monday, July 27, 2020 at 11:58 AM
To: Jerry Brown <jbrown@sitesproject.org>, "Marguerite Patil (mpatil@ccwater.com)" <mpatil@ccwater.com>, Garth Hall <ghall@valleywater.org>
Cc: Lindy Lavender <lindy@ebcmail.org>, "mcintyre@dsrsd.com" <mcintyre@dsrsd.com>, "Bob Whitley (rdwhitley@mindspring.com)" <rdwhitley@mindspring.com>, Dave Requa <dave@requa.org>, Dave Richardson <drichardson@woodardcurran.com>
Subject: August 18th Water Storage Update for the Water and Environmental Task Force

Greetings Jerry, Marguerite and Garth. Thanks for agreeing to present to our August 18 Water and Environmental Task Force meeting to bring our members up to speed on the reservoir projects that most impact the Bay Area water supplies. We expect that we will have great attendance (50 plus). The Zoom meeting will start promptly at 8:30 and each presenter will have 20 minutes to talk, then we will open it up to questions with a closing time of 10am.

Since 20 minutes is a pretty short timeframe for you to present and a desire by our team that you all cover similar territory we have the following suggestions on what to cover:

1. Brief project overview (location, size including water supply/storage benefits, schedule and cost)

2. Description of NET environmental benefits that will be used to convince NGOs to support your project and regulatory agencies to permit

2. Challenges to getting to construction including:
 - a. Strategies related to partnerships and funding at the local, state and federal levels
 - b. Strategy on avoiding, minimizing and then mitigating impacts to protected aquatic and terrestrial species in order to accelerate permitting & construction
 - c. Others?

3. Issues that the 3 projects can work together on (e.g.: state and federal funding and timing, regulatory agency priorities, editorials advocating public support, etc.)

4. What can the East Bay Leadership Water and Environmental Task Force do that would be helpful?

Timing:

1. Please provide a brief bio to myself and Lindy by the end of this week (August 31).
2. Please provide your PowerPoint to myself and Lindy by August 14th.

Please do not hesitate to reach out to me if you would like to discuss further. Thanks, Gary

Gary W. Darling
Darling H2O Consulting Inc.
925-382-4350
gary@darlingh2o.com
www.darlingh2o.com



State Water Resources Control Board

August 5, 2020

Kristin White
Operations Manager
Central Valley Project
U.S. Bureau of Reclamation
knwhite@usbr.gov

Molly White
Chief, Water Operations Office
Division of Operations and Maintenance
CA Department of Water Resources
molly.white@water.ca.gov

Dear Ms. White and Ms. White:

**OPERATIONS PLAN TO PROTECT FISH AND WILDLIFE AND OTHER LEGAL
USERS OF WATER FOR STAGE 2 JOINT POINTS OF DIVERSION**

This letter responds to your final June 25, 2020 submittal of an operations plan for the protection of fish and wildlife and other legal users of water (Fish/Water User Protection Plan, or Plan) pursuant to the requirements of State Water Resources Control Board (State Water Board or Board) Decision 1641 (D-1641) for the use of Stage 2 Joint Point of Diversion (JPOD). Your letter transmitting the Fish/Water User Protection Plan requests expedited review in order to move level 4 refuge water during the transfer period this year.

Background

D-1641 allows the Department of Water Resources (DWR) and U.S. Bureau of Reclamation (Reclamation) to use each other's points of diversion in the Delta to divert or redivert water under three stages. All stages of JPOD are subject to the following requirements or preconditions: JPOD is not authorized when the Delta is in excess conditions; JPOD cannot cause specified shifts in the location of X2; the development and implementation of an approved Water Level and Water Quality Response Plan to protect Delta water users; and compliance with all other provisions of DWR's and Reclamation's permits.

Under Stage 2 JPOD, DWR and Reclamation can divert or redivert water at each other's facilities for any purpose authorized under the specified water right permits (up to specified amounts identified in D-1641) subject to development and implementation of an approved Fish/Water User Protection Plan. The Plan is required to include certain measures to protect fish and wildlife from JPOD operations, a consultation process for evaluating potential effects of Stage 2 JPOD operations, measures to protect other legal users of water, and measures to mitigate significant effects on recreation and cultural

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

resources at affected reservoirs. A prior version of the Fish/Water User Protection Plan was approved in 2007 but expired in 2008. There has not been a Fish/Water User Protection Plan in place since that time.

June 2020 Fish Protection Plan

The June 2020 Fish/Water User Protection Plan discusses two different time periods for protection of fish and wildlife – July through September when fisheries concerns in the Delta are more minimal, and October through June when fisheries concerns are more elevated. The Plan relies on the current Biological Assessments (BA)/Biological Opinions (BiOps) for operations of the Central Valley Project (CVP) and State Water Project (SWP), the Incidental Take Permit (ITP) for the SWP, compliance by Reclamation with State Water Board Water Right Order 90-5 related to Sacramento River temperature management, and compliance by DWR with the 1983 Agreement for operations on the Feather River and the new license for Oroville FERC Project No. 2100 when it becomes effective. The Plan indicates that existing consultation processes for the BA/BiOps and ITP will also be relied upon for Stage 2 JPOD operations, including consultation with the Water Operations Management Team (WOMT) for any disagreement or unresolved concerns about JPOD actions.

For the protection of other legal users of water, the Plan indicates that DWR and Reclamation will comply with the conditions of the Water Level Response Plan and Water Quality Response Plan to protect Delta water users. The Plan indicates that all allegations of harm from water users will be forwarded to the State Water Board and that if allegations of harm are contested by Reclamation and/or DWR, or if effective incremental mitigation cannot be provided in a timely manner, the issue will be immediately forwarded to the Executive Director of the Board for resolution. To protect cultural resources, the plan states that JPOD will not occur if it would cause reservoirs to be drawn down to or below historic minimum elevations. To protect recreational resources, the plan states that JPOD will not occur if DWR or Reclamation are unable to implement actions required to avoid reservoir level recreational impacts and that any unresolved disputes will be forwarded to the Executive Director of the Board for resolution.

Interim Conditional Approval of the June 2020 Fish Protection Plan

The State Water Board understands the need for expedited review of the Fish/Water User Protection Plan in order to allow for the delivery of wildlife refuge and other water supplies this year (deliveries of refuge supplies are anticipated to occur in September). However, additional time is needed to fully consider the adequacy of the Plan before final approval, particularly during the October through June time period when fisheries concerns are elevated and water transfers, which are similar to JPOD, are generally not permitted under the BiOps/ITP. Accordingly, the Plan is approved on an interim basis through September 30, 2020, subject to the conditions of D-1641 and the additional conditions below. Board staff will follow-up to further discuss issues associated with approval of the Fish/Water User Protection Plan after September.

Additional Conditions of Interim Approval:

1. State Water Board staff shall be permitted to fully participate in the Water Operations Management Team (WOMT), Sacramento River Flow Scheduling Team, and other groups that discuss Project operational effects on fish and wildlife species referenced in the Fish/Water User Protection Plan, including new groups that may be formed that discuss these issues.
2. Designated State Water Board staff shall be notified regarding the volume, timing, source, and destination of Stage 2 JPOD diversions in advance of such operations. In addition, any other information requested by State Water Board staff to ensure that Stage 2 JPOD diversions will be conducted in conformance with D-1641 requirements shall also be provided.
3. Designated State Water Board staff shall be immediately notified of any concerns related to adverse effects to fish and wildlife, other legal users of water, recreation, or cultural resources related to Stage 2 JPOD diversions.
4. All Stage 2 JPOD diversions are subject to the provisions of DWR and Reclamation's December 2019 Draft Transfer White Paper.
5. The Executive Director retains continuing authority to limit Stage 2 JPOD diversions to prevent adverse effects to fish and wildlife, other legal users of water, recreation, or cultural resources.

The staff that should be notified regarding Stage 2 JPOD operations include the Deputy Director for the Board's Division of Water Rights (Division) Erik Ekdahl (erik.ekdahl@waterboards.ca.gov), Assistant Deputy Director for the Division Diane Riddle (diane.riddle@waterboards.ca.gov), and the Division's Bay-Delta Section Program Manager Matthew Holland (matthew.holland@waterboards.ca.gov).

If you have questions regarding this matter, please contact Diane Riddle at diane.riddle@waterboards.ca.gov. Please be aware that due to the public health concerns regarding the COVID-19 virus and the resulting pandemic, many Board staff are telecommuting; therefore, the best avenue of communication at this time is via email.

Sincerely,

ORIGINAL SIGNED BY

Eileen Sobek
Executive Director
State Water Resources Control Board

Attachment 3
JPOD FPP - 06/24/20

2019 Proposed Action (PA) Biological Opinion and 2020 DFW ITP Thresholds

Species	Threshold Description	PG #
Natural Winter-run Chinook salmon	Incidental Take Limit. Loss of 1.3% of the JPE on the three-year rolling average or 2.0% of the JPE in any single year	NMFS 810.
Natural Winter-run Chinook salmon	1.17% annual loss of unclipped (natural) winter-run Chinook salmon JPE	DFW 8.6.1 Pg 87, PA 4-69
Natural Winter-run Chinook salmon	Early season Discrete Daily Loss Threshold From November 1 – November 30: 6 older juvenile Chinook salmon From December 1 – December 31: 26 older juvenile Chinook salmon	DFW 8.6.2 Pg. 89
Natural Winter-run Chinook salmon	Mid and Late Season Daily Loss Threshold 1/1 - 1/31: 0.00635% loss of the winter-run Chinook salmon JPE 2/1 - 2/28: 0.00991% loss of the winter-run Chinook salmon JPE 3/1 - 3/31: 0.0146% loss of the winter-run Chinook salmon JPE 4/1 - 4/30: 0.00507% loss of the winter-run Chinook salmon JPE 5/1 - 5/31: 0.0077% loss of the winter-run Chinook salmon JPE	DFW 8.6.3 Pg 90
Natural Winter-run Chinook salmon	Loss = 50% of 1.17% of JPE = TBD annually	PA 4-70
Natural Winter-run Chinook salmon	Loss = 75% of 1.17% of JPE = TBD annually	PA 4-70
Natural Winter-run Chinook salmon	8,738 cumulative loss threshold over duration of biological opinion (assumed to be 10 years)	PA 4-68, 70
Natural Winter-run Chinook salmon	DCC gate ops based on Older juveniles by LAD, 3 and 5 fish/day for KLCI and SCI	NMFS 417, PA 4-56
Hatchery Winter-run Chinook salmon	Incidental Take Limit. Loss of 0.8% of the estimated hatchery JPE (fish surviving to the Delta) from LNSFH released into the upper Sacramento River on a three-year rolling average or 1.0% of the JPE in any single year.	NMFS 810
Hatchery Winter-run Chinook salmon	Incidental Take Limit. Loss of 0.8% of the estimated hatchery JPE (fish surviving to the Delta) from LNSFH released into Battle Creek on a three-year rolling average or 1.0% of the JPE in any single year	NMFS 810
Hatchery Winter-run Chinook salmon	Loss = 0.12% of JPE for the Sacramento River release group = TBD annually	DFW 8.6.1 Pg. 87, PA 4-69

Attachment 3
JPOD FPP - 06/24/20

Hatchery Winter-run Chinook salmon	Loss = 50% of 0.12% of JPE for the Sacramento River release group = TBD annually	DFW 8.6.1 Pg. 87, PA 4-70
Hatchery Winter-run Chinook salmon	Loss = 75% of 0.12% of JPE for the Sacramento River release group = TBD annually	DFW 8.6.1 Pg. 87, PA 4-70
Hatchery Winter-run Chinook salmon	5,356 cumulative loss threshold for the Sacramento River Release Group over duration of biological opinion (assumed to be 10 years)	PA 4-69/4-70
Yearling Spring-run Chinook salmon	Loss of 0.5% of any release group of late fall-run Chinook from CNFH released into Battle Creek. Also known as the Spring-run surrogates.	NMFS 810
Yearling Spring-run Chinook salmon	Incidental Take Limit. Loss of 1% of any release group of late fall-run Chinook from CNFH released into Battle Creek. Also known as the Spring-run surrogates.	NMFS 810
Hatchery YOY Spring-run Chinook salmon	Daily Hatchery Surrogate Loss Threshold Feather River Hatchery coded wire tagged (CWT) CHNSR surrogates (includes both spring- and fall-run hatchery release groups) cumulative loss at the at the CVP and SWP salvage facilities is greater than 0.25% for each release group, OR Coleman National Fish Hatchery and Nimbus Fish Hatchery CWT fall-run release groups cumulative loss at the at the CVP and SWP salvage facilities is greater than 0.25% of the total in-river releases for each release group.	DFW 8.6.4 Pg. 90-91
Natural Steelhead	Incidental Take Limit. December 1 – March 31. Loss of 1,571 natural steelhead as a three-year rolling average or total loss of 2,760 in any single year	NMFS 810
Natural Steelhead	Incidental Take Limit. April 1 – June 15. Loss of 1,725 natural steelhead as a three-year rolling average or total loss of 3,040 in any single year	NMFS 810
Natural Steelhead	Loss = 50% of 1,414 = 707 December 1 – March 31 Loss = 50% of 1,552 = 776 April 1- June 15	NMFS 479, 548 PA 4-70
Natural Steelhead	Loss = 75% of 1,414 = 1,060.5 December 1 – March 31 Loss = 75% 1,552 = 1,164 April 1- June 15	NMFS 479, 548 PA 4-70
Natural Steelhead	6,038 cumulative loss between December 1 – March 31 over the duration of the biological opinion (assumed to be 10 years)	PA 4-69
Natural Steelhead	5,826 cumulative loss between April 1- June 15 over the duration of the biological opinion (assumed to be 10 years)	PA 4-69

Attachment 3
JPOD FPP - 06/24/20

Green sturgeon	Incidental Take Limit. Salvage of 74 juvenile green sturgeon.	NMFS 810
Delta Smelt	'First Flush' Dec. 1 - Jan. 31- Three-day Freeport daily flow running avg \geq 25,000 <u>AND</u> - [Three-day Freeport turbidity running avg \geq 50 NTU OR Smelt Monitoring Team recommendation]	DFW 8.3.1
Delta Smelt	Dec. 1 - Apr. 1 - Avg. OBI turbidity > 12 NTU - Weekly Risk Assessment described in 8.1.5.2	DFW 8.5.1
Delta Smelt	Larval and/Juvenile Delta Smelt Protection - 5-day cum. salvage of juv. DS \geq [average 3-yr FMWT index + 1] (Rounded Down) = 1= -Weekly Risk Assessment described in 8.1.5.2	DFW 8.5.2
Longfin smelt	Dec. 1 - Feb. 28 - Cum. salvage > [most recent FMWT/10] = 1.2 fish <u>OR</u> - Smelt Monitoring Team determines high likelihood of LFS movement into high-risk areas	DFW 8.3.3
Longfin Smelt	Onset of OMR management – Feb. 28 - Weekly Risk Assessment described in 8.1.5.2	DFW 8.4.1
Longfin Smelt	Jan 1 – June 30 -Larvae or juveniles detected at four or more of the 12 SLS or 20mm survey stations in the south and central Delta (Stations 809, 812, 815, 901, 902, 906, 910, 912, 914, 915, 918, 919), or -Catch per tow exceeds five larvae or juveniles at two or more of the 12 SLS or 20mm Survey stations in the south or central Delta -Weekly Risk Assessment described in 8.1.5.2	DFW 8.4.2

Appendix C Real-Time Water Operations Charter

C.1 PURPOSE

The “Core Water Operation” serves as the foundation for meeting the requirements of D-1641 and providing for Reclamation and DWR to operate the CVP and SWP while reducing the stressors on listed species influenced by the ongoing operation of the CVP and SWP. For the Core Water Operation, Reclamation would implement activities, monitor performance, and report on compliance with the commitments in the Proposed Action. Implementing the Core Water Operation will require coordination between CDFW, DWR, FWS, NMFS, and Reclamation (collectively, the “5 Agencies”) and stakeholders. This Charter describes how the 5 Agencies and stakeholders will plan, communicate, and coordinate real-time water operations decisions on the Core Water Operation for the ROC on LTO.

C.2 BACKGROUND

Investments in science, monitoring, and decision support tools since the 2008 and 2009 BiOps provides the ability to reduce reliance on professional opinion and increase the use qualitative and quantitative models to assess risk in real-time based on the real-time monitoring of species and relevant other physical and biological factors. While Reclamation and DWR hold the responsibility for operating the CVP and SWP, many agencies and organizations assist in monitoring field conditions to provide information that assists in real-time decisions. Communication on real-time conditions and the implementation of water operations provides assurance that Reclamation and DWR are meeting the commitments within the Proposed Action.

C.3 SCOPE

Portions of the Core Water Operation rely upon real-time monitoring to inform Reclamation and DWR on how to minimize and/or avoid stressors on listed species. The Proposed Action seeks to take advantage of the expertise within the federal and state fisheries agencies in the real-time monitoring of species distribution and life-stage. Reclamation and DWR would then use qualitative and quantitative tools to perform risk analyses that inform operations. Actions within the Core Operation to address stressors on listed species seasonally and in real-time include, for example, Old and Middle River Flow Management, Shasta Cold Water Pool Management, and Delta Cross Channel Gate Operations.

Some elements of the Core Water Operation provide for seasonal input by the federal and state regulatory agencies on the scheduling and routing of certain flow volumes to benefit fisheries. Actions include, for example, Stanislaus pulse flows, Suisun Marsh Salinity Control Gate operation for Delta Smelt fall habitat, and restoration of rearing habitat.

The Core Water Operation in the Proposed Action provides for regulatory coordination if real-time conditions exceed the ability to anticipate how Reclamation and DWR would operate (“Outliers”). Outliers include, for example, insufficient cold water pool in Shasta Reservoir to support a winter-run

Chinook salmon year class and the need for conservation measures such as trap and haul and/or hatchery production.

Reclamation and DWR must demonstrate compliance with the commitments in the Proposed Action and provide sufficient information for an evaluation of reinitiation triggers through regular monitoring and reporting. New information and changing conditions may exceed a reinitiation trigger and could require subsequent consultation. Examples of for compliance include seasonal and annual reporting.

Program Teams will implement conservation measures. These Program Teams will include representatives from agencies and stakeholders.

C.4 TERM

The term of this Charter is the duration of the ROC on LTO Biological Opinion (2030).

C.5 DELIVERABLES

One or more groups under this Charter shall be responsible for the products on the schedule identified below. Exhibits A through XX to this Charter identify the requirements for each deliverable.

1. Monitoring Program for Core Water Operations, Ongoing
2. December - June, Weekly and Biweekly, Real-Time Species Distribution and Life Stage
3. Monthly (and as needed), Water Operation Status
4. Monthly (and/or as needed), Specific operations for:
 - a. Old and Middle Reverse Flow Storm Events (Dec. - June)
 - b. Shasta Cold Water Pool Management (May - Oct.)
 - c. Folsom Cold Water Pool Management (May - Oct.)
 - d. Delta Smelt Fall Habitat and Suisun Marsh Salinity Control Gates (May)
5. As Needed, Coordination on Outlier Years
6. Annually, As Needed, Habitat Restoration Updates
7. Seasonal and Annual Compliance Reporting
 - a. December, Shasta Cold Water Pool Management
 - b. June, Shasta Cold Water Pool Rebuilding and Spring Pulse
 - c. September, Annual Summary of Water Supply and Fish Operations

Reclamation and DWR will continue to provide standard reporting on real-time operations, environmental conditions, and biological parameters, such as species distribution, life stage, and dynamics. These data are available daily through Reclamation and DWR websites and additional tools such as CDEC, NWIS, RWIS, SacPAS, Bay-Delta Live, and SHOWR.

This Charter provides the monitoring and water operations information that will be available as part of the Core Operation. Additional monitoring or water operations information, beyond the scope of this

Charter, may be required for tracking the status and trends of species and for efforts beyond operation of the CVP and SWP.

C.6 PARTICIPANTS

Action Agencies: Reclamation and DWR

Regulatory Agencies: USFWS, NMFS, CDFW, SWRCB, ACOE, DSC

Stakeholders: Public Water Agencies

C.7 DECISION MAKING

Nothing in this Charter modifies the rights and responsibilities of the Participants. Decisions shall be made consistent with the authorizing legislation and the regulations and policies under the federal and state Endangered Species Acts, as appropriate.

Reclamation and DWR shall retain sole discretion for:

- Water Operations of the CVP and SWP, including Allocations, under Reclamation Law and the State Water Project, as appropriate
- Agency Appropriations (budget requests, fund alignment, contracting, etc.)
- Section 7 Action Agency and Applicant (consultation)
- Coordination and cooperation with PWAs as required by Contracts and Agreements

CDFW, FWS, and NMFS shall retain sole discretion for:

- Consultation under Section 7 of the federal ESA and California Fish and Game Code, as appropriate and the associated Incidental Take Statements/Permits
- Agency Appropriations

State Water Resources Control Board

- Enforcement as allowable under federal and state law.

Operating Entities other than CVP and SWP shall retain sole discretion for:

- Operation of Non-CVP and Non-SWP Diversion Facilities
- Contract and/or Agreement Terms
- WIIN Act Requirements

If Reclamation determines to modify the proposed action, Reclamation will evaluate changes to one or more elements of the proposed action based on the reinitiation triggers provided by 50 CFR 402.16. These triggers include:

- (a) If the amount or extent of taking specified in the incidental take statement is exceeded;

- (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- (c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
- (d) If a new species is listed or critical habitat designated that may be affected by the identified action.

Consistent with 50 CFR 402.16, the FWS and/or NMFS may also reinitiate formal consultation. Reclamation will coordinate with DWR as the “Applicant”.

Reclamation will continue to coordinate with the Delta Stewardship Council and US Army Corps of Engineers as appropriate, including venues such as the Interagency Ecological Program. Other agencies that may be involved in monitoring include the US Geological Survey.

C.8 ORGANIZATION

The organization of water operations and related species recovery in the Central Valley spans a number of overlapping programs across federal, state, and local entities as well as the public. The Core Water Operation anticipates increasing levels of coordination under efforts such as Voluntary Agreements, the Adaptive Management Framework developed under California Water Fix, and the Delta Science Plan. The Core Water Operation does not rely upon any specific structure, but is designed to support the following functions:

- Adaptation:
- Integration:
- Implementation:

Figure C.8-1 shows the different functional needs.

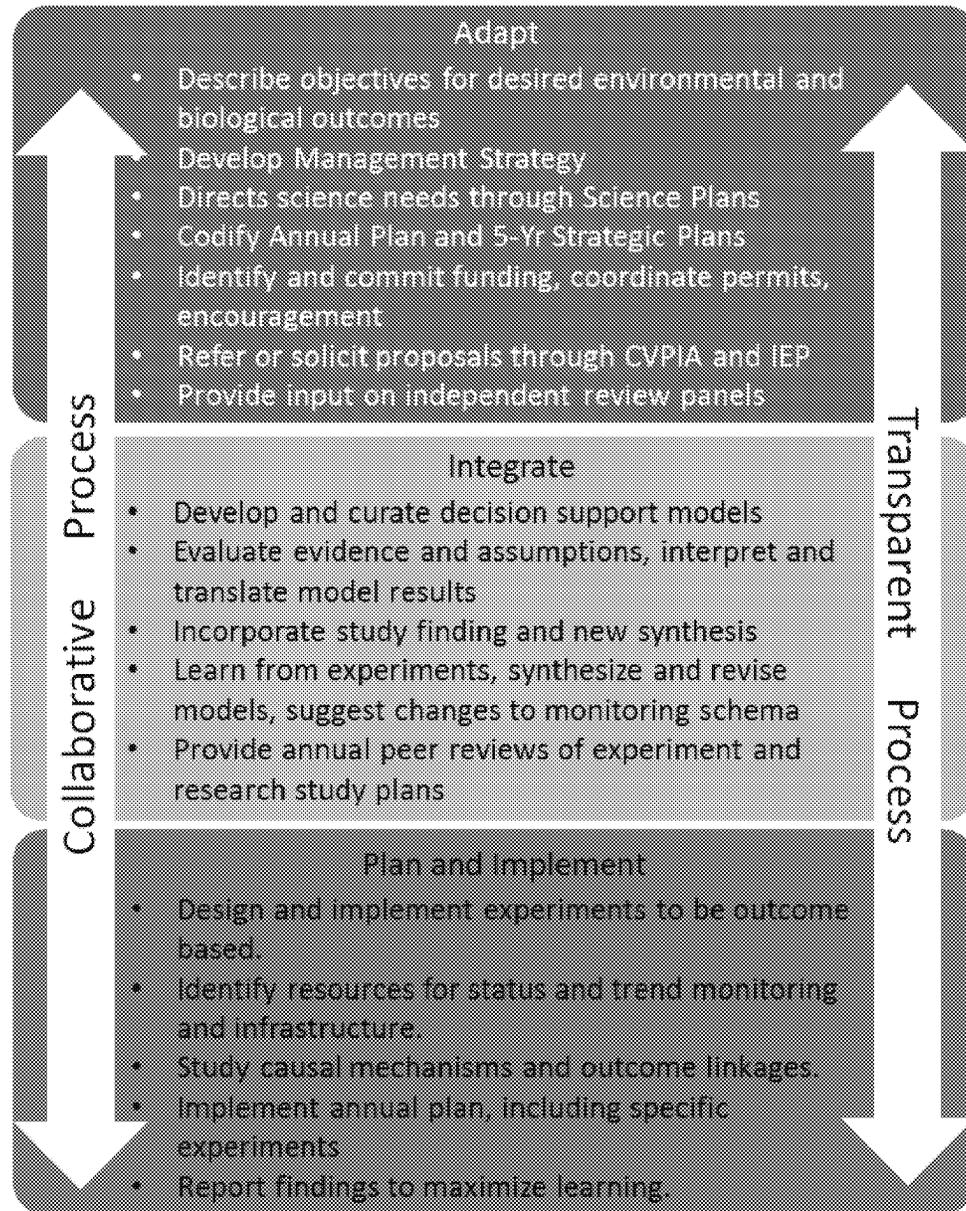


Figure C.8-1. Activities for the Implementation of Water Operations and Species Recovery

The major overarching forums where Reclamation coordinates with partner agencies and stakeholders include the Central Valley Project Improvement Act (focused primarily on tributary actions), Interagency Ecological Program (focused primarily on Delta actions), and the Collaborative Science and Adaptive Management Program. Each forum includes workgroups and teams for specific needs. Figure C.8-2 shows how the functions align with existing programs and activities and includes a role for Independent Review. The Core Water Operations maintains, modifies, and establishes specific workgroups and teams in consideration of existing programs and groups, but does not depend upon the existing programs and groups.

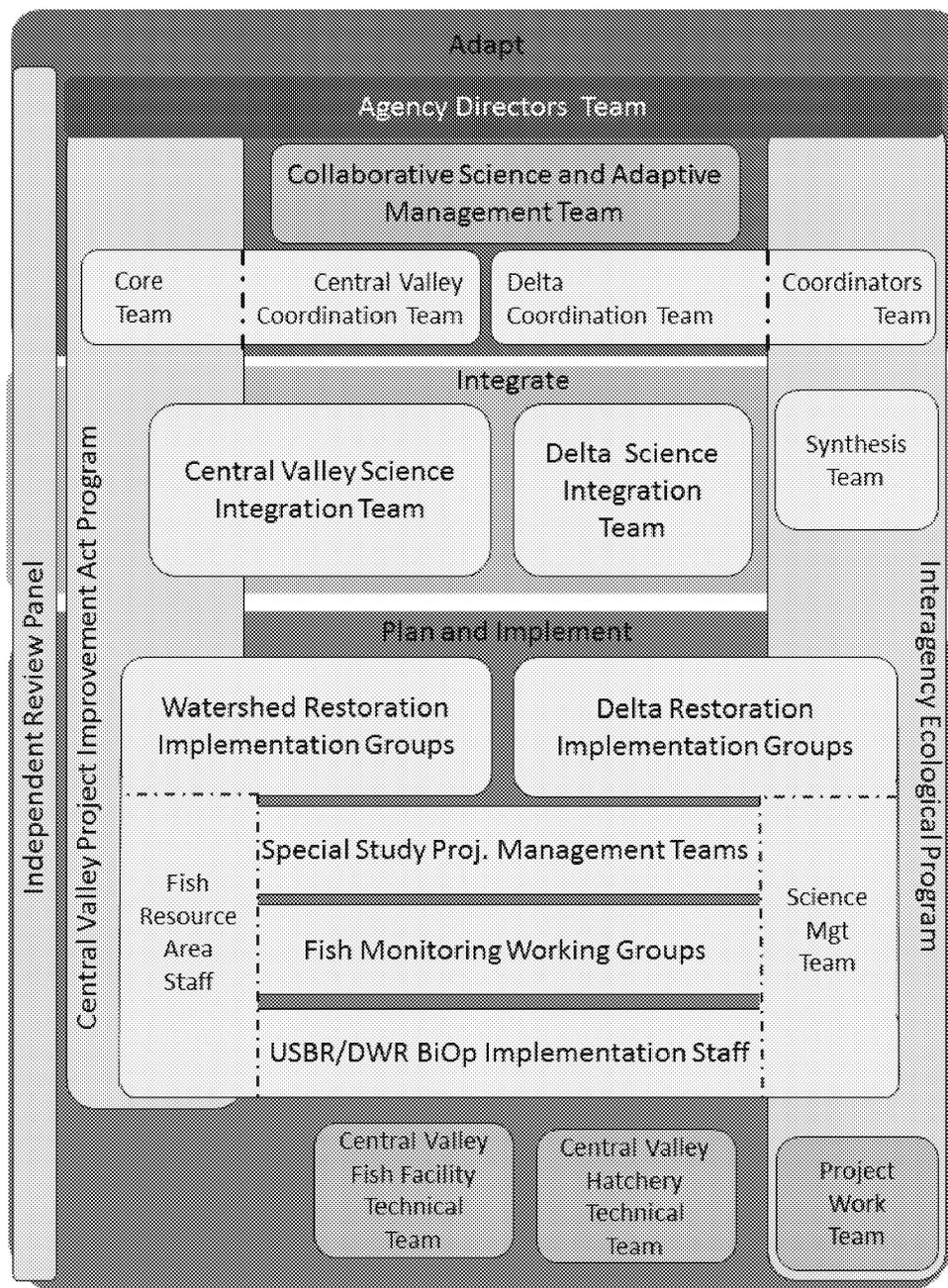


Figure C.8-2. Existing Programs and Groups within the Functions of Water Operations and Species Recovery

Consistent with the Proposed Action, Reclamation and DWR propose to convene Watershed Monitoring Workgroups for each of the Upper Sacramento, American, Delta, and Stanislaus watersheds (“Watershed Monitoring Workgroups”). Each of the Watershed Monitoring Workgroups will be responsible for real-time synthesis of fisheries monitoring information and providing recommendations on scheduling specific volumes of water as specified in the Proposed Action. The Delta Monitoring Workgroup shall be responsible for integrating species information across watersheds, including Delta Smelt and Winter-run Chinook, and other salmonids and sturgeon. In addition to Delta Watershed Monitoring Workgroup, the program may include a Smelt Monitoring and Salmonid Monitoring Teams. The Watershed Monitoring

Workgroups will include technical representatives from federal and state agencies and stakeholders and will provide information to Reclamation and DWR on species abundance, species distribution, life stage transitions, and relevant physical parameters.

A Water Operations Management Team (WOMT) comprised of agency managers will coordinate on overall water operations to oversee the implementation of various real-time provisions. The WOMT shall be responsible for overseeing the Watershed Monitoring Workgroups and elevating disagreements to the Directors of the 5 agencies where necessary.

- Directors
- WOMT
- Watershed Monitoring Workgroups
 - Sacramento River Temperature Task Group
 - American River Group
 - Stanislaus Operating Group
 - Delta Monitoring Workgroup
 - Smelt Monitoring Team
 - Salmon Monitoring Team
 - Program Teams

The WOMT shall coordinate the preparation of seasonal and annual reporting in coordination with the Watershed Monitoring Teams

C.9 PROCESS

The coordinated operation of the CVP requires the following functions for the Core Water Operation.

- Monitoring (Exhibit A)
 - Real-Time Physical and Biological Parameters (Species Distribution and Life-Stage)
 - Long-Term Proposed Action Performance Monitoring
- Water Operation Decisions
 - Projections based on Forecasts and Real-Time Reporting
 - Scheduling Recommendations for Specific Blocks of Water
 - Outlier Conditions and Coordination
- Seasonal Reporting
 - Fall Cold Water Pool Management and Winter- and Fall-run Redd Dewatering
 - Spring Pulse and Shasta Storage Rebuilding
- Annual Reporting and Evaluation of Reinitiation Triggers
- Targeted Consultation, if Required

In October, Reclamation will coordinate with Sacramento River Settlement Contractors (SRSCs) to lower peak diversions for rice decomposition by spreading diversions over a longer time period. Reclamation will and evaluate winter-run redd dewatering in the current year against the probability of sufficient cold water in the subsequent year based on end of September Shasta storage. Reclamation and DWR will also manage for fall Delta Smelt habitat. By the end of December, Reclamation will post a seasonal report on Shasta Cold Water Pool Management.

In December and/or January, the onset of Old and Middle River Reverse Flow Management begins depending on the real-time distribution of species. Reclamation and DWR will manage exports to limit entrainment and to take advantage of storm flows. Reclamation will post a risk analysis for each time Reclamation increases exports to capture peak storm flows. If conditions fall within the bounds of the Proposed Action, Reclamation and DWR will increase exports. If conditions exceed the criteria in the Proposed Action and Reclamation and DWR desire to increase exports, Reclamation and DWR will seek technical assistance from CDFW, FWS, and NMFS.

In February, consistent with contracts and agreements, Reclamation will create and post a projection of water operations using, at minimum, a 90% forecast to determine whether a Shasta-Critical year is in effect and make an initial allocation. The projection will include, at minimum, the likelihood of a spring pulse flow on the Sacramento River and the likelihood for each tier of Shasta cold water pool management based on potential storage levels. If the projection identifies a Tier 4 year, Reclamation will coordinate and seek technical assistance from NMFS and coordinate with CDFW and FWS. In each March, April, and May, Reclamation will update and post the projection.

Starting in April and no later than the end of May, depending upon when stratification of Shasta Reservoir occurs, Reclamation shall post a seasonal report on the refill of Shasta and prepare a Shasta Cold Water Pool Management Plan in coordination with the Sacramento River Temperature Task Group. The Shasta Cold Water Pool Management Plan will include the projected Shasta cold water pool management tier at the 90% confidence level. If the projection identifies a Tier 4 year, Reclamation will seek technical assistance from NMFS and coordinate with CDFW and FWS.

Starting in April, and no later than the end of May, depending upon stratification of Folsom Reservoir, Reclamation shall prepare a Folsom Cold Water Pool Management Plan in coordination with the American River Group. If the Folsom Cold Water Pool Management Plan is unable to meet a daily average water temperature of 65°F or lower at Watt Avenue Bridge from May 15 through October 31, Reclamation will use the ARG and elevate to WOMT.

In each month, through October, Reclamation will update and post the Shasta Cold Water Pool Management Plan.

In May, Reclamation and DWR shall coordinate a plan for the Operation of the Suisun Marsh Salinity Control Gates to create habitat for Delta Smelt and/or off-ramp flows if conditions do not warrant habitat for Delta Smelt.

By the end of September, Reclamation shall post an annual report that covers the prior fall/winter seasonal operation, spring operation, and summer conditions. The annual report will include a determination on whether there is new information on the effects of the Proposed Action or a desire to modified the Proposed Action that warrants targeted reinitiation on one or more components of the Proposed Action.

C.10 DISPUTE RESOLUTION

In the event of a dispute within any of the groups, the groups will elevate the dispute to the WOMT for resolution. In the event the WOMT cannot resolve the dispute, the WOMT will elevate to the Directors.

C.11 AMENDMENTS

Reclamation, in coordination with DWR, may amend this Charter at any time and will provide at minimum 2 weeks' notice. Amendments may trigger reinitiation of consultation consistent with 50 CFR 402.16.

C.12 DEPENDENCIES

The Proposed Action coordinates actions within the following forums that are beyond the sole control of Reclamation and DWR.

- CVPIA Fish Resource Area Programs - Monitoring, restoration, and special studies
- Interagency Ecological Program - Permitting and Coordination for Physical and Biological Monitoring
- Collaborative Science and Adaptive Management Program - Synthesis

In the event the above groups are unwilling or unable to provide for the commitments in the Proposed Action, Reclamation and DWR will confer with CDFW, FWS, and NMFS on alternative implementation paths.

C.13 SIGNATURES

To be updated.

Exhibit A - Monitoring Program for Core Operations

Monitoring Program for Core CVP and SWP Operation

This monitoring program for the Core Water Operation of the CVP and SWP identifies the information required for:

- Real-time water operations,
- Demonstrating compliance with Core Water Operation commitments in the Proposed Action, and
- Evaluating re-initiation triggers.

Additional monitoring to determine status and trends of species and understanding ecosystem interactions may occur through other processes, such as Voluntary Agreements and/or existing water quality permits, are listed, but are not explicitly relied upon for the Core of the Proposed Action. Reclamation and DWR may accomplish the monitoring through agreements with other agencies, partnerships with local water users, and/or contracts with private entities.

This Core Monitoring Program considers the information developed by the Salmon and Sturgeon Assessment of Indicators by Lifestage (SAIL) Program (Johnson et al. 2017) and the Enhanced Delta Smelt Monitoring (EDSM) Program (cite). This Core Monitoring Program focuses on the functions met by the different efforts and use the current technologies as examples that meet the functions. Additionally, the Core Monitoring provides support for the necessary studies to develop annual incidental take limits. Monitoring methodologies may change as technology advances or research supports better protocols.

Core Water Operations

Core water operations include Shasta and Folsom Cold Water Pool Management, Delta Cross Channel Gate Operations, Old and Middle River Reverse Flow Management, and Delta Smelt Fall Habitat. Physical information for real-time operations includes:

- Delta Flow, Temperature, Turbidity, and Salinity Stations
- Tributary Flow and Temperature Stations
- Folsom Reservoir Temperature Profiles
- Shasta Reservoir Temperature Profiles

Biological information required for real-time operations includes:

- Chinook Salmon
 - Redd Timing and Location: Provides the spatial and temporal risk of mortality for the different flow and temperature regimes as well as the potential for dewatering. Currently accomplished through weekly visual surveys that identify new redds by reach.

- Carcass Surveys: Supplements the redd surveys to account for unobserved redds to help assess the significance of individual redds. Currently accomplished by field crews per well established protocols on the number of adults and the proportion that are female.
- Juvenile Abundance and Timing: Identifies the production of juveniles salmonids (Red Bluff Diversion Dam), migration of salmon for operation of the Delta Cross Channel (Knights Landing Rotary Screw Trap), and the implementation of OMR reverse flow actions (Sacramento Trawl and Chipps Island Trawl).
- Delta Distribution: Informs OMR actions and is currently supported through beach seines, acoustic tagging, and some EDSM.
- Salvage Count: Informs the direct effects on listed fish
- Genetic Identification: Informs the salvage of listed Chinook salmon species versus non-listed Chinook salmon species.
- Delta Smelt
 - Turbidity Stations: Informs the potential for a “turbidity bridge” that would inform OMR Actions.
 - Temperature Stations: Informs the transition between life stages and the need for protective measures.
 - Water Quality Stations: tracks the movement of the low salinity zone and parameters associated with the food web, e.g. chlorophyll.
 - Delta Distribution: Informs the entrainment risk due to OMR actions and is currently would be supported by EDSM.
 - Fish Condition: Informs when adults have spawned and the need for larval protections.
- Steelhead
 - American River and Clear Creek Redd Surveys
 - Salvage Count
- Sturgeon
 - Salvage Count

Table C-1 lists the current programs in place that would support Core Water Operations for the ROC on LTO.

Table C-1. Real-time monitoring

ID	Monitoring Program	Typical Time Of Year Operating	Target Species/Parameter	Site/Region
1	Adult Spring Chinook Escapement Monitoring in Clear Creek.		Chinook carcass and weir abundance counts	Clear Creek
2	Red Bluff Diversion Dam Rotary Screw Trap Juvenile Monitoring Program	January - December	Juvenile Chinook salmon productivity	Red Bluff Diversion Dam, American River, Stanislaus River
3	Juvenile Salmon Emigration Real-time Monitoring (Seines and Trawls)	October 1- November 30	Juvenile Chinook and steelhead relative abundance	North Delta
4	Juvenile Salmon Delta Abundance Trawling (expanded DJFMP trawling)	December-May	Juvenile Chinook salmon abundance and condition	Sacramento and Chipps trawl
5	Genetic Identification of Salmonids and Smelt to Inform Central Valley Project Operations and Bay-Delta Monitoring	January-December	Chinook salmon and Smelt diversity	Central Valley (RBDD to Chipps Island)
6	Lower Sacramento River Juvenile Salmon and Steelhead Monitoring Project	August - June	Juvenile Chinook salmon and Steelhead distribution and productivity	Middle Sacramento River at Knights Landing
7	Winter-run Chinook Salmon Escapement Monitoring	May-August	Winter-run Chinook carcass and redd abundance and distribution	Sacramento
8	Fish Salvage Operations	January - December	Juvenile Fish abundance	CVP and SWP Delta Fish Protection Facilities
9	Enhanced Delta Smelt Monitoring	January-December	Delta Smelt abundance, distribution, condition, and productivity	San Francisco Estuary
10	Delta Flow Measurement and Database Management	January - December	Flow and water quality	Bay-Delta
11	Operation of Thermograph Stations	January - December	Temperature and sediment loads	
12	Hatchery Marking (100% Tagging)		Winter-run Chinook, Spring-run Chinook Salmon, Late-Fall Chinook salmon, Steelhead	Livingston Stone National Fish Hatchery, Feather River Hatchery, Coleman National Fish Hatchery, Nimbus Hatchery

Effects to listed fish due to CVP and SWP operations would be expected from decisions on winter-run temperature dependent mortality to preserve future year classes, redd dewatering to preserve fall-run future winter-run year classes, habitat parameters within the Delta, and salvage at the Delta pumping

facilities of all species. As many effects depend upon hydrology and meteorology beyond the control of Reclamation and DWR, effects would be compared based on the range of conditions within a water year.

Status and Trend Monitoring

Status and trend monitoring characterizes the population of species and their environments over time include the effects of stressors from sources other than the CVP and SWP. Recovery plans characterize the status and trends differently depending upon the species in the general categories of abundance, production, life history diversity, and geographic diversity. In addition to the Core Monitoring, a number of additional programs are anticipated to continue, the majority of which are supported by Reclamation and DWR for CVP, SWP, and Delta watersheds:

- Hatchery Proportion (Constant Fractional Marking)
- Genetic Analyses of California Salmonid Populations: Parentage Based Tagging (PBT) of salmonids in California Hatcheries
- Fall Midwater Trawl
- 20-mm Survey monitoring to determine distribution and relative abundance of Delta Smelt and Longfin Smelt
- Spring Kodiak Trawl
- Estuarine and Marine Fish Abundance and Distribution Survey
- Smelt Larva Survey (SLS)
- Summer Townet Survey
- Environmental Monitoring Program (EMP)

Table C-2. Status and Trends Monitoring

ID	Monitoring Program	Typical Time of Year Operating	Target Species/Parameter	Site/Region
13	Hatchery Proportion (Constant Fractional Marking)		Fall run Chinook salmon	Coleman NFH, Nimbus Hatchery, Feather River Hatchery
14	Genetic Analyses of California Salmonid Populations: Parentage Based Tagging (PBT) of salmonids in California Hatcheries		Hatchery Steelhead	Coleman NFH, Nimbus Hatchery, Feather River Hatchery
15	Fall Midwater Trawl monitoring	September - December	Pelagic fish	San Pablo Bay and Delta
16	20-mm Survey monitoring to determine distribution and relative abundance of Delta Smelt and Longfin smelt	March - July	Delta Smelt and Longfin Smelt	Sacramento-San Joaquin Delta and Upper Estuary
17	Spring Kodiak Trawl	January - May, December	Delta Smelt	
18	Estuarine and Marine Fish Abundance and Distribution Survey (Bay Study)	January - December	Fish and macroinvertebrates	San Francisco Bay and lower Sacramento and San Joaquin Rivers
19	Smelt Larva Survey (SLS)	January - March	Longfin Smelt larvae	Bay-Delta, Suisun Bay, Suisun Marsh
20	Summer Towntnet Survey	June - August	Young pelagic fish and water quality	Upper San Francisco Estuary, San Joaquin River, lower Sacramento River
21	Environmental Monitoring Program	January-December	Water quality, chlorophyll, phytoplankton, invertebrates	Bay-Delta, Suisun bay, San Pablo Bay
22	Delta Juvenile Salmon Monitoring (DJFMP trawls and beach seining)	January - December	Juvenile Chinook salmon abundance, distribution, and condition	Bay-Delta
23	Juvenile Spring-Run and Steelhead Production Monitoring in Clear Creek		Spring-run Chinook and Steelhead productivity	Clear Creek
24	Adult Steelhead and Late-fall Chinook Escapement Monitoring in Clear Creek		Steelhead and Late-fall run Chinook carcass and weir abundance counts	Clear Creek
25	Spring, Fall, and Late Fall Chinook Salmon and Steelhead Escapement Monitoring in the Upper Sacramento River Basin	May-March	Spring-run Chinook and Steelhead weir and carcass abundance counts	Sacramento River
26	American River Chinook Salmon and Steelhead Escapement Monitoring	September-January	Fall-run Chinook and Steelhead weir, redd, and carcass abundance counts	American River

ID	Monitoring Program	Typical Time of Year Operating	Target Species/Parameter	Site/Region
27	Stanislaus River Chinook Salmon and Steelhead Escapement Monitoring	September-January	Fall-run Chinook and Steelhead weir, redd, and carcass abundance counts	Stanislaus River
28	Enhanced Acoustic Tagging, Analysis, and Real-time Monitoring	November-June	Juvenile Chinook salmonid survival	Central Valley
29	Mossdale Spring Trawl	March-May	Juvenile Chinook and steelhead relative abundance	Lower San Joaquin River

Adaptive Management Special Studies

Ongoing research programs to improve the state of science and address questions by one or more managing agencies occur on an ongoing basis.

Table C-3. Adaptive Management Program Monitoring

ID	Monitoring Program	Typical Time of Year Operating	Target Species/Parameter	Site/Region
1	Estuarine and Marine Fish Abundance and Distribution Survey (Bay Study)	January - December	Fish and macroinvertebrates	San Francisco Bay and lower Sacramento and San Joaquin Rivers
2	Bay Salinity Monitoring	January - December	Conductivity and water temperature	Bay-Delta
3	Directed Outflow Project	April-November	habitat condition, water quality, food web	Bay-Delta

Description of Programs

Monitoring of the Central Valley and Bay-Delta Watershed requires extensive coordination across multiple agencies and offices within the different agencies as well as academia and private entities. The following sections describe the organization into various programs in more detail.

Real-Time Monitoring

Adult Spring Chinook Escapement Monitoring in Clear Creek

The goal of this program is to estimate population size and distribution of adult spring Chinook holding and spawning in Clear Creek. This monitoring information is used to inform Clear Creek in-season operations like spring attraction pulses. This monitoring activity produces annual adult escapement of

spring Chinook into Clear Creek using two methods: video counts and snorkel-based estimates. Count data will be posted on the publicly accessible USFWS website for interested parties.

Objectives:

- Operate a video weir station to count and identify fish entering and leaving the watershed
- Index adult holding population size by visual counts made during snorkel surveys
- Estimate the spatial and temporal distribution of holding and spawning through snorkel surveys
- Estimate spawning population size using redd counts produced during snorkel surveys Spawning success is an indicator of the effectiveness of water and temperature management especially during the summer holding period when reservoir management is particularly important
- Obtain genetic samples, scales, and otoliths to determine run, age, natal origin, and juvenile life history of Chinook spawning in Clear Creek

Red Bluff Diversion Dam Rotary Screw Trap Juvenile Monitoring Project

This program quantifies passage and production of juvenile salmonids produced in the upper Sacramento River. This project allows for evaluation of flow and temperature operations from Whiskeytown and Shasta/Keswick reservoirs and provides real-time information to fishery monitoring team to inform fishery and water operations management. Data on the production trends of endangered winter-run Chinook Salmon, threatened spring-run Chinook, the Central Valley ESU of Steelhead as well as the Southern Distinct Population Segment of the North American Green Sturgeon will be derived. Biweekly catch data and passage estimates will be posted on the publicly accessible USFWS website for interested parties.

Objectives:

- Estimate total annual production of juvenile winter-run Chinook Salmon produced in the mainstem Sacramento River and compare these data to adult escapement estimates.
- Estimate juvenile production of fall, late-fall, and spring-run Chinook Salmon.
- Measure relative abundance of Lamprey and Green Sturgeon passing Red Bluff Diversion Dam.

Juvenile Salmon Delta Emigration Real Time Monitoring (expanded DJFMP seines and trawls)

This Delta Juvenile Fish Monitoring Program (DJFMP) monitoring project includes expanded beach seining and surface trawling 3 additional days/week from October 1st to November 30 near Sacramento (Sacramento and Chipps Island) to detect the arrival of older juvenile Chinook Salmon entering the Delta. Monitoring data are used to inform Delta Cross Channel Gate closure decisions from October 1st to November 30 to minimize the diversion and mortality of emigrating juvenile winter-run sized Chinook Salmon. Catch data will be posted on the publicly accessible USFWS website for interested parties.

Objective:

- Provide data for Delta Cross-channel Gate operational triggers.

Juvenile Salmon Delta Abundance Trawling (expanded DJFMP trawling)

This program involves surface trawling (Sacramento and Chipps Island) for increased capture of specific CWT groups released with acoustically tagged releases of juvenile hatchery salmonids during the winter and spring. This includes expanded surface trawling to achieve daily trawling at these sites for at least 5 days/week during the period these groups are likely to be encountered. This period is flexible dependent on the requirements of the releases, but typically runs from early December until early May, approximately five months. If acoustic tag groups are not released, this monitoring study should not be undertaken.

Objective:

- Provide CWT recapture data for estimating the number of juvenile salmonids entering and exiting the Delta.
- Collect tissue samples for genetic stock identification of fish at Chipps and Sacramento trawl.

Genetic Identification of Salmonids and Smelt to Inform Central Valley Project Operations and Bay-Delta Monitoring

Project operations requires accurate information regarding what species are being encountered at various locations in the Central Valley. Historically, juveniles salmonid have been identified based on two length-at-date models, which have been demonstrated to be inaccurate. The population-of-origin is determined for juveniles by comparing their genotypes to reference genetic baselines in order to quantify the number and distribution of true ESA-listed (genetic) winter and spring runs categorized by length-at-date criteria models. The overarching goal of this work is to directly target (and reduce) one source of uncertainty in the estimation of loss for listed Chinook Salmon (but primarily winter run) at South Delta fish salvage facilities and from other CVP monitoring sites. Also, this study provides genetic information at various locations in the Delta to improve accuracy of identifying juvenile salmonids and larval fishes to inform operations and monitoring activities. Species identification information is relied upon to estimate the effects of project operations. Annual genetic identification data will be incorporated into the annual incidental take report for interested parties.

Objectives:

- Genetic classification of Chinook salmon captured from SWP and CVP fish protection facilities for improved estimation of facility loss. This information is provided through multiple potential time steps including: rapid (<48hours), biweekly, and seasonally.
- Genetic classification of Chinook salmon in monitoring programs (e.g., RBDD, Sacramento Trawl, Chipps Island Trawl, Knights Landing, Upper Sacramento stranding surveys). These data are required for agency estimates of juvenile production at Red Bluff Diversion Dam and Sacramento and Chipps trawls.
- Assist with species identification of fish larvae or other difficult to identify samples collected at the fish protection facilities.

Lower Sacramento River Juvenile Salmon and Steelhead Monitoring Project

This program monitors out-migrant juvenile Sacramento River Chinook salmon and steelhead utilizing rotary screw traps located near Knights Landing on the Sacramento River. Juvenile salmonid monitoring in the upper Sacramento River between Red Bluff Diversion Dam and confluence with the Feather provide an early warning of increases in emigration rates of listed salmonids out of the upper Sacramento River toward the Sacramento-San Joaquin Delta. This near real-time data and early warning information provided by the program allows for data related triggers for the operation of the DCC. Daily catch data are posted on the publicly accessible CalFISH website for interested parties.

Objectives:

- Monitor and report the outmigration of juvenile salmonids from the Sacramento River as they move toward the Sacramento-San Joaquin Delta on a real-time basis.
- Monitor, record and compare movements of emigrating salmonids during specific environmental conditions.
- Estimate emigrating salmonid numbers and composition in the lower Sacramento River above the Delta.
- Examine the influences of Sacramento River flood relief structures on emigrating juvenile salmonids.

Winter-run Chinook Salmon Escapement Monitoring

This project monitors the annual abundance, timing, distribution, and several life history characteristics of naturally spawning winter Chinook salmon. Estimates of abundance of Sacramento River Winter Chinook Salmon provide the basis for monitoring the population status and trends of this endangered species. Information generated from this project also provides the basis for evaluating the supplementation program at the winter run Chinook salmon conservation propagation program at Livingston Stone National Fish Hatchery. Recoveries of coded-wire tags from this project feed into cohort reconstructions, which provide the basis for estimating survival rates and evaluating the effects of ocean harvest upon this endangered species. Recoveries of coded-wire tags will be reported to the Regional Mark Information System for use in a cohort reconstruction analysis. Weekly carcass data are posted on the publicly accessible CalFISH website for interested parties.

Objectives:

- Estimate of winter Chinook spawner abundance generated based on carcass mark-recapture estimation methods.
- Estimate escapement and contribution to natural spawning by natural and hatchery origin winter Chinook.
- Estimate of pre-spawning mortality

Fish Salvage Operations

Sampling of entrained fish at the Tracy Fish Collection Facility (TFCF) and Skinner Delta Fish Protective Facility (SDFPF) is the source for CDFW's daily salvage and loss estimates for the monitoring of incidental take of listed fish species.

Fish salvage and loss information at the SDFPF and TFCF is used extensively in water project monitoring and planning. The Fish Facilities Monitoring Project manages the data collected on fish entrained and salvaged at the SDFPF and TFCF. This project maintains one of the largest historical databases on Delta species available and has been used in assessing the effects of new facilities and programs, water project operations proposals, and evaluation of proposed CALFED alternatives. Daily data can be obtained via the California Department of Fish and Wildlife's Bay-Delta FTP server.

Objectives:

- Report fish salvage count data for regular operations and special studies
- Report physical and operational conditions at SDFPF and TFCF including temperature, bypass operations, facility flows, primary and secondary channels flows and depths, and holding tank flows.
- Collect tissue samples for distribution to Agency tissue archives.

Enhanced Delta Smelt Monitoring

High-frequency sampling of the Enhanced Delta Smelt Monitoring (EDSM) program is stratified by regions that, based on differences in hydrodynamics, differ in Delta Smelt density and risk of entrainment. The EDSM program provides an early warning of entrainment events in a broader context than the previous Early Warning Survey and employs a stratified sampling design that includes multiple crews trawling concurrently at multiple sites in pre-defined density strata within the low- and/or high-risk zones of entrainment in the San Francisco Estuary. Stopping rules were developed to minimize the impact of take on the population and effort can be modified to adapt to changing management needs and priorities.

For real-time purposes, EDSM may replace a number of historic trawls. However, for Delta species status and population trends, the long-running trawls may provide useful comparative information. These trawls have been included below in the Status and Trends Monitoring section.

Objectives

- Biweekly estimates of life stage specific abundance
- Biweekly estimates of distribution within different regions of the Bay-Delta.

Delta Flow Measurement and Database Management

The Delta Flow Network consists of 35 flow and water quality monitoring stations located throughout the Sacramento-San Joaquin Delta; eleven of these stations are supported by the IEP. Data from this network of stations are used by Delta managers and scientists to make real-time decisions and plan for future events such as climate change, water operations, restoration projects, evaluate fish transport, and migration issues. In addition, these data are used to calibrate and validate numerical models that are used

to predict water levels, flow speeds, and spatial and temporal evolution of salinity in the Delta. The data collected at these stations are critical for understanding the circulation and mixing patterns in the complex and interconnected channels that comprise the Delta region. Understanding Delta hydrodynamics is imperative to understanding the impacts of proposed major infrastructure projects and regulatory actions being taken to protect endangered species in the Delta.

Objective:

- Provide accurate continuous flow data throughout Bay-Delta.

Operation of Thermograph Stations

This program provides continuous information on the temperature and sediment regimes in the rivers in order to evaluate effects on the restoration of native species fisheries, amphibians and other aspects of the aquatic ecosystem. An additional goal is to better understand the transition from cold water to warm water regimes and how flow magnitude interacts to control the transition.

Objectives:

- Provide accurate continuous temperature readings.
- Provide data regarding sediment loading.

Status and Trends Monitoring

Existing monitoring techniques below assist in understanding species status and population trends. The information may also be useful in annual reporting and demonstrating compliance with ESA. However, they do not necessarily provide real-time operational benefits.

Genetic Analyses of California Salmonid Populations: Parentage Based Tagging (PBT) of salmonids in California Hatchery Programs.

The purpose of this task is to collect tissue samples and conduct the genetic analyses necessary to evaluate the genetic pedigree relationships of California salmonid hatchery broodstock. This information is used to inform hatchery broodstock management, including supporting recovery actions for ESA listed Central Valley salmonids stocks.

California hatcheries release a large number of juvenile salmonids every year, and genetic parentage based tagging (PBT) of adult spawners provides critical information about spawner age distribution, inbreeding, distribution of reproductive success among spawners, migration among Central Valley hatcheries, and other population parameters. The California Hatchery Scientific Review Group recommended PBT as an effective monitoring tool for the management of hatchery broodstock programs.

Objectives

- Genotype samples
- Use broodstock PBT to support Central Valley salmon and steelhead monitoring programs and hatchery broodstock management by identifying hatchery-of-origin and brood year for field caught and hatchery return samples and monitoring inbreeding and migration among Central Valley salmon and steelhead hatcheries.

- Evaluate genetic data for special hatchery broodstock projects to improve broodstock management

Fall Midwater Trawl

Fall Midwater Trawl Survey (FMWT) sampling began in 1967 to measure the abundance and distribution of age-0 Striped Bass and has since collected similar information on a suite of pelagic fishes including Delta Smelt and Longfin Smelt. Survey staff calculates annual abundance indices based on September through December monthly sampling data collected from San Pablo Bay through the Delta. The survey sampling has expanded into Cache Slough and the Sacramento Deepwater Ship Channel and may include zooplankton sampling and processing.

The survey's catch data provides means to calculate adult Delta Smelt incidental take at the export facilities. The State Water Project Incidental Take Permit for Longfin Smelt requires the FMWT Longfin Smelt abundance index to calculate the incidental take limit for the salvage facilities.

Objectives:

- To annually measure the relative abundance and distribution of selected species of pelagic fishes in the estuary.
- To detect introductions of new exotic fish and invertebrates.
- Provide baseline data to evaluate management plans and habitat restoration projects.
- To measure availability of fall planktonic food resources (since 2010).

20-mm Survey monitoring to determine distribution and relative abundance of Delta Smelt and Longfin smelt

The 20-mm Survey monitors juvenile Delta and Longfin Smelt distribution and abundance throughout their historic spring range in the Sacramento-San Joaquin Delta and upper Estuary. This survey monitors Delta Smelt around 20 mm TL in size which is the size that larval "take" is counted against the SWP and CVP. This information allows managers to vary water operations and provide sufficient flows to maintain Delta Smelt rearing habitat away from the south and central Delta and minimize entrainment.

Objectives:

- Determine the distribution of juvenile Delta and Longfin Smelt in relation to the major water diversions
- Compare current relative abundance to historical relative abundances
- Provide concurrent zooplankton density information to monitor the suitability of their food supply

Spring Kodiak Trawl

The Spring Kodiak Trawl (SKT) began in 2002 and is designed to provide information on the distribution of pre-spawning and spawning Delta Smelt, to improve our ability to detect adult Delta Smelt, obtain maturity status data, and provide results on a near "real-time" basis to assist in water management and export decisions. The survey is designed to determine pre-spawning and spawning distribution of adult Delta Smelt in relation to the CVP and SWP water export facilities. Due to its superiority in sampling efficiency to the earlier Fall Midwater Survey, the early results of the SKT are also been used to help estimate the relative abundance of adult Delta Smelt at extremely low population levels.

Objectives:

- Determine the distribution of maturing Delta Smelt during the period of December through May
- Evaluate the sexual maturation of Delta Smelt during this period and detects the start of spawning migration
- Report current relative abundance compared to historical estimates

Estuarine and Marine Fish Abundance and Distribution Survey

Since 1980, 52 channel and shoal stations from South San Francisco Bay to the lower Sacramento and San Joaquin rivers have been sampled monthly with a midwater and otter trawl. In addition to tracking abundance trends and distributional changes of individual species, data from this study is used to determine changes in the fish communities over time.

Objectives:

- Determine the effects of outflow related mechanisms on the abundance and distribution of estuarine and marine fishes.

Smelt Larva Survey (SLS)

This survey provides near real-time abundance and distribution data for Longfin (LFS) Smelt larvae in the Delta, Suisun Bay and Suisun Marsh. Data are used by agency managers to assess vulnerability of Longfin Smelt larvae to entrainment in south Delta export pumps. Sampling begins within the first two weeks in January and repeats every other week through the second week in March. The data is used to assess the risks of entrainment by the SWP and CVP and to determine OMR levels designed to minimize take of juvenile LFS at these facilities.

Summer Townet Survey

Summer Townet Survey (STN) is a long-term effort to monitor young pelagic fishes in the upper San Francisco Estuary. Since 1959, STN has sampled fixed locations from eastern San Pablo Bay to Rio Vista on the Sacramento River, and to Stockton on the San Joaquin River; and a single station in the lower Napa River. The study area was expanded in 2011 to include the Sacramento Deep Water Ship Channel and Cache Slough. Currently, 40 stations are sampled every other week June through August using a conical, fixed-frame net, which is pulled obliquely through the water column 2 to 3 times at each station. Data collected at 31 stations are used to calculate annual relative abundance indices for age-0 Striped Bass (*Morone saxatilis*) and Delta Smelt (*Hypomesus transpacificus*). The remaining 8 stations are sampled to increase our understanding of juvenile fish abundance and distribution in the lower Napa River and the north Delta. In 2005, STN added a zooplankton net to assess fish food resources at each station. A subset of the fish collected are retained for diet analysis. The STN also measures water temperature, water clarity and specific conductivity. Managers and researchers use the data collected by STN to inform decisions and improve our understanding of the health of the upper San Francisco Estuary.

While the original intent was to monitor the population of age-0 Striped Bass throughout the upper San Francisco Estuary, its scope has broadened to include other species of fish such as Delta Smelt and the food resources they rely upon.

Objectives:

- Measure annual abundance of selected age-0 fish

- Measure factors affecting abundance and distribution of age-0 Striped Bass, Delta Smelt and other fish in the estuary
- Measure availability of summer planktonic food resources
- Examine summer diets of young Striped Bass, Delta Smelt, and other pelagic fishes

Environmental Monitoring Program

The Environmental Monitoring Program (EMP) was established in 1971 to collect environmental data for resource management, to better understand estuarine processes, and to document compliance with State Water Resources Control Board Water Right Decision D-1379. This program collects water quality, chlorophyll, phytoplankton, benthic, and zooplankton samples at fixed locations in the Sacramento-San Joaquin Delta, Suisun Bay, and San Pablo Bay. Two of the program's strengths are continuity and data integration; the EMP is one of the nation's oldest environmental monitoring programs and has compiled over four decades of consistent and comprehensive water quality and biological data.

This is a comprehensive monitoring program that helps to ensure compliance with water quality objectives and standards, which were established to protect the beneficial uses of water in Sacramento-San Joaquin Delta and Suisun Marsh.

Objectives:

- Provide accurate and validated water quality and biological information to managers for real-time and adaptive management of the SWP and CVP
- Document and evaluate long term water quality and ecological trends in the San Francisco Estuary
- Detect and document invasive species, such as *Microcystis aeruginosa* and *Potamocorbula amurensis*, and conduct special studies to discern their impact on native species, the food web, and human health.

Delta Juvenile Salmon Monitoring (DJFMP seines and trawls)

This program involves year-around beach seining and surface trawling (Mossdale, Sacramento, and Chipps Island) throughout the San Francisco Estuary to monitor the relative abundance and distribution (spatial and temporal) of juvenile Chinook Salmon and other native species in the Central Valley of California.

Objectives:

- Determine the status and trends of juvenile Chinook Salmon in the San Francisco Estuary.
- Examine factors influencing the status and trends of juvenile Chinook Salmon.

Juvenile Spring-Run and Steelhead Production Monitoring in Clear Creek

The goal of this program is to estimate production of juvenile salmonids in Clear Creek. Clear Creek juvenile salmon and steelhead production estimates are used to guide and evaluate the effectiveness of proposed actions. It also serves a status and trend purpose to provide information for ESA status consideration. This monitoring activity results in juvenile production estimates for spring-run and steelhead in Clear Creek. Biweekly count and passage estimates data will be posted on the publicly accessible USFWS website for interested parties.

Objectives:

- Operate a rotary screw trap to catch, identify, and count juvenile fish leaving Clear Creek.
- Use rotary screw trap capture-efficiency trials to transform juvenile counts into total production estimates for salmon and steelhead.
- Estimate spawning success by combining juvenile production estimates with adult population estimates. Spawning success can be an indicator of the effectiveness of water management, habitat restoration and environmental variables.

Adult Steelhead and Late-fall Chinook Escapement Monitoring in Clear Creek

The goal of this program is to estimate population size and distribution of adult steelhead and late-fall Chinook spawning in Clear Creek. This monitoring activity is used to guide and evaluate the effectiveness of the proposed actions. It also serves a status and trend purpose to provide information for ESA status consideration. The activity estimates annual adult populations of steelhead and late-fall Chinook in Clear Creek using two methods: video counts and kayak-based redd counts. Count data will be posted on the publicly accessible USFWS website for interested parties.

Objectives:

- Operate a video weir station to count and identify fish entering and leaving the watershed.
- Estimate spawning population size using redd counts produced during kayak surveys.
- Estimate spawning success by combining redds counts with estimates of the number of juvenile fish produced. Spawning success can be an indicator of the effectiveness of water management and habitat restoration.
- Collect spawning habitat data for use as an indicator of the effectiveness of habitat restoration.
- Estimate the spatial and temporal distribution of spawning through kayak-based surveys.

Spring, Fall, and Late-fall Chinook Salmon and Steelhead Escapement Monitoring in the Upper Sacramento River Basin

Conduct mark-recapture carcass surveys, aerial and wading redd surveys, video counts, and snorkel surveys of the mainstem Sacramento River and its major tributaries (Battle Creek, Cow Creek, Bear Creek, Antelope Creek, Mill Creek, and Deer Creek) to estimate adult salmon and steelhead escapement. Data collected may include: hatchery mark status, gender, tag status, carcass condition, spawning status, fork length, and disposition, from all or a subset of carcasses handled. Other samples may include biological samples, such as: head, fin tissue, otoliths, and scales, from a subset of carcasses handled during the survey. Annual data are posted on the publicly accessible CalFISH website for interested parties.

Objectives:

- Estimate of spring run, fall run, and late-fall run Chinook and steelhead spawner abundance generated based on carcass mark-recapture or Vaki/video count estimation methods on the mainstem Sacramento River.
- Estimate escapement and contribution to natural spawning by natural and hatchery origin winter Chinook.
- Estimate of pre-spawning mortality in upper Sacramento River

American River Chinook Salmon and Steelhead Escapement Estimation

Conduct mark-recapture carcass surveys, aerial and wading redd surveys and snorkel surveys of the American River to estimate fall run Chinook and steelhead escapement. This activity generally runs mid-September through March. Data collected may include: hatchery mark status, gender, tag status, carcass condition, spawning status, fork length, and disposition, from all or a subset of carcasses handled. Other samples may include biological samples, such as: head, fin tissue, otoliths, and scales, from a subset of carcasses handled during the survey. Weekly carcass data are posted on the publicly accessible CalFISH website for interested parties.

Objectives

- Estimate the number of Chinook salmon spawning in the lower American River on an annual basis, beginning in mid-September.
- Estimate of escapement and contribution of hatchery-origin fish
- Estimate of pre-spawning mortality

Stanislaus River Chinook Salmon and Steelhead Escapement Estimation

Conduct mark-recapture carcass surveys, aerial and wading redd surveys and snorkel surveys of the American River to estimate fall run Chinook and steelhead escapement. This activity generally runs mid-September through March. Data collected may include: hatchery mark status, gender, tag status, carcass condition, spawning status, fork length, and disposition, from all or a subset of carcasses handled. Other samples may include biological samples, such as: head, fin tissue, otoliths, and scales, from a subset of carcasses handled during the survey. Weekly carcass data are posted on the publicly accessible CalFISH website for interested parties.

Objectives

- Estimate the number of Chinook salmon spawning in the Stanislaus River on an annual basis, beginning in mid-September.
- Estimate of escapement and contribution of hatchery-origin fish
- Estimate of pre-spawning mortality

Enhanced Acoustic Tagging, Analysis, and Real-time Monitoring

This monitoring program supports an acoustic receiver network and associated real-time and retrospective modeling of the data. This monitoring may include (1) the deployment of real-time receivers that will provide timely information on migrating salmon smolt and green sturgeon location and timing, (2) expansion of the existing autonomous acoustic array to increase the coverage and detection efficiency; (3) development of new metrics for the real-time data for key management relevant questions such as entrainment estimates at critical junctions (Georgiana Slough and Delta Cross Channel); and (4) retrospective analyses directly geared toward improving the quality and robustness of forecasting models (e.g., enhanced particle tracking models, fish migration models). Survival modeling and forecasting will be posted on the publicly accessible NOAA-Fisheries website for interested parties.

Objectives:

- Real-time estimates of reach-specific survival for juvenile salmonids in the Sacramento River and Delta

- Real-time estimates of route-entrainment for juvenile salmonids in the Delta

Mossdale Spring Trawl

This monitoring program is a long-term San Joaquin River basin juvenile Chinook salmon monitoring using a trawl net. The project samples on San Joaquin River near Mossdale County Park. This program identifies annual juvenile Chinook salmon production in the San Joaquin River Basin. Catch data will be posted on the publicly accessible CalFISH website for interested parties.

Objectives:

- Determine annual juvenile Chinook salmon production in the San Joaquin River Basin
- Determine how water quantity and quality conditions affect smolt production trends and *Oncorhynchus mykiss* passage at Mossdale trawl.

Adaptive Management Program Monitoring

Tidal Wetland Monitoring Studies

This program collects fish and invertebrate data near existing and tidal wetlands and planned tidal wetland restoration sites. These data provide information on how fish and invertebrate communities change pre-/post-restoration. Tidal wetland habitat restoration in the Sacramento-San Joaquin Delta and Suisun Marsh is important for improving habitat and food web resources for threatened fishes. This program is responsible for biological monitoring in these restored tidal habitats to assess their success for providing benefits for at-risk native fishes. Pre-project monitoring data allows project managers to evaluate the effectiveness of tidal wetland restoration projects.

Objectives:

- Determine the extent to which long-term sampling reflects conditions in nearby shallow water and wetland habitats.
- Determine whether gear efficiency evaluations are feasible using new sampling technology
- Determine the level of spatial and temporal replication necessary to make sampling design recommendations for long-term monitoring.
- Continue developing a baseline of biomass, community composition, and fish condition for fish and invertebrates near planned tidal restoration and comparison sites. This will allow us to make pre-and-post-restoration comparisons for evaluating restoration progress.

Bay Salinity Monitoring

Salinity and water temperature are collected in San Francisco Bay. Data are used to better understand the hydrodynamics of the estuary and calibration of multi-dimensional flow and transport models. Understanding how these variables are distributed around the Bay leads to a better understanding of habitat types and distribution in the Bay. Time series of water temperature and specific conductance (salinity is calculated from conductivity and water temperature) are needed (1) to improve our understanding of the hydrodynamics of the estuary (e.g., gravitational circulation), (2) for calibration of multi-dimensional flow and transport models of the Bay, (3) to better understand the distribution of

physio-chemical habitat types throughout the Bay, and (4) to provide supporting data for numerous estuarine studies of the Bay and Delta.

Upper Estuary Zooplankton Sampling

The Zooplankton Study has estimated the abundance of zooplankton taxa in the upper San Francisco Estuary since 1972 as a means of assessing trends in fish food resources and is part of a D-1641 mandate to monitor water quality and related parameters. Sampling with three gear types occurs monthly at 22 stations located throughout San Pablo Bay, Suisun Marsh, Suisun Bay, and the Delta. Zooplankton are an important trophic link between primary producers and fish. The Zooplankton Study provides abundance estimates and distributional data for fish food resources in the upper San Francisco Estuary. This information is used by aquatic ecologists to understand the lower food web and some biological drivers of the Delta Smelt population. The study also detects and monitors zooplankton recently introduced to the estuary and determines their effects on native zooplankton species.

Objectives:

- Determine abundance and distribution of zooplankton in the upper San Francisco Estuary
- Determine the relationships between species abundance and temperature, salinity, turbidity, and chlorophyll
- Determine long-term abundance trends for all species and if these trends show significant declines or increases
- Determine if introduced species becoming established in the estuary

Upper Sacramento River Habitat Restoration Monitoring Project

Sacramento River Spawning and Rearing Habitat Restoration Monitoring Program

- Determine the effectiveness of habitat improvement project sites at improving habitat for adult and juvenile Chinook salmon and steelhead trout.
- Determine species presence assemblage and density over time through repeated surveys.
- Collect spatial fish data by snorkel, videography, seine, or electrofish surveys.
- Compare habitat attributes between control and treatment sites before and after project implementation. Metrics can include water temperatures, velocities, depths, substrates, cover, vegetation, temperature stratification in backwaters, hyporheic conditions, and macroinvertebrate metrics.

Reporting

Various reporting is completed by the multiple agency and consultants completing the monitoring describe above. The Real Time Monitoring activities currently provide their data through various sites. Communication of these data has typically been supported through email, and more recently through web-based aggregation and visualization sites such as Bay-Delta Live, SacPAS, and SHOWR. These sites will continue to support the needs for rapid analytical and reporting of Real Time Monitoring data.

Bay-Delta Live

Bay-Delta Live is a collaborative community of interests with the goal of expanding open and transparent sharing of information essential in understanding the complex and dynamic ecosystem of the Sacramento-San Joaquin Bay Delta. Bay-Delta Live provides information from multiple sources using enhanced visual interfaces. Bay-Delta Live is used by resource managers, scientists, conservationists, policy makers, academics, and others local community interestes. BDL is supported through contributions from federal and state agencies, as well as community and agency information.

<https://www.baydeltalive.com/>

SacPAS

This website provides monitoring, evaluation, and web-based data products and services for primary and associated activities funded by the U.S. Bureau of Reclamation (USBR) and mandated by the Endangered Species Act (ESA). It serves as a means by which information integration services can be provided to the Central Valley Project Improvement Act (CVPIA) and ESA participants. Web-based services relate fish passage to environmental conditions and provide resources for evaluating the effects of river management and environmental conditions on salmon passage and survival. This website is maintained by University of Washington with funds from US Bureau of Reclamation.

<http://www.cbr.washington.edu/sacramento/>

Objective

- Provide a publicly accessible, web-based query and reporting system of historical and current fish, environmental, and hydrologic information, vital to year-round planning and adaptive management of the Central Valley Project and State Water Project.
- Provide basic conditions, performance measures, and threshold-based alerts are available through data aggregation and analysis of environmental conditions.

SHO-WR

SHOWR is designed to help decision makers and interested stakeholders understand and engage in the complicated process of managing Shasta Reservoir operations to protect Winter Run Chinook Salmon. The SHO-WR application demonstrates the power of open data paired with open source analytics and visualization tools for California water resources management. The application has been developed iteratively as part of a demonstration project led by the Sacramento River Settlement Contractors (SRSC). The primary objective of this demonstration project is to integrate diverse flow, water operations, fishery, and water quality data into a single, open data environment that facilitates more data-driven and timely decision making. On the section of the Sacramento River immediately below Lake Shasta, the fishery agencies have targeted water temperature as the most critical resource to successful spawning of winter-run Chinook salmon from late April through September. This single parameter controls the operation of Shasta Reservoir, SRSC diversions, the Central Valley Project (CVP), other project reservoirs, and the Bay Delta.

<https://flowwest.shinyapps.io/showr/>

Table C-4: Availability of data generated by Real Time Monitoring Projects.

Id	Monitoring Program	Bay Delta Live	Sacpas	Showr
1	Adult Spring Chinook Escapement Monitoring in Clear Creek.		Adult escapement	
2	Red Bluff Diversion Dam Rotary Screw Trap Juvenile Monitoring Program		Juvenile Production	
3	Juvenile Salmon Emigration Real-time Monitoring (Seines and Trawls)	Abundance Index, Distribution	Abundance Index, Distribution	
4	Juvenile Salmon Delta Abundance Trawling (expanded DJFMP trawling)			
5	Genetic Identification of Salmonids and Smelt to Inform Central Valley Project Operations and Bay-Delta Monitoring			
6	Lower Sacramento River Juvenile Salmon and Steelhead Monitoring Project	Abundance Index, Distribution	Abundance Index, Distribution	
7	Winter-run Chinook Salmon Escapement Monitoring			
8	Fish Salvage Operations	Daily Loss	Daily Loss	
9	Enhanced Delta Smelt Monitoring	Daily distribution		
10	Delta Flow Measurement and Database Management	Flow Characteristics	Flow Characteristics	
11	Operation of Thermograph Stations	Temperature Characteristics	Temperature Characteristics	Temperature Characteristics
12	Hatchery Marking (100% Tagging)		Smolt-to Adult Return ratios, Daily Loss	

References

Johnson, RC, S. Windel, PL Brandes, JL Conrad, J Ferguson, PAL Goertler, BN Harvey, J Heublein, JA Israel, DW Kratville, JE Kirsch, RW Perry, J Pisciooto, WR Poytress, K Reece, BG Swart. 2017. Science Advancements Key to Increasing Management Value of Life Stage Monitoring Networks for Endangered Sacramento River Winter-Run Chinook Salmon in California. San Francisco Estuary and Watershed Science. 15: 1-41.

Exhibit B - Real-Time Species Distribution and Lifestage

Fish monitoring technical teams shall regularly report the following information from December through June as appropriate to the species' lifestage.

Salmonids

Upper Sacramento Fish Monitoring: redd counts and sampling at rotary screw traps

Lower Sacramento Fish Monitoring: sampling in trawls and beach seines.

Fish Distribution: Estimated percentage of the population upstream of Knight's Landing, In the Delta, and Past Chipps Island for winter-run, and spring-run Chinook salmon.

Delta Distribution: Estimated percentage of the population is different strata within the Delta.

Migration Cues: Other factors and indicators of fish distribution and lifestage.

Smelt

Environmental Data: water temperature thresholds, turbidity, food indicators, etc.

Fish Monitoring: gear deployments, counts by strata, and body condition from EDSM

Migration Cues: Other factors and indicators of fish distribution and lifestage.

Salvage

Salvage: reports from the state and federal facilities.

Exhibit - C Water Operation Status

Monthly, Reclamation shall provide a report on the status of CVP and SWP operations including:

- Reservoir Storage
- Reservoir Inflow
- Deliveries and Delta Outflow
- Delta Water Quality Stations
- VA Experiments

Exhibit D.a. - Old and Middle River Storm Event

See WIIN

Exhibit D.b. - Shasta Cold Water Pool Management

See SRTTG

Exhibit D.c. - Folsom Cold Water Pool Management

See ARG

Exhibit D.d. - Suisun Marsh and Fall Delta Smelt Habitat

Reclamation and DWR shall investigate Delta Smelt fall habitat to determine how the components of habitat interact with the species and affect its viability. Components of habitat include food, turbidity, salinity, velocity, and temperature - the physical and geographic features. Viability includes stomach fullness, length, and overall fitness including freedom from disease. This study program shall use a scientific approach of hypothesis identification, testing, and synthesis through Structured Decision Making, as discussed in the Adaptive Management Program. The Delta XXXX group would meet to

determine how to implement this action each year. To inform the Delta XX group, Reclamation and/or DWR would conduct Delta hydrodynamic modeling on an annual basis to evaluate the potential action(s). Each year, this program shall implement actions that may include (but are not limited to): monitoring, modeling, surveys, changes in existing physical structures or gates, additional flow, and/or the addition of substrate or turbidity. The synthesis and results from these investigations shall be published annually. Reclamation, DWR and Service shall conduct a comprehensive review of the outcomes of the Fall Investigations and the effectiveness of the adaptive management program ten years from the signing of the biological opinion, or sooner if circumstances warrant. This review shall entail an independent peer review. The purposes of the review shall be to evaluate the outcomes of the investigations to determine the then-current understanding of fall habitat, and to evaluate the effectiveness of the adaptive management program. At the end of 10 years or sooner, these investigations, based on the peer review and Service determination as to its efficacy shall either be continued, modified, or terminated.

Exhibit E - Outlier Years

In the event Reclamation and DWR identify conditions outside of the range of the Proposed Action, Reclamation and DWR will provide the following information to CDFW, FWS, and NMFS for technical assistance.

- Real-Time Species Distribution and Life History
- Water Operation Status
- Forecasts at the 50% and 90% confidence levels
- Potential Alternative Actions
- Other Relevant Information

Reclamation and DWR anticipate additional information may be required and would be developed through collaboration on the technical assistance.

Exhibit F - Habitat Restoration Updates

Annually and/or as needed, Reclamation and DWR would list the planned, under construction, and recently completed habitat restoration actions. For each action, the list would include:

- Name of the Project
- Completion Date (Planned or Actual)
- Changes to Operational Metrics (e.g. Acres Inundated, X2 Relationship)
- Changes to Habitat Metrics (e.g. Rearing, Spawning, Foraging, Etc.)
- Relevant Flow Experiments

Exhibit G.a. - Shasta Cold Water Pool Management

By the end of December of each year, Reclamation shall provide information on the prior year's management of the Shasta cold water pool in order to inform the upcoming temperature management season due April 1. Information will include, at minimum:

- Adult Winter-Run Carass Survey
- Winter-Run Chinook Salmon Redd Timing and Location
- Reservoir Inflow and Meteorology
- Narrative on the use of Cold Water Resources
- Measured Reservoir Profiles and Water Temperatures
- Estimated Temperature Dependent Mortality
- Monthly Water Operation Status Reports
- Shasta Cold Water Pool Status Reports
- Technical Assistance and Other Fish Agency Communications to Reclamation

Exhibit G.b. - Shasta Storage Rebuilding and Spring Pulse

By the end of June of each year, Reclamation shall provide information on the outcomes of fall-winter and spring actions to rebuild storage in Shasta Reservoir to inform actions for the upcoming fall. Information will include, at minimum:

- Rice Decomposition Schedules
- Number of Winter-Run Redds Dewatered
- Number of Fall-Run Redds Dewatered
- Estimated Increase in Storage due to Actions
- Flood Conservation Space Releases, if Taken
- Spring Pulse Action, if Taken

Exhibit G.c. - Annual Summary Of Water Supply and Fish Operations

On or about the end of September of each year, Reclamation and DWR propose to provide to the USFWS, NMFS, and CDFW a report on the prior year activities through the spring of each year. The annual report shall include, at minimum:

- Hydro-Meteorology: Precipitation; reservoir inflow; air temperatures; and other environmental factors affecting water availability and demands.
- Non-Flow Construction: Summary of projects committed to in this consultation that are initiated; ongoing; and completed.
- Water Operations Summary: Conditions from the prior year (spring to spring); allocations; flows; diversions; and reservoir, release, and river temperatures.
- Flow Experiments under Voluntary Agreements: Accounting for conditions and the flow actions including.
- Fisheries Performance: Results from monitoring stations; surveys; salvage; harvest; and physical factors influencing fish populations.
- Intervention Measures: Hatchery intakes; releases; and other measures.
- Predictive Tools: Summary of the performance of the risk analysis tools used during the year.

Appendix XX provides an outline of the annual report.

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 8/10/2020 4:04:53 PM
To: Spranza, John [John.Spranza@hdrinc.com]; Laurie Warner Herson (laurie.warner.herson@phenixenv.com) [laurie.warner.herson@phenixenv.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]
Subject: Reclamation Coordination Side-by-Side Schedule
Attachments: Reclamation Ops Agreement Dev Schedule_2020810.docx

John and Laurie,

Please see attached for a high-level schedule we are working on with Reclamation. Ryan and Michael requested that we include best guesses for federal milestones, including Cultural, Coordination Act Report, ROD, ESA Consultation, etc. I know this is a little premature given we are still working thru our 2022+ schedule, but I'm wondering if you can provide a ballpark. I think even a season would be okay (e.g. fall 2022).

I'm hoping to have this available for the management call tomorrow afternoon. I know the format is a bit clunky now that we're adding more detail – maybe I will convert it to one large table in the future, but for now you can enter it under the second table.

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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Sites Schedule

Milestone	Date
Perform Operations Analysis for EIR/EIS, BA	July 2020 – November 2020
Complete Admin Draft EIR/EIS	March 2021
Re-Analyze Public Benefits	November 2020 – April 2021
Submit State Prop 1 Feasibility Report	July 2021
Release Draft EIR/EIS	July 2021
Complete Plan of Finance	August 2021
Receive Confirmation of Local Agency Participation in Prop 1	October 2021
CWC Determination of Prop 1 Construction Funds Eligibility	December 2021
Submit Water Rights Application to SWRCB	January 2022
Issue Final EIR/EIS	March 2022

Sites-Reclamation Coordination

Milestone	Date
Meet with Sites/CVO to Outline Approach for modeling and term sheet	June 22, 2020
Meet to Review Operations Options with Reclamation <ul style="list-style-type: none"> • Assumed level of federal participation • Operational exchange outline • Modeling criteria 	July – August 2020
Conduct Operations Analysis to show: <ul style="list-style-type: none"> • Amount of water available • CVP flexibility 	July 2020 – November 2020
2020/2021 geotechnical exploration	Fall-Winter 2020/2021
Secretarial determination of feasibility	December 31, 2020
Establish initial term sheet reflecting final model results and initiate negotiation of commercial terms	January 2021
Verify federal benefit allocation assumed in CWC feasibility	March 2021
Coordinated operations term sheet complete	June 2021
Reclamation Letter of Intent for funding signed	August 2021
2021/2022 geotechnical exploration (assumes additional federal funds available)	Fall-Winter 2021/2022
Updated Class 3 cost estimate complete	Spring 2022
Post Authorization Report complete using CWC feasibility and Class 3 cost estimate	Summer 2022

From: Luu, Henry [Henry.Luu@hdrinc.com]
Sent: 8/10/2020 9:06:38 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: Sites - Dunnigan and Harrington pipeline alignment updates

Hi Ali,

Updates regarding the Dunnigan and Harrington pipeline alignments are as follows. Please feel free to wordsmith as appropriate:

The engineering team has been in discussions with RD-108 on an alternative Dunnigan alignment east of the CBD that would 'straighten' the pipe alignment from CBD to the Sacramento River. After further consultation with RD-108 it was determined that additional real-estate outreach is required to vet this alternative alignment. Due to real-estate uncertainty at this time, the team will stay the course with the current Dunnigan pipeline alignment that is shown on the draft July 2020 plans. There are no significant changes expected to the Dunnigan pipeline alignment as part of the upcoming August 31, 2020 deliverables.

The engineering team has also been evaluating the potential for a Harrington pipeline alignment that is approximately 9 miles north of the Dunnigan pipeline alignment. Preliminary analysis indicate that a new pipeline will be required for about 6.25 miles between TCC and CBD; this is approximately 2.25 miles longer than the Dunnigan pipeline, and is estimated to cost \$47.9M more to construct. Based on this construction cost difference, the Harrington pipeline alignment does not appear to be an affordable option for the project.

Thank you,

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/11/2020 8:55:01 AM
To: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]
Subject: RE: Reclamation Coordination Side-by-Side Schedule
Attachments: Reclamation Ops Agreement Dev Schedule_2020810-JJS.docx

Hi,
I added the ESA, Section 106 and State ITP process, along with the ROD issuance date Laurie identified. It's in track changes so you can keep/delete what you would like.

If you need more please let me know and I can add Clean Water Act and other permits.

John Spranza

D 916.679.8858 M 818.640.2487

From: Laurie Warner Herson [mailto:laurie.warner.herson@phenixenv.com]
Sent: Monday, August 10, 2020 4:34 PM
To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Spranza, John <John.Spranza@hdrinc.com>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>
Subject: RE: Reclamation Coordination Side-by-Side Schedule

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 Erin,

I think we can estimate that the ROD would be issued in September 2022 (or late summer 2022), assuming the project is taken off pause by Reclamation at the end of March.

Laurie

From: Heydinger, Erin [mailto:Erin.Heydinger@hdrinc.com]
Sent: Monday, August 10, 2020 4:05 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>
Subject: Reclamation Coordination Side-by-Side Schedule

John and Laurie,

Please see attached for a high-level schedule we are working on with Reclamation. Ryan and Michael requested that we include best guesses for federal milestones, including Cultural, Coordination Act Report, ROD, ESA Consultation, etc. I know this is a little premature given we are still working thru our 2022+ schedule, but I'm wondering if you can provide a ballpark. I think even a season would be okay (e.g. fall 2022).

I'm hoping to have this available for the management call tomorrow afternoon. I know the format is a bit clunky now that we're adding more detail – maybe I will convert it to one large table in the future, but for now you can enter it under the second table.

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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Sites Schedule

Milestone	Date
Perform Operations Analysis for EIR/EIS, BA	July 2020 – November 2020
Prepare and Submit Admin Draft Section 106 Consultation Package to Reclamation	September 2020 - October 2020
Reclamation Distributes Draft 106 Package to SHPO	March 2021
Complete Admin Draft EIR/EIS	March 2021
Re-Analyze Public Benefits	November 2020 – April 2021
Submit State Prop 1 Feasibility Report	July 2021
Release Draft EIR/EIS	July 2021
Submit Admin Draft BA to Reclamation	March 18, 2021
Reclamation to submit Draft BA to USFWS and NMFS	July 1, 2021
Complete Plan of Finance	August 2021
Receive Confirmation of Local Agency Participation in Prop 1	October 2021
BO Incidental Take Authorization Received	November 2021
Prepare and Submit State ITP	January 2021 – December 2021
Final Section 106 Programmatic Agreement Executed	December 2021
CWC Determination of Prop 1 Construction Funds Eligibility	December 2021
Submit Water Rights Application to SWRCB	January 2022
Issue Final EIR/EIS	March 2022
Receive State ITP Authorization	June 2022
Road Issued	September 2022

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Commented [SJ1]: So this is when we Sites) will (be done with the initial analysis. My guess is we will be refining through spring 2021 until the draft BA goes out.

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Sites-Reclamation Coordination

Milestone	Date
Meet with Sites/CVO to Outline Approach for modeling and term sheet	June 22, 2020
Meet to Review Operations Options with Reclamation <ul style="list-style-type: none"> Assumed level of federal participation Operational exchange outline Modeling criteria 	July – August 2020
Conduct Operations Analysis to show: <ul style="list-style-type: none"> Amount of water available CVP flexibility 	July 2020 – November 2020
2020/2021 geotechnical exploration	Fall-Winter 2020/2021
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Coordinated operations term sheet complete	June 2021
Reclamation Letter of Intent for funding signed	August 2021

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2021/2022 geotechnical exploration (assumes additional federal funds available)	Fall-Winter 2021/2022
Updated Class 3 cost estimate complete	Spring 2022
Post Authorization Report complete using CWC feasibility and Class 3 cost estimate	Summer 2022

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 8/11/2020 10:19:29 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [John.Spranza@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
CC: Jerry Brown [jbrown@sitesproject.org]; Kevin Spesert [kspesert@sitesproject.org]
Subject: RE: Reclamation Coordination Side-by-Side Schedule
Attachments: Reclamation Ops Agreement Dev Schedule_2020811.docx

Updated document attached. I merged it into one table. It's still a bit confusing and if much more detail is added it probably should become a project schedule so it can be divided by effort.

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Heydinger, Erin
Sent: Tuesday, August 11, 2020 10:03 AM
To: 'Alicia Forsythe' <aforsythe@sitesproject.org>; Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>
Subject: RE: Reclamation Coordination Side-by-Side Schedule

Thanks so much Ali, I'll make these changes.

Jerry – how do you want to handle this during the meeting today? Should I present my screen or should we send it out or something else altogether?

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, August 11, 2020 9:49 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Cc: Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>
Subject: RE: Reclamation Coordination Side-by-Side Schedule

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Ali

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

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Hi,
I added the ESA, Section 106 and State ITP process, along with the ROD issuance date Laurie identified. It's in track changes so you can keep/delete what you would like.

If you need more please let me know and I can add Clean Water Act and other permits.

John Spranza

D 916.679.8858 M 818.640.2487

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Hi Erin,

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Laurie

From: Heydinger, Erin [<mailto:Erin.Heydinger@hdrinc.com>]

Sent: Monday, August 10, 2020 4:05 PM

To: Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>

Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>

Subject: Reclamation Coordination Side-by-Side Schedule

John and Laurie,

Please see attached for a high-level schedule we are working on with Reclamation. Ryan and Michael requested that we include best guesses for federal milestones, including Cultural, Coordination Act Report, ROD, ESA Consultation, etc. I know this is a little premature given we are still working thru our 2022+ schedule, but I'm wondering if you can provide a ballpark. I think even a season would be okay (e.g. fall 2022).

I'm hoping to have this available for the management call tomorrow afternoon. I know the format is a bit clunky now that we're adding more detail – maybe I will convert it to one large table in the future, but for now you can enter it under the second table.

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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Sites-Reclamation Schedule

Milestone	Date*
Perform Operations Analysis for EIR/EIS, BA	July 2020 – November 2020
Prepare and Submit Admin Draft Section 106 Consultation Package to Reclamation	September 2020 - October 2020
2020/2021 Geotechnical Exploration	Fall-Winter 2020/2021
Secretarial determination of feasibility	December 2020
Establish initial term sheet reflecting final model results and initiate negotiation of commercial terms	January 2021
Reclamation Distributes Draft 106 Package to SHPO	March 2021
Complete Admin Draft EIR/EIS	March 2021
Submit Admin Draft BA to Reclamation	March 2021
Re-Analyze public benefits complete (federal benefit allocation assumed in CWC feasibility verified)	April 2021
Coordinated operations term sheet complete	June 2021
Submit State Prop 1 Feasibility Report	July 2021
Release Draft EIR/EIS	July 2021
Reclamation to submit Draft BA to USFWS and NMFS	July 2021
Reclamation Letter of Intent for funding signed	July 2021
Complete Plan of Finance	August 2021
Receive Confirmation of Local Agency Participation in Prop 1	October 2021
2021/2022 geotechnical exploration (assumes additional federal funds available)	Fall-Winter 2021/2022
BO Incidental Take Authorization Received	November 2021
Submit State ITP	December 2021
Final Section 106 Programmatic Agreement Executed	December 2021
CWC Determination of Prop 1 Construction Funds Eligibility	December 2021
Submit Water Rights Application to SWRCB	January 2022
Issue Final EIR/EIS	March 2022
Updated Class 3 cost estimate complete	April 2022
ROD Issued	May 2022
Receive State ITP Authorization	June 2022
Post Authorization Report complete using CWC feasibility and Class 3 cost estimate	August 2022

*Dates beginning January 1, 2022 are approximate

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 8/11/2020 10:22:26 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Water Supply Modeling for SWP Participants

Looks good to me, Ali.

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, August 11, 2020 10:18 AM
To: Tull, Robert/SAC <Robert.Tull@jacobs.com>; Leaf, Rob/SAC <Rob.Lead@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites Water Supply Modeling for SWP Participants

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See page 20 of the Value Planning Report – I think the Wet and Above Normal year are the years in question here.

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

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From: Alicia Forsythe
Sent: Tuesday, August 11, 2020 10:15 AM
To: Tull, Robert/SAC <Robert.Tull@jacobs.com>; Leaf, Rob/SAC <Rob.Lead@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: FW: Sites Water Supply Modeling for SWP Participants

My draft email below. Let me know ASAP if you have any concerns. Keep in mind that the Value Planning report ID'ed some Sites releases in wet and above normal years.

Robert and Jerry – I talked briefly with Rob Tull on this item this morning. The modeling gives Article 21 water a higher priority at the Banks PP as the premise of the analysis is that Sites should not impact the existing SWP contractors. The amounts shown in the Value Planning Report for wet and above normal years are a combination of Sacramento Valley uses of Sites water (limited in these years types, but it is possible that there would be use in some years with different CVP/SWP allocations over the 82-year record in Calsim) and Proposition 1 water (the model assumes Yolo Bypass and refuge water).

It is important to keep in mind that the analysis assumes that Sites water can be moved as Table A water. So although there is limited capacity at Banks in wet and above normal years, there are also limited times / windows when the model is indicating that some water can be moved south of Delta and still not affect other SWP Table A or Article 21 water. The model has perfect foresight and makes perfect decisions based on the operating criteria in the model. We recognize that real world operations may be different and it may be much more difficult to project and capitalize on these windows.

This is something we can dig into more now. However, it might be better to wait just a bit (if we have time) until the revised Calsim model with the ROC on LTO and DCR 2019 / components of the SWP ITP are incorporated in.

Ali

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From: Rob Kunde <rkunde@wrmwsd.com>
Sent: Monday, August 10, 2020 2:31 PM
To: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Sites Water Supply Modeling for SWP Participants

Jerry and Ali:

I have fielded the following questions from recent meetings among the SWC Participants, and today several SWC Non-Participants asked varying questions with this theme. I am only able to provide a general answer.

In the Operations Table of the Executive Prospectus, significant releases are shown for wet and above normal years when there is little if any SWP capacity to move water. When and how much water in the Operations table would be available to the SWP Participants? What is the potential for this water to conflict with movement of other water such as baseline (pre-existing Table A Project water) supplies?

Rob Tull has repeatedly stated the modeling uses the SWP Table A demand patterns and moves water whenever there is available capacity. But in wet and above normal years, there is little if any SWP conveyance capacity (limited by the BiOps and existing Banks PP capacity) and the Sac Valley agencies don't need Sites water in those years. This merits clarification.

It appears to me that there is enough interest in this to justify preparing a document on the matter. The analyses are obviously already done; we just need a breakdown. The starting point would be to show the 82 year CALSIM-II model run with the South of Delta deliveries (baseline SWP and incremental Sites water) shown for each month. Then a summary could also be prepared. I know there are multiple model runs under differing assumptions, but I think we could pick one or two as representative.

I would like to discuss this further with you and bring Cindy or Eric and two others into the discussion.

Please ponder and advise.

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@wmnwsd.com

From: Tull, Robert/SAC [Robert.Tull@jacobs.com]
Sent: 8/11/2020 10:35:00 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]
CC: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Subject: RE: Sites Water Supply Modeling for SWP Participants

Ali – see strike out and edits in red below

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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/11/2020 10:38:54 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Reclamation Coordination Side-by-Side Schedule

Hi Ali,

I think that sounds good for now. When you have time, we should talk about the schedule for the Final EIR/EIS. I had pushed the ROD to September because I saw another schedule that shows the Final EIR/EIS completed in May. I may be wrong but I think the March date was for the admin Final. So I pushed the ROD to September based on current time limits and assuming the project is taken off pause in March 2021.

Since we will likely be updating the entire schedule once we confirm EIR/EIS approach, this is a good target date. I am really hoping that the comments on the Draft Revised EIR/Supplemental EIS will not be as extensive as on the 2017 Draft EIR/EIS and we will be better prepared with responses.

Thanks,

Laurie

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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 Commission Determinations and Additional Eligibility Requirement

Sites Reservoir Project

Sites Project Authority

The Sites Project Authority is proposing a surface storage project, the Sites Reservoir Project. The Sites Reservoir Project would be a 1.81 million acre-foot offstream surface storage reservoir located in the Sacramento Valley west of the town of Maxwell. The proposed reservoir's conveyance facilities would include the use of existing Tehama Colusa Canal and Glenn-Colusa Irrigation District Canal diversion and conveyance facilities, plus a proposed new diversion and discharge pipeline. Sources of water would be Funks Creek and Stone Coral Creek, which would be impounded by the proposed reservoir and the Sacramento River. Operation of the proposed reservoir would be in cooperation with the operations of existing Central Valley Project (CVP) and State Water Project (SWP) system facilities.

The California Water Commission (Commission) accepted the following monetized public benefits for this project:

- Ecosystem Improvement—Refuge water supply
- Ecosystem Improvement—Yolo Bypass flows
- Recreation
- Flood Control

Emergency Response and Recreation were considered by the Department of Water Resources as non-monetized benefits.

Introduction

This document addresses the following components of the Commission's Water Storage Investment Program (WSIP) project evaluation process:

- **Determinations:** The Commission must make nine (9) determinations by before assigning a maximum conditional eligibility amount.
- **Additional Eligibility Requirement:** The Commission must consider the eligibility requirement related to wild and scenic rivers.

Part 1: Discussion of Commission Determinations

Regulation section 6011(c) states that before the Commission assigns a maximum conditional eligibility amount to a project, the Commission shall make all nine determinations based on the technical review and appeal information. The determinations are the following items:

- The proposed project is cost effective;
- The proposed project improves the operations of the State water system;
- The proposed project provides a net improvement in ecosystem and water quality conditions;

- The proposed project provides measurable improvements to the Delta ecosystem or to the tributaries to the Delta;
- The Program cost share is less than or equal to 50 percent of the proposed project’s total capital costs, with the exception of conjunctive use projects and reservoir reoperation projects;
- The Program funded ecosystem improvement benefits make up at least 50 percent of the total public benefits funded by the Program;
- The proposed project appears to be feasible;
- The proposed project will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta; and
- The proposed project is consistent with all applicable laws and regulations.

If, for a project, the Commission cannot make any single determination then a maximum conditional eligibility determination (MCED) cannot be made for that project.

Relationship Between Determinations and Eligibility

These determinations are made before projects have completed all project formulation efforts. Regulations section 6013(c) states that additional requirements (such as completed feasibility studies, final environmental documents, contracts for the non-WSIP cost share, contracts for administration of public benefits, and permits) must be obtained by applicants after the MCEDs are made, but before the Commission makes a final award to the project. Those additional requirements may result in changes to the project that was proposed to the Commission in the August 2017 Application. Such changes may positively or negatively affect project eligibility and in turn one or more of the Commission’s determinations. The Commission will consider such changes in determining a project’s final award (section 6013(f)(3-5)). Additionally, regulations section 6013(f)(2) sets January 1, 2022, as the deadline for completing feasibility documents.

Table 1 presents Staff’s assessment of whether each of the nine determinations conditions has been met. This assessment is based on the technical review and the appeal.

Table 1 - Staff Recommendations – Commission Determinations	
1. The proposed project is cost effective.	--
<p>The quantified costs and benefits may have changed since the submission of the application in August 2017 and the February 2018 appeal. Staff recommends the Commission discuss with the applicant, consistent with the requirements of the Bagley-Keene Act, any changes that relate to cost effectiveness. The Commission may determine the project to be cost-effective based on the following factors:</p> <ul style="list-style-type: none"> • Monetized and non-monetized benefits and costs as described in the application • A discussion with the applicant, consistent with the requirements of the Bagley-Keene Act, about any changes in benefits and costs related to cost effectiveness (Regulations section 6004(a)(4)(E)) that may have arisen since the submission of the application <p>Any changes that arise from such a discussion would need to be documented and supported as part of the ongoing WSIP regulatory process.</p>	
2. The proposed project improves the operations of the state water system.	YES

Table 1 - Staff Recommendations – Commission Determinations	
<p>The applicant described how the project would be integrated into the local, regional, state, or federal systems that provide water resources benefits within California. Such integration would improve the operations of the state water system. The proposed Sites Reservoir Project operations would be coordinated and integrated with the state and federal systems as well as regional and local water agencies. The proposed project would provide additional storage and system flexibility to the system. The additional storage in the SWP and CVP reservoirs resulting from the proposed project would provide greater flexibility in operating the overall water system.</p>	
<p>3. The proposed project provides a net improvement in ecosystem and water quality conditions.</p>	<p>YES</p>
<p>The ecosystem public benefits accepted by the Commission for this project are:</p> <ul style="list-style-type: none"> • Ecosystem Improvement—Refuge water supply • Ecosystem Improvement—Yolo Bypass flows <p>The California Department of Fish and Wildlife (CDFW) found that the monetized ecosystem benefits, as described in the application, meet the requirements of Chapter 8, as related to matters within its purview. The proposed project would deliver water to the Yolo Bypass as a smelt benefit and to deliver Incremental Level 4 refuge water to National Wildlife Refuges, State Wildlife Areas, and privately managed wetlands to improve wetland habitat and provide benefits to species utilizing these habitats. Although CDFW reserved its concerns regarding the impacts to salmon that could result from the operations of the proposed project, it found that pulse flows to the Yolo Bypass are a substantiated ecosystem benefit which is consistent with the Delta Smelt Resiliency Strategy and that the refuge water constitutes an ecosystem improvement. This project also appears to contribute to ecosystem-related water quality improvements by enhancing wetlands and providing additional seasonal flows.</p> <p>Staff conclude that the proposed project appears to contribute to the restoration of aquatic ecosystems and native fish and wildlife, including those ecosystems and fish and wildlife in the Delta (Water Code section 79753(a)(1)).</p>	
<p>4. The proposed project provides measurable improvement to the Delta ecosystem or to the tributaries to the Delta.</p>	<p>YES</p>
<p>The ecosystem public benefits accepted by the Commission for this project are::</p> <ul style="list-style-type: none"> • Ecosystem Improvement—Refuge water supply • Ecosystem Improvement—Yolo Bypass flows <p>Based on CDFW’s finding that the monetized ecosystem benefits meet the requirements of Chapter 8 Staff conclude that the project will provide measurable improvements to the Delta ecosystem or to the tributaries to the Delta.</p> <p>These ecosystem public benefits will likely provide changes in the physical, chemical, or biological conditions that provide public benefits which can be quantified at a specific location and time (Water Code section 79752; Regulations section 6001(a)(48)).</p>	

Table 1 - Staff Recommendations – Commission Determinations	
5. The proposed project’s program cost share is less than or equal to 50 percent of the proposed project’s total capital costs, with the exception of conjunctive use projects and reservoir reoperation projects.	YES
Based on the Commission’s decision on May 3, 2018 and consistent with California Water Code section 79756(a), the project’s WSIP cost share is less than or equal to 50 percent of the project’s total capital costs. The Commission’s May decision determined the maximum eligibility amount for each project, which necessarily included consideration of the project’s WSIP cost share. The maximum eligibility amount for this project is \$1,008.28 million and the project’s total capital cost is \$4,397.10 million.	
6. The proposed project’s program-funded ecosystem improvement benefits make up at least 50 percent of the total public benefits funded by WSIP.	YES
The Commission’s decision on May 3, 2018 determined the public benefit amount for each project, which necessarily included consideration and determination of the project’s ecosystem benefits. Based on that decision, the project’s public benefits consist of at least 50 percent ecosystem improvements, as required by Water Code section 79756(b).	
7. The proposed project appears to be feasible.	YES
Notwithstanding the implementation risks documented in the Technical Review, on whole the project appears to be feasible. The applicant demonstrated that the project can be constructed with existing technology and available construction materials, work force, and equipment. The applicant also demonstrated that the project is technically feasible consistent with the preliminary operations plan.	
8. The proposed project will advance the long-term objectives of restoring ecological health and improving water management for beneficial uses of the Delta.	YES
Section 6001(a)(7) of the Regulations defines “beneficial uses of the Delta” as those: <i>“...identified in the State Water Board’s ‘Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary’ (December 2006).”</i> CDFW found that the that the monetized ecosystem benefits, as described in the application, meet the requirements of Chapter 8, as related to matters within its purview. Although CDFW reserved its concerns regarding the impacts to salmon that could result from the operations of the proposed project, it found that pulse flows to the Yolo Bypass are a substantiated ecosystem benefit which is consistent with the Delta Smelt Resiliency Strategy and that the refuge water constitutes an ecosystem improvement. The identified public benefits appear to advance ecological beneficial uses of the Delta, including: Cold Freshwater Habitat; Wildlife Habitat; and, Rare, Threatened, or Endangered Species. The advancement of beneficial uses resulting from the project would aid in restoring healthy wildlife corridors, and ecologically diverse habitats that support the Delta ecosystem complex.	
9. The proposed project is consistent with all applicable laws and regulations	YES
The applicant stated in the application that the project will comply with all applicable laws and regulations. Such compliance is a requirement for WSIP funding.	

Part 2: Additional Eligibility Requirement

Wild and Scenic Rivers

Regulations section 6006(c)(2) identifies six additional eligibility items that require the Commission's consideration as part of the technical review. Five of the additional eligibility items are included in the determinations discussed above. One additional eligibility item (Wild and Scenic Rivers) is not included in the determinations. Water Code sections 79711(e) and 79751(a) prohibit the use of WSIP funds by any project that could have an adverse effect on the values upon which a Wild and Scenic River or any other river is afforded protections pursuant to the California Wild and Scenic Rivers Act or the federal Wild and Scenic Rivers Act.

The Sites Reservoir Project is unlikely to adversely affect a Wild and Scenic River, including its free-flowing character. The Black Butte River, which is located approximately 35 miles northwest of the proposed project area, is the nearest designated Wild and Scenic River, and the project does not propose a hydrologic connection to this watershed. The proposed project is an off-stream reservoir within the Corral Creeks watershed, which does not include any designated Wild and Scenic Rivers. The project proposes to divert water from, and release water to the Sacramento River watershed; and, there are currently no designated Wild and Scenic Rivers in this area of the watershed.

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/12/2020 9:37:03 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]
Subject: RE: Notes from CDFW WISP call

Sorry, one clarification on #6. Water contract negotiations are NOT considered to be open to the public by CDFW.

John Spranza

D 916.679.8858 M 818.640.2487

From: Spranza, John
Sent: Wednesday, August 12, 2020 9:22 AM
To: aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>
Subject: Notes from CDFW WISP call

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Kristal Davis-Fadtke: Environmental Program Manager- WISP

Page Uttley, Supervisor for WISP Program

CDFW Comments.

- 1) Flexibility in the water contract is important but the contract must meet the requirements of the WISP regulations.
 - a. The existing criteria that define the WISP benefits are in the WISP regulations (Section 6001. Definitions).
- 2) Per CDFW, the determined benefits are only realized when the water reaches the point/location of the defined benefit.
 - a. EXAMPLE: Sites WISP designated benefit for "Ecosystem Improvement—Yolo Bypass flows" would require the water to be delivered to the bypass and effect the ecosystem in a manner defined under Section 6001.
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- 7) The next meeting would include a discussion of the Project, its conveyance and discuss how to move water through the Sac Valley to the areas of designated benefit.

Let me know if you have any questions on this.

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: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/12/2020 10:58:40 AM
To: Spranza, John [John.Spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: Re: Notes from CDFW WISP call

Here are my additions. Nice job on your notes John, very helpful.

I came away with an understanding we all felt that the water supply bucket was separate from the environmental bucket and if the environmental piece was not meeting its goals there would NOT be a dipping into the water supply bucket to make the environment piece whole, ie every investors piece was their own to manage independently with no fear of one partner trying take another partners without their consent. I also felt like this might in some ways conflict with your #1 below because their seemed to be a view that the Prop 1 requirements took precedence. More work to do on this.

Also we talked about "arms length" distancing of the regulatory side from the investor side. We were assured this occurs because the regions write permits and that section reports to a different deputy director than the investor side. However, we've seen evidence already when Ali and I have met with Chad and Kristal that the separation is not as apparent as it was stated to be. Because Chad has been involved in the discussions about diversion criteria. So this is another area of follow-up, most likely with Chuck and Chad.

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Date: Wednesday, August 12, 2020 at 9:37 AM
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Sent: Wednesday, August 12, 2020 9:22 AM
To: aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>
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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

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/12/2020 2:08:46 PM
To: Jerry Brown [jbrown@sitesproject.org]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Notes from CDFW WISP call

I agree on both your points, and I have too seen Chad and Kristal breach that separation.

John Spranza

D 916.679.8858 M 818.640.2487

From: Jerry Brown [mailto:jbrown@sitesproject.org]
Sent: Wednesday, August 12, 2020 10:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Re: Notes from CDFW WISP call

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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D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com

hdrinc.com/follow-us
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From: Jeff Kivett [JKivett@BrwnCald.com]
Sent: 8/13/2020 8:48:08 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: FW: EBLC Water Task Force Meeting

FYI on Jerry presenting.

From: Lindy Lavender <lindy@eblcmail.org>
Sent: Thursday, August 13, 2020 8:17 AM
To: Jeff Kivett <JKivett@BrwnCald.com>
Subject: EBLC Water Task Force Meeting

Water Task Force Meeting

Curious about what is happening with our local reservoir projects? Join us for a California reservoirs project update. We will check-in with staff about three projects - Sites, Pacheco, and Los Vaqueros.

About our Speakers:

Chris Hakes

Chris Hakes is the Deputy Operating Officer for the Dam Safety and Capital Delivery Division for Santa Clara Valley Water District (Valley Water). Chris has worked at Valley Water for 16 years, working on both Water Utility and Watersheds Capital projects. He previously served as the Assistant Operating Officer for Water Utility Capital Division and the Deputy Operating Officer for the Treated Water Delivery Division. In his current role as Deputy of Dam Safety, he has oversight of all 10 of Valley Water's dams as well as the effort toward the expansion of the Pacheco reservoir. In conjunction with the Deputy Operating Officers for Watersheds Design and Construction and Water Utility Capital, Chris also oversees implementation of Valley Water's \$6.1B five year rolling Capital Improvement Program.

Chris has a B.S. in civil engineering from Santa Clara University and a M.S. in structural engineering from University of California Berkeley. He is a registered Professional Civil Engineer in the state of California. Chris is also trained as a SWPPP Developer and Practitioner in California and Project and Program manager.

Jerry Brown

Mr. Brown has 34 years of experience including planning, design, construction, operation, and maintenance of water, wastewater and water recycling systems for urban areas. He started Waterology Consulting in January 2020. In March 2020, Mr. Brown and Waterology were selected to perform Executive Director services for the Sites Reservoir Project. In this capacity, Mr. Brown serves in the lead role overseeing project development and he reports to the Sites Authority JPA Board of Directors and its Project Reservoir Committee. Previously, Mr. Brown served as General Manager of the Contra Costa Water District (CCWD) for 9 1/2 years through December 2019. Mr. Brown is a registered Civil and Mechanical Engineer in California. He holds a Bachelor's Degree in Mechanical Engineering from California State University at Northridge, a Master's Degree in Civil Engineering from the University of Southern California, and a Master's Degree in Business Administration from California State University at San Jose.

Marguerite Patil

Marguerite Patil joined the Contra Costa Water District in 2000 and is the Assistant General Manager for Policy and External Affairs for the agency. She has a degree in mechanical engineering from U.C. Santa Barbara and is a registered civil engineer with over 30 years of experience in project management, planning, design and construction on a variety of civil, mechanical and environmental engineering projects. She has served as Program Manager of the Los Vaqueros Reservoir Expansion Project since the project began in January 2001, including leadership of the partnership development, governance formation, stakeholder engagement, environmental analysis, and engineering feasibility design efforts. She is engaged in the agency's state and federal legislative affairs and inter-agency coordination efforts. She also manages CCWD's Delta and regional strategic initiatives, collaborative science, and climate change resilience programs.

Date: August 18, 2020
Time: 08:30 AM - 10:00 AM PDT
Location: Join Zoom Meeting
<https://us02web.zoom.us/j/86236390056?pwd=dUUzR1JjcVBzc1B0KzM0aTRaT1RLdz09>

Meeting ID: 862 3639 0056

Passcode: 658757

One tap mobile

+16699006833,,86236390056#,,,,,0#,,658757# US (San Jose)

+12532158782,,86236390056#,,,,,0#,,658757# US (Tacoma)

Contact: Lindy Lavender

Email: lindy@ebicmail.org

[Click Here for More Information](#)

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This email was sent on behalf of East Bay Leadership Council by GrowthZone, 4837 County Road 77, Nisswa, MN 56468. To unsubscribe [click here](#). If you have questions or comments concerning this email or GrowthZone services in general, please contact us by email at support@GrowthZone.com.

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/13/2020 11:33:40 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: additional NGO comments
Attachments: additional NGO letters.docx

Hi Ali,

I have reviewed the other NGO letters and developed the attached summary. CH had already summarized a few of these and I expanded to cover all of the NGO letters (with the exception of the 2019 SCS letter that was already in the table). I will spend the afternoon adding to the table. If you see anything that you want to highlight, please do.

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/>

NGO Letters

NRDC Letter (1/15/18) Summary #12

- **EIR/EIS fails to consider a reasonable range of alternatives (I)**
 - Alternatives that reduce water diversions from the Sacramento River (particularly during all but wet water year types and during periods of moderate and low flows) would result in reduced adverse effects on native fish and wildlife in Sacramento River and Bay-Delta estuary
 - Claim “**tiering**” from **CALFED ROD** which was improper
 - Must analyze more than one operational alternative in order to identify alternatives that would minimize or avoid adverse environmental impacts of the project (per their scoping comments).
 - Alternative that would not result in substantial reductions in Delta outflow during winter and spring months
 - One or more alternatives that result in increase in Delta outflow during winter and spring
 - Additional alternative that is consistent with the water operational requirements being proposed for California WaterFix
 - CDFW potential **operational criteria** to protect flows and reduce adverse impacts on salmon, sturgeon, longfin smelt, Delta smelt, and other native fish species need to be evaluated
 - Consider **other storage alternatives such as groundwater storage**, conjunctive use, and/or reoperation of reservoirs to improve water supplies and ecosystem protection
- **Reclamation violated FWCA (II)**
 - Claim FWCA report required to be included in draft EIS
- **Failure to use an accurate environmental baseline (III)**
 - Fails to include several permit conditions imposed prior to the NOP which will be implemented prior to 2030 (primarily the **Revised Shasta RPA and Yolo Bypass restoration including the proposed Fremont Weir notch**)
 - **Fall X2** per 2008 Delta Smelt BO not appropriately addressed
 - Flawed because it is assumed full **contract deliveries** which have never occurred (never more than 75% of contract amounts)
 - **Need to include climate change assumptions in baseline (IV)**
 - Suggests incorporation into baseline rather than separate discussion in Chapter 25
- **2010 CALSIM** model inappropriately used (instead of 2015 version) **(V)**
 - States inconsistency in Appendix 6D related to Delta Alt D outflow
- **Fails to accurately assess impacts to aquatic resources from proposed operations (VI)**
 - **Arbitrary thresholds of significance** - 5-10 % flow reductions will have significant adverse effects
 - **Longfin smelt** impacts greater than 0 are significant (mandatory finding of significance)
 - Operational impacts of greater than 5% are not called significant
 - Impacts to salmon and steelhead inadequate
 - Ignore reduced flows
 - Assume no impact at **fish screens**
 - Fail to assess impacts from **reduced floodplain inundation**

- **Ineffective mitigation measures**
 - **Fail to use existing life cycle models**
- Consider feasible mitigation measures, including minimum bypass flows
- **Delta smelt** impacts
- **Fails to accurately assess impacts to terrestrial biological resources (VII)**
 - Mitigation measures too broad - revise Mitigation Measure Wild-1b – more specificity by species including **ratios/performance standards**
 - Coordination with CDFW not consistently identified
 - **Giant Garter Snake** impacts and mitigation inadequate
 - **Outdated survey information** – inaccurate estimation of impacts
 - Inadequate assessment of impacts to **wildlife refuges – bird strikes associated with powerlines** and overall **impacts to Delevan NWR** as well as surrounding private lands; need to evaluate impacts to **Colusa and Sutter NWRs**
 - No impacts associated with the **TRR**
- **Fails to adequately analyze cumulative impacts and fails to disclose potentially significant adverse impacts to aquatic resources (VIII)**
 - Need to incorporate **WaterFix and Shasta Lake WRI**
 - Cite prior MBK work that identifies significantly reduced Delta outflows and Sac River flows
- **Presentation of Existing Conditions/No Action Alternative is flawed (IX)**
 - Appendix 12F
 - Appendix 6A
 - Examples of misleading and inaccurate descriptions of modeling results

Additional Analysis Requested:

- 1) Explanation of range of alternatives and reasons for considering single operational alternative;
- 2) Address environmental baseline flaws such as contract delivery assumptions, failure to include climate change, Shasta RPA, Yolo Bypass
- 3) Analyze more alternatives such as: alternatives that reduce water diversions from Sac River (especially in wet year types and during moderate and low flows), alternative that would not result in substantial reduction in Delta outflow, alternative that increases Delta outflow in winter and spring, and alternative that is consistent with Waterfix operational requirements;
- 4) Need to include evaluation of CDFW potential operational criteria to protect flow and reduce impacts on native fish species,
- 5) Consider other storage alternatives (groundwater storage, conjunctive use etc.);
- 6) Update CALSIM model to the most recent model
- 7) 7) Need FWCA report
- 8) Reanalysis of impacts to Aquatic and Terrestrial resources including updated surveys and mitigation measures for potentially significant adverse impacts

AquAlliance Letter (1/15/18) #17

- **CEQA lead should be DWR** given DSOD oversight and need to coordinate operations with SWP
- **Inadequate project description** – lacks detail/inappropriate impact analysis, improper

segmentation of environmental review (cites tie with SVWMA), seismic activity not addressed, **deferred surveys**, inadequate statement of objectives/P&N

- **Hydrology/water quality (selenium, mercury, hazardous materials, salt)** impacts,
- Additional **wetland survey and mitigation** required, stream flow depletion, concerns related to past CVP/SWP operations and regulatory processes/documents and supposed to tie Sites operations and intentions
- **Cultural resources** evaluations, impacts, and mitigation not completed or appropriately identified (including cumulative impacts)
- **Cumulative impacts** not fully analyzed including recent water transfers – provides many projects/actions suggested to be included

Pacific Coast Federation of Fisheries Associations/Institute for Fisheries Resources/Save California's Salmon/San Francisco Baykeeper/Winnemem Wintu Tribe (1/15/18) #20

- EIR/EIS should be prepared a part of a **FERC license application**; numerous deficiencies
- Use of **Existing Conditions/No Project/Action baseline** biases the analysis and avoids CEQA mitigation requirements
- Document needs to include an **operations plan and diversion schedule**
- Use of old information in the **modeling**; outdated and insufficient model
- **Cumulative impacts** evaluation needs to identify numerous other projects and actions (provides list)
- States on-going **economic impacts** associated with salmon decline
- **Modeling** is problematic – monthly modeling insufficient for addressing fisheries needs
- EIR/EIS does not discuss **flow management impacts** of the project
- Proposed project does not adequately account for importance of flow fluctuations and fishery habitat needs
- Impacts to important **floodplains (including Sutter and Yolo bypasses)** – need to be identify impact to fish production and water quality
- **Water quality** impacts – diversion will further impact **water temperatures** downstream of the proposed diversions
- Reduced flows from Shasta and Keswick – concerns over **metals and reduced dilution**; reduced cold/fresh water to the Delta
- Potential **salinity** issues from Sites Reservoir releases – need a reservoir management plan
- **Climate change** impacts not evaluated
- **Fishery impacts** not properly addressed – no analysis of current state of Delta or Sacramento

fisheries as well as Sacramento River tributaries and Trinity system.

- **No economic analysis** – cite 8% reduction in appendixes in highwater years and 11% increase in normal years
- Impacts to **Klamath and Trinity River salmon** populations not properly analyzed – need to reference recent legal decisions since ROD
- **Sacramento River/Delta fisheries** impacts not properly analyzed – project will exacerbate current problems – **winter and spring flows** need to be maintained; project would result in increased **Delta reverse flows**
- **Water quality** conditions will encourage propagation of **non-native fish species**
- **Tribal beneficial uses** (i.e. water and salmon) impacts not disclosed as well as **public trust** resources – need to reference **reintroduction of salmon and fish passage above Shasta Dam** and potential Project effects

California Indian Water Commission (1/15/18) #21

- **Support the No Project** – project counterintuitive to the laws of nature
- **Ecological effects of the project inadequately analyzed** – suggest consulting with tribes; access from the top of contributing watersheds
- **Recommend use of Mauri-o-meter** to assess impacts to the environment – considers cultural wellbeing (inclusive of metaphysical aspects), social wellbeing, and economic wellbeing using a series of questions that are filtered through a heuristic model

CSPA/AquAlliance/California Water Impact Network (1/13/18) #23

- **Inadequate project description** – need to identify who will operate project, how decisions will be made, and responsibility including prioritizing use of Sites releases
- **Operating rules** too vague – speculative and hypothetical
- Averaging of **model results** masks real impacts
- Potential **thermal impacts** associated with reservoir releases
- **Insufficient range of alternatives**
 - Does not include more restrictive bypass requirement than existing standards
 - Need an alternative that includes operations with WaterFix in place
- Inadequately addresses required **water right** amount, timing, and **relationship with CVP and SWP**
- No discussion as to how **water transfers** would be facilitated
- Does no disclose impacts associated with **decreased floodplain inundation**

Friends of the River (1/15/18) #24

- Inadequate **project description** – need to identify how the project will be operated, inconsistencies with Reclamation's feasibility report
- Inadequate **range of alternatives** – speculative and hypothetical
- Lack of meaningful information about **water rights** – how will the project insure only tributary water will be diverted to Sites
- Fails to adequately consider **impacts of Sacramento River diversions**:
 - Models – analysis depends on models with known deficiencies
 - Environmental Standards – existing flow standards inadequate
 - Public Lands and Land Use – analysis barely acknowledges public lands along Sacramento River
- Inadequate description of **impacts on Sacramento River water quality**
 - Models inadequate to accurately assess temperature impacts
- Fails to adequately address **reservoir-triggered seismicity** on local communities and structures – needs to fully examine the role of frequent filling/emptying of reservoir in triggering earthquakes
- Inadequate in addressing **greenhouse gases** - recommends use of World Bank's guidelines on GHG measurement
- Inadequate evaluation of **rare plants** – analysis should include guidelines and sufficient information
- Overstates **project benefits for threatened and endangered salmonids** – not a net benefit of Sites
- Other specific comments on Draft EIR/EIS regarding:
 - Range of alternatives – need to look at smaller reservoirs
 - Surface water resources – needs to address water rights over-allocation issue
 - Fluvial Geomorphology – analysis is adversely affected by Sacramento River between Colusa and Red Bluff considered part of Secondary Study area
 - Terrestrial Biology – disputes findings of the technical analysis, mitigation lacks detail
 - Geology, Minerals, Soils and Paleontology – no mention of mercury
- Request **withdrawal of the Draft EIR/EIS**, revision and recirculation

**Friends of the River, Sacramento River Preservation Trust, Sierra Club (1/15/18)
#25 (expanded version of comments provided in Letter #24)**

- Expanded version of Letter #24 – includes all comments list above and:
 - Appendices 6B and 6C – review of appendices indicates alarming flow impacts to the Sacramento River and Sutter Bypass, particularly drought years
- Request withdrawal of the Draft EIR/EIS, revision and recirculation

Klamath Riverkeeper (1/15/18) #27

- Compliance with **California and Federal Endangered Species Acts** – increased Sacramento River flows and increased outflows from the Delta necessary to support native fish and wildlife; EIR/EIS fails to provide a consistent operational plan

- Compliance with **California Reasonable Use Doctrine** not demonstrated - reasonableness requires evaluation of alternative water supplies to meet given need and evaluation of the impacts of new water uses on existing legal uses and water users
- Compliance with **Public Trust Doctrine and Tribal Trust Obligations** – suggests that reduced flows would occur in Sacramento, Trinity and Klamath rivers and failure to comply with Public Trust doctrine and protect Tribal Trust resources
- Must accommodate **Humboldt County's Trinity River water right** – county may wish to preserve its water right to augment rather than satisfy flows to comply ESA
- Fully analyze the **No Project Alternative** – fails to include operational plans and does not evaluate how No Project Alternative could satisfy consumptive and instream water supply needs
- The Final EIR/EIS must demonstrate that future instream flow requirements will not render Sites Reservoir a "stranded asset"

Save the American River Association (n/d) #30

- Analysis based on false premise that **current flow and water quality standards** for the river are adequate
- Entire project based on the false premise that there is **excess water in the Sacramento River** not needed for the environment
- Urges **new environmental document** be prepared and released for public review

Sierra Club, Shasta Group Mother Load Chapter (1/14/18) #31

- Sacramento River **water temperature** – reliability of the water temperature model, Sites Reservoir will have extremely poor water quality
- **Recreational opportunities** will be practically nonexistent due to shallow lake levels
- Site-specific **geotechnical data** missing
- The **summary of environmental effects** by resource (Table ES-2) reflects the "opinion" of the writers of the report, should be independent review to confirm if "opinion" is scientific defensible
- Source of rockfill material for riprap - further field investigation is needed to verify local bedrock is suitable
- Number of saddle dams indicative of poor project feasibility
- Sufficient water for agriculture, more water needs to be used in the Sacramento/San Joaquin Delta to **improve health of the aquatic habitat** – no mention of crop usage and future food types likely to be used in California in the future and associated impacts
- Funds for this project could be used and distributed to improving the health of the Sacramento/San Joaquin Delta
- Unclear if **hydropower** will be part of the project
- **No new facilities** should be constructed in the Sacramento River

- **No Project/No Action Alternative** should be selected

Sacramento Valley Chapter, California Native Plant Society (1/11/18) #122

- Project will destroy 15,000 acres of intact California **natural communities** including oak woodlands, chaparral, California prairie, riparian areas, and fresh and alkaline wetlands
- **Biological surveys**, including rare plants, inadequate

Karuk Tribe (3/6/19) #139

- **Tribal Consultation and Mitigation** absent - no consultation outside of footprint area, need to conduct additional AB 52 consultation
- Need to 'honestly' evaluate **foreseeable impacts to Trinity River water temperature objectives** associated with project operations – revised Trinity River Division (TRD) water operations associated with Sites Projects violates 2000 Trinity Record of Decision (ROD)
- Need to analyze foreseeable impacts to the Trinity River associated with **Trinity Lake carryover storage** – analysis assumes minimum Trinity Reservoir carryover storage, without sufficient carryover storage would not achieve Trinity River temperature objectives
- Inaccurate **baseline associated with TRD** water operations – analysis did not consider use of Humboldt County's 50 TAF water contract included in the Trinity River Division Act
- **Effective mitigation for Trinity River/Lower Klamath impacts** needed
- Incomplete **cumulative impact assessment** pertaining to TRD operations – impact of carryover storage to meet **temperature objectives** during multi-year droughts; impact on **CVP power generation**
- Any adverse impacts on **fishery resources of the Karuk Tribe** need to be thoroughly evaluated and disclose

From: Smith, Jeff/SAC [Jeff.Smith1@jacobs.com]
Sent: 8/13/2020 12:32:10 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites - Project Description Team

Hi Ali—

Long time. I will not need to attend this meeting, but appreciate the invite. Pete will cover for Jacobs.

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, August 13, 2020 11:11 AM
To: john.spranza@hdrinc.com; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; 'Heydinger, Erin' <Erin.Heydinger@hdrinc.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Henry.Luu@hdrinc.com; Monique Briard (Monique.Briard@icf.com) <Monique.Briard@icf.com>; Lecky, Jim <Jim.Lecky@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Marcia Kivett <MKivett@sitesproject.org>; Alexander, Jeriann <jalexander@fugro.com>; connermcdonald@gmail.com; Williams, Nicole <Nicole.Williams@icf.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Jim Watson <jwatson@sitesproject.org>; Boling, Robert M. <Robert.Boling@hdrinc.com>; Forrest, Michael <michael.forrest@aec.com>; Herrin, Jeff <jeff.herrin@aec.com>; Berryman, Ellen <Ellen.Berryman@icf.com>; Unsworth, Ellen <Ellen.Unsworth@icf.com>; Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; conner@cmdwest.com; Smith, Jeff/SAC <Jeff.Smith1@jacobs.com>
Subject: [EXTERNAL] RE: Sites - Project Description Team

Hi all – Below is a doodle poll to reschedule our next meeting:

<https://doodle.com/poll/mqxdyk7775gram7>

A quick update on the Dunnigan and Harrington pipeline alignments:

The engineering team has been in discussions with RD-108 on an alternative Dunnigan alignment east of the CBD that would 'straighten' the pipe alignment from CBD to the Sacramento River. After further consultation with RD-108 it was determined that additional real-estate outreach is required to vet this alternative alignment. Due to real-estate uncertainty at this time, the team will stay the course with the current Dunnigan pipeline alignment that is shown on the draft July 2020 plans. There are no significant changes expected to the Dunnigan pipeline alignment as part of the upcoming August 31, 2020 deliverables.

The engineering team has also been evaluating the potential for a Harrington pipeline alignment that is approximately 9 miles north of the Dunnigan pipeline alignment. Preliminary analysis indicate that a new pipeline will be required for about 6.25 miles between TCC and CBD; this is approximately 2.25 miles longer than the Dunnigan pipeline, and is estimated to cost \$47.9M more to construct. Based on this construction cost difference, the Harrington pipeline alignment does not appear to be an affordable option for the project.

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: Alicia Forsythe

Sent: Monday, August 10, 2020 2:21 PM

To: john.spranza@hdrinc.com; laurie.warner.herson@phenixenv.com; 'Heydinger, Erin' <Erin.Heydinger@hdrinc.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Henry.Luu@hdrinc.com; Monique Briard (Monique.Briard@icf.com) <Monique.Briard@icf.com>; Lecky, Jim <Jim.Lecky@icf.com>; Williams, Nicole <Nicole.Williams@icf.com>; robert.tull@jacobs.com; Rude, Pete/RDD <Pete.Rude@jacobs.com>; 'Jim Watson, General Manager' <jwatson@sitesproject.org>; Boling, Robert M. <Robert.Boling@hdrinc.com>; Forrest, Michael <michael.forrest@aecom.com>; Jeff.Herrin@aecom.com; Berryman, Ellen <Ellen.Berryman@icf.com>; Unsworth, Ellen <Ellen.Unsworth@icf.com>; Jerry Brown <jbrown@sitesproject.org>; 'Kevin Spesert (kspesert@sitesproject.org)' <kspesert@sitesproject.org>; conner@cmdwest.com; Smith, Jeff/SAC <Jeff.Smith1@jacobs.com>

Cc: Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Marcia Kivett <MKivett@sitesproject.org>; Alexander, Jeriann <jalexander@fugro.com>; connermcdonald@gmail.com

Subject: RE: Sites - Project Description Team

Hi all – We just met as an internal Sites team and have decided to cancel our Project Description team meeting this week. We don't have a lot in terms of updates and with everyone in the home stretch to our August deliverables, we figured folks could use the extra time for those.

I will be sending an email tomorrow with updates on the Dunnigan and Harrington alignments that we thought the team should be aware of. I will also be including a link to a doodle poll as our next meeting conflicts with the Authority Board meeting.

Thanks all and hope you have a fantastic week!

Ali

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

From: Marcia Kivett **On Behalf Of** Alicia Forsythe

Sent: Monday, May 11, 2020 6:41 AM

To: Alicia Forsythe; Ali Forsythe; john.spranza@hdrinc.com; laurie.warner.herson@phenixenv.com; 'Heydinger, Erin'; Arsenijevic, Jelica; Fisher, Linda; Henry.Luu@hdrinc.com; Monique Briard (Monique.Briard@icf.com); Lecky, Jim; Williams, Nicole; robert.tull@jacobs.com; Rude, Pete/RDD; Jim Watson, General Manager; Boling, Robert M.; Forrest, Michael; Jeff.Herrin@aecom.com; Berryman, Ellen; Unsworth, Ellen; Jerry Brown; Kevin Spesert (kspesert@sitesproject.org); conner@cmdwest.com; Smith, Jeff/SAC

Cc: Leaf, Rob/SAC; Marcia Kivett; Alexander, Jeriann; connermcdonald@gmail.com

Subject: Sites - Project Description Team

When: Wednesday, August 12, 2020 1:00 PM-2:30 PM (UTC-08:00) Pacific Time (US & Canada).

Where: +1 213-379-5743 Conference ID: 576 656 37#

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From: Briard, Monique [Monique.Briard@icf.com]
Sent: 8/13/2020 3:20:56 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites - Project Description Team

I'm going to be OOO Monday through at least Wed (still deciding on if I'll take the whole week off or not) on vacation. The discussion is in good hands with my team so just letting you know. Thanks, Monique

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, August 13, 2020 11:11 AM
To: John Spranza <John.Spranza@hdrinc.com>; laurie.warner.herson@phenixenv.com; 'Heydinger, Erin' <Erin.Heydinger@hdrinc.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Henry.Luu@hdrinc.com; Briard, Monique <Monique.Briard@icf.com>; Lecky, Jim <Jim.Lecky@icf.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Marcia Kivett <MKivett@sitesproject.org>; Alexander, Jeriann <jalexander@fugro.com>; connermcdonald@gmail.com; Williams, Nicole <Nicole.Williams@icf.com>; robert.tull@jacobs.com; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Jim Watson <jwatson@sitesproject.org>; Boling, Robert M. <Robert.Boling@hdrinc.com>; Forrest, Michael <michael.forrest@aecom.com>; Jeff.Herrin@aecom.com; Berryman, Ellen <Ellen.Berryman@icf.com>; Unsworth, Ellen <Ellen.Unsworth@icf.com>; Jerry Brown <jbrown@sitesproject.org>; Kevin Spesert <kspesert@sitesproject.org>; conner@cmdwest.com; Smith, Jeff/SAC <Jeff.Smith1@jacobs.com>
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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/14/2020 7:12:10 AM
To: Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; Sullivan, Lauren [lauren_sullivan@fws.gov]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) [Kenneth.Kundargi@wildlife.ca.gov]; Johnson, Matt@Wildlife [Matt.Johnson@wildlife.ca.gov]; Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]; Williams, Jonathan@Wildlife [Jonathan.Williams@wildlife.ca.gov]; Duane Linander (Duane.Linander@wildlife.ca.gov) [Duane.Linander@wildlife.ca.gov]; La Luz, Felipe@Wildlife [Felipe.LaLuz@wildlife.ca.gov]; Boyd, Ian@Wildlife [Ian.Boyd@Wildlife.ca.gov]; Nancy.A.Haley@usace.army.mil; Michael S. Jewell (michael.s.jewell@usace.army.mil) [michael.s.jewell@usace.army.mil]; Kevin.C.Lee@usace.army.mil
CC: Jerry Brown [jbrown@sitesproject.org]; Berryman, Ellen (Ellen.Berryman@icf.com) [Ellen.Berryman@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Cordova, Daniel (dcordova@usbr.gov) [dcordova@usbr.gov]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Kevin Spesert [kspesert@sitesproject.org]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; CFitzer@esassoc.com; Lecky, Jim [Jim.Lecky@icf.com]; Hendrick, Mike [Mike.Hendrick@icf.com]; Hassrick, Jason [Jason.Hassrick@icf.com]; Mark Carper [mcarper@usbr.gov]; Martin, Nathaniel J [nmartin@usbr.gov]; Lassell, Susan (Susan.Lassell@icf.com) [Susan.Lassell@icf.com]; Risse, Danielle [Danielle.Risse@hdrinc.com]
Subject: Sites Project Permitting Update
Attachments: 20200707_03-03B Preliminary Revised Draft EIR - EIS Alternatives_rev_20....pdf; Sites Right-Sized Project Overview Graphic_2020_08.pdf

Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- Reservoir size will be reduced from 1.8 to 1.5 million acer-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- Delevan diversion, pipeline and outfall has been removed.
- Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
 - Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a

Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the *Preliminary Revised Draft EIR/EIS Alternatives* to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- A joint Draft BA in May 2021
- Two 2081 ITP applications by November 2021 (one operations and one construction)
- Draft 404 and 401 permit packages for a December 2021 submittal
- Draft 401 for a December 2021 submittal
- Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

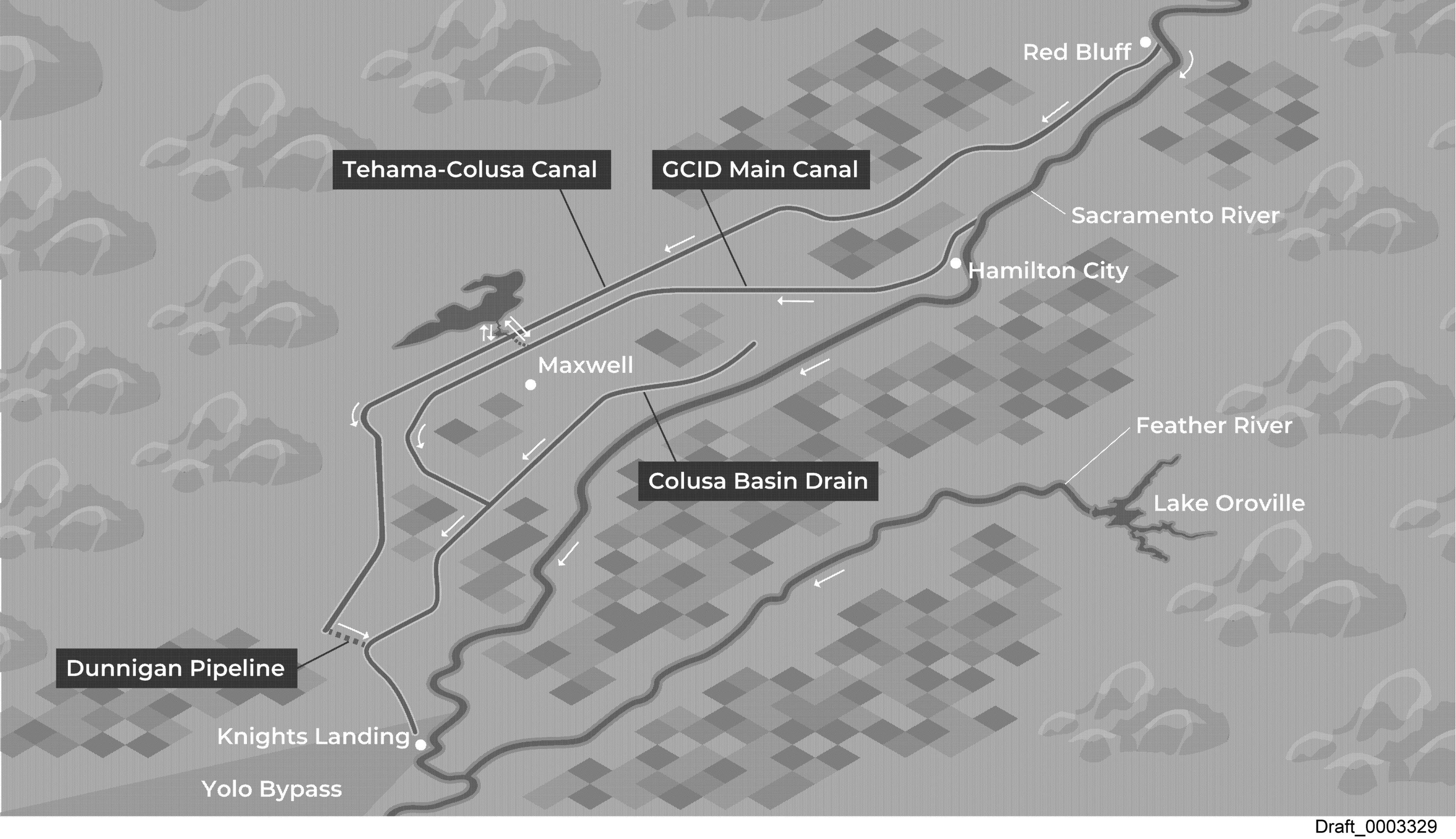
Regards,

John
Sites Project Environmental Permitting Integration Lead

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
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Tehama-Colusa Canal

GCID Main Canal

Red Bluff

Sacramento River

Hamilton City

Maxwell

Colusa Basin Drain

Feather River

Lake Oroville

Dunnigan Pipeline

Knights Landing

Yolo Bypass

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/14/2020 9:13:59 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]; Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]
CC: Jewell, Michael S CIV USARMY CESPCK (USA) [Michael.S.Jewell@usace.army.mil]; Nepstad, Michael G CIV USARMY CESPCK (USA) [Michael.G.Nepstad@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update

We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 8:41 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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.

Thanks John,

I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.

Nancy

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 8:27 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

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John

John Spranza

D 916.679.8858 M 818.640.2487

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Hi John,

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Thanks - Nancy

Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

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To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.Williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
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I'd be happy to answer any questions so feel free to email or call me.

Regards,

John
Sites Project Environmental Permitting Integration Lead

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

HDR
2379 Gateway Oaks Drive, Suite 200
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D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com <mailto:john.spranza@hdrinc.com>

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Okay. Sounds good. Let Matthew and I know when you are available.

Thanks - Nancy

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Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
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Sites Project Environmental Permitting Integration Lead

John Spranza, MS, CCN

Senior Ecologist / Regulatory Specialist

HDR

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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7Cd54220f131e5445fbfb408d8406868d1%7C3667e201cbdc48b39b42
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To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.Williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
Subject: [Non-DoD Source] Sites Project Permitting Update

Greetings from the Sites Project Team,

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I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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 <mailto:john.spranza@hdrinc.com>

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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7Cd54220f131e5445fbfb408d8406868d1%7C3667e201cbdc48b39b42
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p;reserved=0>

From: Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]
Sent: 8/14/2020 9:19:20 AM
To: Spranza, John [John.Spranza@hdrinc.com]; Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]
CC: Jewell, Michael S CIV USARMY CESPCK (USA) [Michael.S.Jewell@usace.army.mil]; Nepstad, Michael G CIV USARMY CESPCK (USA) [Michael.G.Nepstad@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update

Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

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John Spranza

D 916.679.8858 M 818.640.2487

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Sent: Friday, August 14, 2020 7:59 AM
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Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
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Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

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Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
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Regards,

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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 <mailto:john.spranza@hdrinc.com>

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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7Cd54220f131e5445fbfb408d8406868d1%7C3667e201cbdc48b39b42
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p;reserved=0>

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Sent: 8/14/2020 9:29:03 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]; Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]
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Subject: RE: Sites Project Permitting Update
Attachments: Ryan Davis.vcf

We are working with diverse group there but Ryan Davis is the PM, his contact is attached.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 9:18 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
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CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
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Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- * Reservoir size will be reduced from 1.8 to 1.5 million acre-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- * Delevan diversion, pipeline and outfall has been removed.
- * Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- * Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- * Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- * Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
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 - o Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - o Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- * No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the Preliminary Revised Draft EIR/EIS Alternatives to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- * A joint Draft BA in May 2021
- * Two 2081 ITP applications by November 2021 (one operations and one construction)
- * Draft 404 and 401 permit packages for a December 2021 submittal
- * Draft 401 for a December 2021 submittal
- * Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- * Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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 <mailto:john.spranza@hdrinc.com>

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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7Ca4e492fd11e94733556d08d8406da541%7C3667e201cbdc48b39b42
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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7Ca4e492fd11e94733556d08d8406da541%7C3667e201cbdc48b39b42
5d2d3f16e2a9%7C0%7C0%7C637330186955864414&sdata=Urhk%2BqVr08mx%2FqAmrf1X11vbmH84pxFJrr%2F%2F9GncwTo%3
D&reserved=0>

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/14/2020 11:12:37 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]; Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]
CC: Jewell, Michael S CIV USARMY CESPCK (USA) [Michael.S.Jewell@usace.army.mil]; Nepstad, Michael G CIV USARMY CESPCK (USA) [Michael.G.Nepstad@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update

Reclamation will be releasing a Supplemental EIS that will have all the changes included. Their alternatives that they have included in the final Feasibility Study that is due to be acted on by end of year bookends our "right-sized" locally preferred project. So, that will be how the s EIS gets updated and addresses the preferred project.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 9:19 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: Sites Project Permitting Update

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.

Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 9:14 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 8:41 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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.

Thanks John,

I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.

Nancy

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 8:27 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Hi Nancy,
We are planning to have ICF perform a delineation to support the permit application packet in 2021. I have Mike Vondergeest leading that up, and we are just waiting for our September 1 funding date to kick that off.

Our intention is to begin meeting with you and your staff in fall of 2020 to consult on the process and review the proposed methods and approach. We anticipate that we will not have access to the majority of the site so we are going to have to use significant imaging, LIDAR, selected surveys in areas where we do have access and groundtruthing.

Mike has a draft agenda already prepped, and soon after Sept 1 we will send that over for your review and comment and start scheduling the pre-app meetings.

We're looking forward to getting this started and will have our funding in place through 2021. Please let me know if you would like any background data on the project and we can share that with you and your staff.

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 7:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

We have not completed a Jurisdictional Determination on this project as of yet have we? Either way, we will need to see what exactly our jurisdiction would be for this project.

Thanks - Nancy

Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 7:12 AM
To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.Williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>;

CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
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I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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
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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7C54ce34b2ddce49d8138808d8406dd11f%7C3667e201cbdc48b39b42
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us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7C54ce34b2ddce49d8138808d8406dd11f%7C3667e201cbdc48b39b42
5d2d3f16e2a9%7C0%7C637330187698701105&sdata=JZDKRrZrU9SIEjj1faIh38B6qgux00GtbA1%2B08oDcYA%3D&reserved=0>

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/17/2020 6:11:42 AM
To: Lindy Lavender [lindy@eblcmail.org]; Gary Darling [gary@darlingh2o.com]
CC: Marcia Kivett [MKivett@sitesproject.org]
Subject: Re: August 18th Water Storage Update for the Water and Environmental Task Force

Thanks Lindy – Screen share is fine.

From: Lindy Lavender <lindy@eblcmail.org>
Date: Friday, August 14, 2020 at 10:14 AM
To: Gary Darling <gary@darlingh2o.com>, Jerry Brown <jbrown@sitesproject.org>
Cc: Marcia Kivett <MKivett@sitesproject.org>
Subject: RE: August 18th Water Storage Update for the Water and Environmental Task Force

Hello all,

Jerry – I think (if you're comfortable) it runs smoother if I give you permissions to share your screen and you run through your slides. If you'd prefer, I can do that and you can just say "next". Have you presented over Zoom before?

Best,
Lindy

From: Gary Darling <gary@darlingh2o.com>
Sent: Friday, August 14, 2020 10:11 AM
To: Jerry Brown <jbrown@sitesproject.org>
Cc: Lindy Lavender <lindy@eblcmail.org>; Marcia Kivett <MKivett@sitesproject.org>
Subject: RE: August 18th Water Storage Update for the Water and Environmental Task Force

Thanks Jerry. Nice presentation. (and HI Marcia!)

Unless Lindy is going to manage differently, I believe she will want you to share screen and manage your own presentation. Lindy – pls advise.

Thanks, Gary

Gary W. Darling
Darling H2O Consulting Inc.
925-382-4350
gary@darlingh2o.com
www.darlingh2o.com

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Friday, August 14, 2020 10:02 AM
To: Gary Darling <gary@darlingh2o.com>
Cc: Lindy Lavender <lindy@eblcmail.org>; Marcia Kivett <MKivett@sitesproject.org>
Subject: Re: August 18th Water Storage Update for the Water and Environmental Task Force

Here are my presentation slides for the meeting next week. Looking forward to it.

Will I be sharing my screen or will Lindy be managing the slides?

From: Gary Darling <gary@darlingh2o.com>
Date: Wednesday, July 29, 2020 at 3:38 PM
To: Jerry Brown <jbrown@sitesproject.org>
Cc: Lindy Lavender <lindy@eblcmail.org>
Subject: Re: August 18th Water Storage Update for the Water and Environmental Task Force

That worked! Nice picture 🖼️

Gary W. Darling
Darling H2O Consulting
Cell (925) 382-4350
gary@darlingH2o.com
www.darlingh2o.com

On Jul 29, 2020, at 3:33 PM, Jerry Brown <jbrown@sitesproject.org> wrote:

Hope this works.

From: Lindy Lavender <lindy@eblcmail.org>
Date: Wednesday, July 29, 2020 at 3:12 PM
To: Jerry Brown <jbrown@sitesproject.org>, Gary Darling <gary@darlingh2o.com>
Subject: RE: August 18th Water Storage Update for the Water and Environmental Task Force

Hi Jerry,

I hope you are well. I believe you said your bio was attached but it did not come through for me, would you mind resending?

Thank you,
Lindy Lavender

From: Jerry Brown <jbrown@sitesproject.org>
Sent: Wednesday, July 29, 2020 7:39 AM
To: Gary Darling <gary@darlingh2o.com>; Lindy Lavender <lindy@eblcmail.org>
Subject: Re: August 18th Water Storage Update for the Water and Environmental Task Force

Hi Gary and Lindy – Thank you for this very clear direction. Please find attached my brief bio. Jerry

From: Gary Darling <gary@darlingh2o.com>
Date: Monday, July 27, 2020 at 11:58 AM
To: Jerry Brown <jbrown@sitesproject.org>, "Marguerite Patil (mpatil@ccwater.com)" <mpatil@ccwater.com>, Garth Hall <ghall@valleywater.org>
Cc: Lindy Lavender <lindy@eblcmail.org>, "mcintyre@dsrsd.com" <mcintyre@dsrsd.com>, "Bob Whitley (rdwhitley@mindspring.com)" <rdwhitley@mindspring.com>, Dave Requa <dave@requa.org>, Dave Richardson <drichardson@woodardcurran.com>
Subject: August 18th Water Storage Update for the Water and Environmental Task Force

Greetings Jerry, Marguerite and Garth. Thanks for agreeing to present to our August 18 Water and Environmental Task Force meeting to bring our members up to speed on the reservoir projects that most impact the Bay Area water supplies. We expect that we will have great attendance (50 plus). The Zoom meeting will start promptly at 8:30 and each presenter will have 20 minutes to talk, then we will open it up to questions with a closing time of 10am.

Since 20 minutes is a pretty short timeframe for you to present and a desire by our team that you all cover similar territory we have the following suggestions on what to cover:

1. Brief project overview (location, size including water supply/storage benefits, schedule and cost)
2. Description of NET environmental benefits that will be used to convince NGOs to support your project and regulatory agencies to permit
2. Challenges to getting to construction including:
 - a. Strategies related to partnerships and funding at the local, state and federal levels
 - b. Strategy on avoiding, minimizing and then mitigating impacts to protected aquatic and terrestrial species in order to accelerate permitting & construction
 - c. Others?
3. Issues that the 3 projects can work together on (e.g.: state and federal funding and timing, regulatory agency priorities, editorials advocating public support, etc.)
4. What can the East Bay Leadership Water and Environmental Task Force do that would be helpful?

Timing:

1. **Please provide a brief bio to myself and Lindy by the end of this week (August 31).**
2. **Please provide your PowerPoint to myself and Lindy by August 14th.**

Please do not hesitate to reach out to me if you would like to discuss further. Thanks, Gary

Gary W. Darling
Darling H2O Consulting Inc.
925-382-4350
gary@darlingh2o.com
www.darlingh2o.com

<Jerry Brown Bio EBLC.docx>

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/17/2020 8:34:49 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]
Subject: RE: Sites - Response to Comments Batches for Final EIR/EIS

Yes, I can do that this morning. Good luck with the vet!

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Monday, August 17, 2020 8:33 AM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Jerry Brown <jbrown@sitesproject.org>
Subject: Sites - Response to Comments Batches for Final EIR/EIS

Laurie - I am going through my notebook while waiting for Jake at the vets office. Jerry asked back in June if I could send him the share point link to the start of the response to comments that we did last year. I realize that I never followed up on this action item.

Can you send him the share point link and anything you think might be helpful? Please also send the link to the comment letters. I think he was more interested in understanding the magnitude of the comments - which may have passed considering the NGO document we just completed. But still what to get him these links.

Thank you!!

Ali

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

From: Briard, Monique [Monique.Briard@icf.com]
Sent: 8/17/2020 9:00:56 AM
To: Williams, Nicole [Nicole.Williams@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Fisher, Linda [Linda.Fisher@hdrinc.com]
Subject: RE: Sites - Work Group Planning Meeting
Attachments: 20200617_Ad Hoc Env Planning and Permitting Work Group-Draft_Clean_mjb.docx

One edit made to #5. Thanks, Monique

From: Williams, Nicole <Nicole.Williams@icf.com>
Sent: Sunday, August 16, 2020 2:46 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Briard, Monique <Monique.Briard@icf.com>
Subject: RE: Sites - Work Group Planning Meeting

Hello – Objectives/Alternatives Description sections looked fine. Thank you for the opportunity to review. You may want to consider further reducing the text under operational modeling baseline, as I imagine you have notes from other ad hoc meetings about this topic and less text means fewer opportunities for potential inconsistencies.

Cheers, Nicole

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

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Saturday, August 15, 2020 11:32 AM
To: Fisher, Linda <Linda.Fisher@hdrinc.com>; Williams, Nicole <Nicole.Williams@icf.com>; Briard, Monique <Monique.Briard@icf.com>
Subject: RE: Sites - Work Group Planning Meeting

Linda, super sorry for the long delay on these. Attached is a tracking file and a clean file. I tried to delete more of the text that was summarizing the slides. I think we can have like a one sentence intro and then focus more on the work group comments and questions.

Nicole and Monique, would love for you two to take a super quick look before we send this out. Could you review by noon on Monday? If not, no big deal, I think it's pretty good, just always appreciate your thoughts also. Please make any changes in the clean file so we can spot them quickly and finalize.

Ali

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

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Draft_0003358

From: Fisher, Linda <Linda.Fisher@hdrinc.com>
Sent: Wednesday, August 12, 2020 5:50 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites - Work Group Planning Meeting
Importance: High

Hi Ali,

Following back up with you on the June Ad Hoc EPP Work Group meeting minutes to see if you have any additional comments. Also I got the work group agenda guidance from Erin and I will make revisions to the draft agenda on SharePoint accordingly. Please let me know if you would like to review the draft agenda after I make edits and before I send it to Heather and Thad for review.

Thanks, Linda

Linda Fisher, M.S.
D 916.817.4962 M 530.400.3212

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From: Fisher, Linda
Sent: Monday, August 10, 2020 10:35 PM
To: 'Alicia Forsythe' <aforsythe@sitesproject.org>
Subject: RE: Sites - Work Group Planning Meeting

Hi Ali,

I wanted to follow back up with you on the June Ad Hoc EPP Work Group meeting minutes and see if you have any comments/revisions. If not, I can finalize the minutes and send them out once we have the August agenda finalized. Speaking of the agenda, you had mentioned (and I just remembered) that Jerry had suggested some format changes to the work group agendas and you would share the operations work group agenda so I could make consistent changes to the EPP work group agenda. Can you please forward the ops agenda when you get a chance. I would like to send the EPP work group agenda to Heather and Thad for review before next Wednesday.

Thank you, Linda

Linda Fisher, M.S.
D 916.817.4962 M 530.400.3212

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From: Fisher, Linda
Sent: Wednesday, July 22, 2020 1:22 PM
To: 'Alicia Forsythe' <aforsythe@sitesproject.org>
Subject: RE: Sites - Work Group Planning Meeting

Yes, thanks for the prompting, I was going to circle back with you all on my previous email (7/9) regarding sending out a doodle poll to the Ad Hoc Environmental Planning and Permitting Work Group for the next meeting. I am not available on Tuesday 7/28 but I am available after 2:30pm on Wednesday 7/29 and from 10-12 and 1-2pm on Thursday 7/30. I can offer those times to John, Laurie, Jelica, Nicole, and Monique.

When do you think we might want to have the August Work Group meeting? Also please let me know if you have any additional comments on the June meeting minutes, I have reattached them here.

Thank you, Linda

Linda Fisher, M.S.
D 916.817.4962 M 530.400.3212

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From: Alicia Forsythe [<mailto:aforsythe@sitesproject.org>]
Sent: Wednesday, July 22, 2020 8:59 AM
To: Fisher, Linda <Linda.Fisher@hdrinc.com>
Subject: Sites - Work Group Planning Meeting

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Hi Linda – Can you schedule a work group planning meeting for next week sometime? I'd like to have Monique and Nicole included along with our normal team.

I am open all day Tuesday (7/28), Wednesday from 10:30 to 1 PM or after 2:30 PM; and Thursday from 10 am to 2 pm.

Thank you and I 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: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/17/2020 10:07:11 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Luu, Henry [Henry.Luu@hdrinc.com]; Rude, Pete/RDD [Pete.Rude@jacobs.com]; Herrin, Jeff (jeff.herrin@aecom.com) [jeff.herrin@aecom.com]; Forrest, Michael [michael.forrest@aecom.com]
CC: Berryman, Ellen (Ellen.Berryman@icf.com) [Ellen.Berryman@icf.com]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]
Subject: Funks Creek Frog Mitigation

Good Morning,

Several weeks ago I was asked to provide a breakout of potential cost to mitigate for permanent dewatering of Funks Creek to compare against the cost of engineering and operating a by-pass flow as avoidance/mitigation. Based on current drawings dewatering Funks' Creek would impact 19 acers of aquatic habitat between the dam and Funks Reservoir, and if we assume that the creek is occupied habitat for CA red-legged frog, 123 acers of suitable upland habitat impacts. Using a range of current mitigation bank costs we have been able to come up with the following estimate:

Mitigation Category	Credit Cost per Acre	Aquatic Acres	Mitigation Ratio	Cost	Notes
Frog Mitigation Credit Purchase	\$34,000	19	3	\$1,938,000	Assumes bank aquatic credits includes upland credit as well. This would require no O&M as it is a bank credit that includes that in the purchase price
State/Federal Waters Mitigation	\$135,000	19	3	\$7,695,000	Current range is \$120k - \$150k per acer/credit and would require no additional O&M
			Total	\$9,633,000	No water cost or O&M included

Please note, that the state and federal waters mitigation would be needed regardless of the presence/absence of the frog as these would likely be considered permanent impacts to Waters of the US and/or Waters of the State. Our goal would be to put together a package of enhancements that would lower the 3:1 ratio, but for this exercise we assumed that was a safe ratio to use.

Please let me know if you have any questions.

John Spranza, MS, CCN
 Senior Ecologist / Regulatory Specialist

HDR
 2379 Gateway Oaks Drive, Suite 200
 Sacramento, CA 95833
 D 916.679.8858 M 916.640.2487
john.spranza@hdrinc.com

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

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Memorandum

To:	Sites Authority
From:	Jim Lecky, Technical Director
Date:	August 7, 2020
Re:	California Fish and Game Code 5937 and Funks and Stone Corral Creeks

Key Points

1. In their comments on the Sites Project Authority (Sites Authority) and U.S. Bureau of Reclamation (USBR) 2017 Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/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 cubic feet per second (cfs) base flow for maintaining fish below Sites Dam and Golden Gate Dam in good condition.
2. These dams will be impassable and retain flows from Stone Corral and Funks Creeks. A base flow of 10 cfs will not mimic variability in flows or the geomorphic processes that currently maintain the ecological function of these creeks.
3. Section 5937 of the 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. Based on CDFW surveys conducted in these streams there are 10 species of fish that are likely present in Stone Corral and Funks Creeks. None are listed as threatened or endangered or are considered species of special concern, but these fish are subject to Section 5937. The list of fish should be confirmed with CDFW.
4. A recommendation is presented below that may be adequate to maintain the 10 species likely to be present in these creeks and the habitat that supports them. This recommendation is intended to stimulate discussion among the Sites Authority, its engineering staff, and its environmental review team to investigate the economic and technological feasibility of a mechanism for addressing the CDFW and SWRCB comments regarding flow in Stone Corral and Funks Creeks.

Commented [SJ1]: Let's include the recommendation up here as well.

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Background

The two major dams of the Sites Reservoir Project, Sites Dam and Golden Gate Dam, will impound Stone Corral and Funks Creeks, respectively. In addition to California Fish and Game Code 5937, water rights have been appropriated on these streams to the Glenn-Colusa Irrigation District (GCID) and other water users. CDFW and the SWRCB commented on how these issues were addressed in the Draft EIR/EIS.

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 fisheries 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 Funks and Stone Corral Creeks would be managed:

- Are base flows to be provided year-round or only from October to May?
- Would base flows be limited to 10 cfs or would the dams be operated to match pre-project flows (other than flood flows)?

The SWRCB also commented that the impacts of dam operations on fluvial geomorphologic process below the dams should be analyzed.

Environmental Setting 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 prisms¹. 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 resulting from cattle use (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

¹ Characterization of stream channels is based on desktop review of streams using Google Earth.

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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 GCID canal siphon. Although most of the water in the canal passes under Stone Corral Creek in the siphon, GCID can make releases 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 under Funks Creek in a siphon, GCID can make releases 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.

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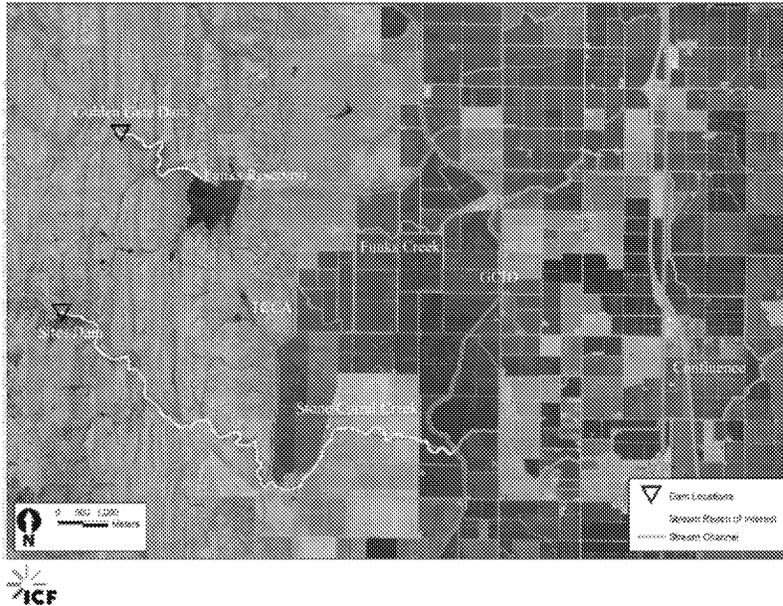


Figure 1. Stone Corral and Funks Creeks

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 a desk top survey of Google Earth photos, nutrient loading from the cattle grazing lands and agricultural fields is a likely cause in both watersheds. During fish surveys in 1998 and 1999, CDFW noted the water quality was poor and high in dissolved minerals. The total dissolved solids in the water were so high that it precluded electrofishing as a means of sampling (CDFG 2003).

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).

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The U.S. Geological Survey (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).

Given the comparable size 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, including likely 100-year discharge flows. The daily mean hydrology (Table 1) was presented in the Draft EIR/EIS and is included below. 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 (Table 2), of which three are considered game fish.

Draft Memo – predecisional not for release**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

Sacramento hitch (hitch) was the most common species sampled during these studies. Hitch were found in all the creeks in the Sites and Colusa Project area. Hitch were also present in the greatest numbers. Stone Corral Creek had the greatest diversity of fish throughout the year. 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.

The investigators did observe one adult Chinook salmon (later confirmed to be a spring-run Chinook salmon) in Antelope Creek. Antelope Creek is a tributary to Stone Corral Creek 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. Thus, CDFW did not include Chinook salmon as a species present in the Stone Corral or Funks Creeks (CDFG 2003). In addition, the only access to Funks and Stone Corral Creeks from the Sacramento River is through the CBD and the 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, in which a combination of warm temperatures, poor water quality, limited habitat, and a lack of access upstream for return to the Sacramento River leaves them stranded where they perish without spawning (ICF 2016).

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 National Marine Fisheries Service 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).

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Effects of Sites Reservoir Project on Stone Corral and Funks Creeks

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 and Golden Gate dams will be built across Stone Corral and Funks Creeks 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 there is a potential for stranding of fish below the dams as winter flows diminish. The Draft EIR/EIS was unclear as to whether the proposed base flow was to be provided year-round or only from October through May. Regardless, fish would continue to be able to move downstream to wetted habitat given GCID's use of the stream channels for conveyance. However, it remains uncertain whether the measures proposed in the 2017 Draft EIR/EIS for flow below the dams is sufficient to comply with the Sites Authority's obligation under California Fish and Game Code 5937.

The U.S. Fish and Wildlife Service has suggested that California red-legged frog (*Rana draytonii*) habitat may exist in the Funks Creek reach between the Golden Gate Dam location and the upper end of Funks Reservoir (USFWS 2020). Conservation of wetland habitats in that reach and flow needed to maintain them warrants further consideration during development of base flows to ensure habitat is protected for this endangered species.

The 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). However, additional consideration should be given to whether and how those flows will be released and what level of variability in base flows will satisfy California Fish and Game Code 5937 goals consistent with the goals and objectives of the Sites Reservoir Project.

The Sites Project Authority's decision to revise and recirculate its environmental document for the Sites Reservoir Project² presents an opportunity to revisit California Fish and Game Code 5937 and

² Sites Authority press release April 22, 2020. <https://sitesproject.org/wp-content/uploads/2020/04/Sites-News-Release-EIR-Recirculation-Announcement-FINAL-2020-04-22.pdf>

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determine whether a refined proposal for facilities and procedures would be appropriate for maintaining fish in good condition below Sites and Golden Gate Dams.

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 CDFW studies.

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 or Golden Gate Dams 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 needed to develop values for sustaining fishery resources. Their presumptive standard is based on characterizing unimpaired flow and protecting a portion 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). 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 (Figure 1). While these reaches have been modified by cattle grazing and minor diversions for domestic use and stock watering, they still experience their natural hydrograph and fluvial geomorphic processes. As such, the Richter et al. (2011) approach may be a reasonable starting point for addressing California Fish and Game Code 5937. 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.

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Table 3 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 10 to 80 cfs to the reaches of interest in Stone Corral and Funks Creeks, which should be protective of the ecosystem function of Stone Corral and Funks Creeks. Part of their consideration should be installation of one or more stream gages above Sites Reservoir to provide information for determining the appropriate timing and duration of variable flows representative of the historical hydrograph. The environmental team should work with the engineering team to develop an adaptive management scheme for assessing the appropriate level of base flow (e.g., 10 cfs) during the summer months that were historically dry. This element of a perennial flow regime will likely be important in maintaining habitat functions lost due to blockage of the streams.

Finally, 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 of 10 to 80 cfs may be enough to maintain the geomorphic processes that support the fish assemblage and other aquatic species below the dams. However, this should be identified as an issue in a monitoring and adaptive management plan and 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 (perhaps flows of several hundred cfs). The need for and magnitude of flows necessary for maintenance of geomorphic processes should also be subject to monitoring and adaptive management.

Table 3. 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

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Day of the Month	Discharge, Cubic Feet per Second											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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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From: Luu, Henry [Henry.Luu@hdrinc.com]
Sent: 8/17/2020 12:31:07 PM
To: Luu, Henry [Henry.Luu@hdrinc.com]; Kevin Spesert [kspesert@sitesproject.org]; Derek Morley [dmorley@geosyntec.com]; Rude, Pete/RDD [Pete.Rude@jacobs.com]; Alexander, Jeriann [jalexander@fugro.com]; Brian Martinez [bmartinez@geosyntec.com]; Smith, Jeff/SAC [Jeff.Smith1@jacobs.com]

Subject: Review TRR Alternatives Analysis
Attachments: INT-TEM-TM-Alternatives to TRR-20200812_r5.pdf
Location: Webex

Start: 8/20/2020 4:00:00 PM
End: 8/20/2020 5:00:00 PM
Show Time As: Busy

Recurrence: (none)

Hi Kevin,

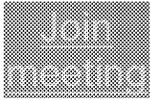
The engineering team would like to review the attached TRR alternatives analysis, similar to our previous coordination, to ensure we have addressed concerns prior to engaging others on this topic.

Thanks

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Alternatives to the Terminal Regulating Reservoir (TRR)

DRAFT Technical Memorandum



DRAFT – PREDECISIONAL WORKING DOCUMENT – FOR DISCUSSION PURPOSES ONLY

To: Pete Rude, PE, Jacobs
Jeff Smith, PE, Jacobs

CC: Henry Luu, PE, HDR

Date: August 11, 2020

From: Brian Martinez, PhD, PE

Quality Review by: Derek Morley, PE

Authority Agent Review by: Reviewer

Subject: Alternatives to the Terminal Regulating Reservoir (TRR)

Executive Summary

The purpose of this technical memorandum is to: discuss implications of geotechnical exploration findings for TRR; present preliminary reservoir locations and configurations that may be suitable alternatives to the currently planned TRR; and discuss initial evaluations of advantages and disadvantages of the alternative reservoir locations and configurations relative to TRR.

Three alternative locations and configurations have been identified, situated between the GCID Canal and TC Canal, to the northwest of the TRR site. The three alternatives, shown in Figures 2 through 4, are referred to as BCM-1, BCM-2, and BCM-3. The results of initial engineering evaluation of these alternatives relative to TRR is discussed herein.

Initial engineering evaluation indicates that each of the BCM alternatives is better than the currently planned TRR with respect to real estate impacts, optimization potential (i.e., potential to optimize the configuration), resilience to changes, and DSOD jurisdiction. Construction costs have not been estimated yet for each of the BCM alternatives. For each BCM alternative, earthwork costs are significantly higher than for TRR; however, each BCM alternative eliminates the expensive ground improvement costs needed for TRR, as well as reducing other costs associated with the TRR (e.g., shorter pipeline lengths than TRR). It is anticipated that construction costs for one or more of the BCM alternatives will be lower or substantially lower than for TRR. Environmental impacts have not been evaluated as part of this initial engineering evaluation.

The evaluations discussed in this TM are preliminary, and there are important topics that are not addressed by this TM. Additional evaluations are necessary to form a basis of decision for either proceeding with the currently planned TRR or selecting an alternative location and configuration.

1.0 Background and Purpose

Sites Reservoir is a 1.5-million-acre-foot reservoir project undergoing feasibility evaluations led by the Sites Joint Powers Authority (Authority). The project will be designed to support California's water infrastructure and includes the main reservoir and conveyance features. Conveyance features will include two pumping/generating plants, two regulating reservoirs, and pipelines, which hydraulically connect the new Sites Reservoir to the existing Funks reservoir, the existing Tehama-Colusa (TC) Canal, the existing Glenn-Colusa Irrigation District (GCID) Canal, and the new Terminal Regulating Reservoir (TRR).

Status: Alternatives to the Terminal Regulating Reservoir (TRR)

Filename: INT-TEM-TM-Alternatives to TRR-20200812_r5.docx

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Phase: 2 Revision:

Date: August 12, 2020

Page: 1 of 14

The TRR is currently planned to be located on the east side of the GCID Canal roughly due east of Funks Reservoir within a flatland area currently used for agriculture. Figure 1 provides a map showing the location of TRR relative to the GCID Canal, and the TC Canal. In 2019, geotechnical explorations were performed in two locations around the TRR, adding to historical borings from 1975, to inform the feasibility of design and construction of the TRR. No other subsurface exploration data relevant to the TRR is known to exist at this time.

The purpose of this technical memorandum is to: provide interpretation of the recent and historic borings; discuss the implications of those findings for TRR; present preliminary reservoir locations and configurations that may be suitable alternatives to the currently planned TRR; and discuss initial evaluations of advantages and disadvantages of the alternative reservoir locations and configurations relative to TRR. This TM is not intended to be used as a basis-of-decision document for selecting a preferred reservoir location and configuration. The evaluations discussed in this TM are preliminary, and there are important topics that are not even preliminarily evaluated at this time or addressed by this TM (e.g., environmental impacts). Additional evaluations are necessary to form a basis of decision for either proceeding with the currently planned TRR or selecting an alternative location and configuration.

2.0 Summary of Geotechnical Data

The soils underlying the TRR are predominantly soft clay with thick layers of loose sand. This characterization is based on the four soil borings surrounding the facility. Attachment A provides the data relied upon for this evaluation, including draft locations and recorded logs of borings performed as part of (i) recently collected data by the United States Bureau of Reclamation (USBR) from 2019 feasibility-level explorations; and (ii) excerpt drawings from a historic plan set (1975) for structural improvement of the Funks Siphon and Check at the GCID Canal near the planned TRR with plan and log of test borings for two locations on the west side of the canal.

The boring identified as Delevan Pipeline 1 (DH-19-DP1-A) is located on the northeast corner of the planned TRR in the flatlands of an adjacent agriculture area, approximately 2000 ft northeast from the nearest point of the GCID Canal. The boring was situated on the shoulder of McDermott Road. The boring log indicates that groundwater was encountered at a depth of approximately 6 feet (approximately 3 feet below the top of native soils), and the following general stratigraphic layering was observed from top to bottom:

- ~3 feet of silty fill;
- ~12 feet of soft to very soft, lean to fat clays with a very loose 3-ft silty sand layer;
- ~11 feet of loose to very loose poorly graded sands with low fines content (<15%);
- ~11 feet of soft to very soft lean clay to elastic silt;
- ~9 feet of loose to medium dense silty sands with higher fines content (>15%) and trace gravel;
- ~12 feet of medium stiff lean clays with sand and sandy clays; and
- ~42 feet of stiff to very stiff lean clays with trace sands and gravels intermixed.

The boring identified as TRR-PGP (DH-19-TRRPGP-A) is located near the northwest corner of the planned TRR on the northeast embankment of the GCID Canal. The boring log indicates that groundwater was encountered at a depth of approximately 12 feet (approximately 5 feet below the top of native soils), and the following general stratigraphic layering was observed from top to bottom:

- ~7 feet of canal embankment fill, consisting mostly of very soft to soft sandy lean clay;
- ~10 feet of a mixture of soft to medium stiff lean clays and silts with thin layers of silty sand;
- ~4 feet of loose to medium dense poorly graded sand with silt and low fines content (<15%);
- ~26 feet of stiff lean clays with trace gravels and sands; and
- ~52 feet of stiff to very stiff lean clays with a few 1-3 ft seams of dense silty or clayey sands.

In addition to the two recent borings, there are logs of test borings available from the plan set for a structural improvement to the Funks Siphon and Check located near the southern tip of the planned TRR. These borings are shown as B-1 and B-2 on the General Plan for the Funks Slough Siphon in Attachment A. The boring log of B-1 extends to a depth of approximately 34 feet and indicates that groundwater was encountered at a depth of

approximately 9 feet, with stiff silty clay above the water table, underlain by ~15 feet of soft to very soft silty clays, underlain by stiff clay with sand layers. The boring log of B-2 extends to a depth of approximately 40 feet and indicates a groundwater depth of approximately 9 feet, with stiff silty clay above the water table, underlain by ~10 feet of soft to very soft silty clay, underlain by ~7 feet of stiff clay with sand layers, underlain by ~11 feet of loose poorly graded sand, underlain by stiff sandy clay and clayey sand.

3.0 Implications of Findings

The subsurface conditions encountered in the borings indicate the presence of adverse foundation conditions for the TRR. The soils present that are of greatest concern (from a geotechnical design standpoint) are the soft clays and the loose poorly graded sands below the water table.

The soft clays are compressible and prone to substantial settlement under the weight of the new embankment. These settlements would impact the TRR embankment, other TRR hydraulics infrastructure, the existing GCID Canal embankment, and other new and existing infrastructure adjacent to the TRR. These settlements may occur non-uniformly across the site given the various thickness of clay deposits encountered.

The loose sands are prone to liquefaction, considering the anticipated seismic hazard of the area¹, the shallow depth to groundwater, and the relatively shallow depth of the sand layers. The consequences of liquefaction of these layers during an earthquake may include seismically-induced settlements and differential settlements of overlying embankments and other TRR hydraulics infrastructure. Additionally, liquefaction of these layers may cause embankment instability and lateral deformations of the embankments, including embankment instability and lateral deformations adjacent to and toward the GCID Canal.

Note that the adverse soils conditions were observed in all four borings – situated near all three corners of the TRR – including either soft clay, loose sands, or both in each boring. The depths of layers varied from boring to boring, including between the two borings situated relatively close to each other at the southern end of the TRR site. At both the southern end of the site (close to Funks Creek) and northern end of the site (distant from Funks Creek), adverse soil conditions were encountered to depths of about 40 feet. Considering these observations, and that the entire TRR site is located within the same geologic context, it is likely that adverse soil conditions are present underneath most (if not all) of the length of the TRR perimeter. The adverse conditions have been observed down to about 40 feet deep in 2 of 3 locations explored along the TRR perimeter, including liquefiable sands at this depth. Commonly, liquefaction is considered of concern for liquefaction-prone soils down to a depth of 50 feet. Given the variation in depth of liquefiable sands encountered in borings recorded to date, the observation of such sands as deep as about 40 feet, and that there is not a geologic constraint limiting such sands to this depth, it is reasonable to expect that liquefiable sands also exist at depths between 40 and 50 feet at various locations at the site.

These adverse soil conditions – both the soft clays and loose sands – will need to be mitigated in order to develop the TRR at this site. Given the mixed nature of the soils, the most likely viable method of ground improvement is cement deep soil mixing (CDSM). For feasibility-level planning, it is prudent to estimate that the entire depth of adverse soil conditions will need to be mitigated, under the width of the footprint of the embankment and widened embankment/infrastructure areas. However, ground improvement using CDSM may be performed in a way that doesn't modify 100% of the foundation area - a tight grid pattern of treatment can be performed to mitigate the soils while limiting the amount of materials/work needed to accomplish the mitigation (this is referred to as the replacement ratio). Based on the need to improve the entire perimeter of TRR (approximately 2.2 miles) to approximately 50 feet below surface over the footprint (varies 50-120 feet wide) of the embankment, with a replacement ratio of approximately 30-40%, **an initial rough estimate for ground improvement is in the range of \$150M** (-50% to +100%) considering local unit costs². The overall cost could be optimized with appropriate geologic and geomorphic mapping in conjunction with design-level exploration, but the optimized cost is likely to

¹ DWR DOE. 2003a. Sites Reservoir Engineering Feasibility Study – Golden Gate, Sites, and Saddle Dams. February.

² Unit cost of CDSM in West Coast U.S. can range from \$100 - \$200 per cubic yard.

fall within this range. This accounts for only the ground improvement and would be an additional cost beyond already-planned costs for grading to construct the TRR or any of the various facilities and improvements. This cost also does not account for ground improvement staging as required or appropriate disposal/handling of spoils generated during CDSM (up to 20% of volume treated).

This need for ground improvement at TRR represents a significant cost and introduces additional risk to the project cost and schedule. Also, it seems unlikely that additional subsurface exploration will result in a finding that ground improvement is not needed at the TRR site (i.e., additional exploration will refine the estimate of ground improvement cost, but not preclude the need for ground improvement).

4.0 Alternative Locations for a Reservoir

An alternative to incurring this significant additional cost may be to relocate this reservoir to a location that does not necessitate ground improvement in order to develop the site. Three preliminary alternative locations for the reservoir have been identified to avoid the adverse soil conditions found at the TRR site. These alternative locations are in the topographically higher area between the GCID Canal and TC Canal, to the northwest of the TRR site, and were sized to provide the same storage capacity within the same water surface elevation operational range required for the GCID Canal as TRR. Figures 2 through 4 show the layout of these alternatives, where there is anticipated to be more advantageous geology/soil conditions (i.e., avoiding the flatland basin deposits, which include the soft clays and loose sands). Two historic borings (B-1 and B-2) on the southern edge of this region near the proposed TRR pipeline (see excerpt boring logs in Attachment A) were performed in 2001 by the Department of Water Resources (DWR). These borings indicate much more favorable soils for reservoir construction, including medium stiff to stiff lean clays with some silts and sands intermixed. These stiff soils likely comprise the majority of the topographic high between the two canals, but should be confirmed with geologic/geomorphic mapping, followed by further subsurface explorations.

To avoid confusion with TRR, we have chosen to use a distinctly different name for a potential reservoir in this area. Considering the location of the reservoir, we have developed a working title as the Between-Canals Management Reservoir, or BCM. The three preliminary alternative locations for this reservoir are referred to as BCM-1, BCM-2, and BCM-3 and are shown on Figures 2 through 4.

As indicated above, the three alternative locations were selected such that they do not necessitate ground improvement in order to develop the site. Additionally, the three alternative locations were selected in consideration of some additional factors. Principal among the additional factors considered was real estate. The three alternative locations were selected to reduce the impacts to orchards. Additionally, the three alternative locations were selected in a manner such that each affect property owners differently from TRR and differently from each other. For example, TRR impacts irrigated and orchard property (permanent take and additional temporary construction easements). The BCM-1 location and configuration also impact orchard property, but much less than TRR does, as the reservoir itself is located on rangeland; BCM-2 and BCM-3 also were located/configured such that the reservoir is on rangeland, and their impacts to orchard property affect a different property than does TRR and BCM-1.

Each of the three BCM alternatives was configured to be roughly equivalent to the currently planned TRR in terms of storage capacity and meet the same design criteria as TRR. The current, feasibility-level configuration of TRR allows for approximately 600 acre-feet of storage between elevations 119.0 and 124.0, corresponding to approximately 120 acres of plan-view footprint of the reservoir pool in this elevation range. Additional plan-view footprint is required for the impounding embankments, pumping/generating plant (PGP), service area platforms, etc., for a total of approximately 130 acres of plan-view footprint for the TRR. The BCM alternatives were configured to have roughly the same plan-view footprint as TRR (with some differences to accommodate alternative-specific configuration needs). Also, the current configuration of TRR includes approximately 12 acres (of the 130 acres) immediately adjacent to the GCID Canal for routing and controlling flows in and out of the reservoir and bypassing the reservoir through a re-constructed bypass canal (i.e., inlet/outlet/bypass infrastructure). Each of the BCM alternatives has been configured to include a similarly sized inlet/outlet/bypass

infrastructure area immediately adjacent to the GCID Canal. For each of the BCM alternatives, the inlet/outlet/bypass infrastructure is connected to the BCM reservoir via a canal.

5.0 Initial Engineering Evaluation of Alternatives

Selection of a preferred alternative (i.e., either continuing with TRR or selecting one of the BCM alternatives) will involve a range of criteria and considerations. For the current TM, the BCM alternatives were developed and compared based on engineering judgment of the conveyance systems functionality and in consideration of information from discussions with the original TRR designers, GCID operations personnel, TC Canal operations personnel, real estate evaluators, and the Sites JPA. Key criteria identified based on these discussions include:

- Real estate impacts
- Construction cost
- Optimization potential
- Resilience to changes
- Environmental impacts
- DSOD jurisdiction

Real Estate Impacts

For this TM, real estate impacts were evaluated principally in terms of property ownership and land use. Land use evaluation focused on permanent take of orchards and on temporary construction easement (TCE) through orchards. Based on conversations with the Sites JPA and real estate evaluators, a primary concern for placement of these alternatives is to avoid or minimize impact to any private orchards, as well as to irrigated lands, particularly on the borders of the GCID Canal in the vicinity of the current TRR. Similarly, the alternatives were compared regarding impacts to orchards where a TCE would likely be needed to install pipelines, improve channels, stage equipment and materials, etc. These lands would be returned to the owners affected after construction, but the orchards within these TCE areas would be removed during construction.

Construction Cost

Construction cost of each BCM alternative is different from TRR for the reservoir itself, for the pipelines (and power lines) from the reservoir to Sites Reservoir, and for site access and stockpiling/staging during construction.

The largest differences in construction cost for the reservoir itself are due to the differing geotechnical and topographic conditions of the TRR in contrast to those at the BCM alternatives. The BCM alternatives were placed principally to avoid likely adverse soil conditions as found near the TRR, thus eliminating for the BCM alternatives the expensive ground modification costs that are needed for TRR. Conversely, due to the higher topographic conditions at the location of each BCM alternative, each of the BCM alternatives would necessitate significantly more earthwork (predominantly excavation) than is needed for TRR in order to create the reservoir. Rough excavation volumes were estimated based on the area of each layout, the topography available, and the target elevations for the reservoir, but design and analyses were not performed to develop cost-estimate-basis earthwork volumes. Additionally, shallow groundwater elevations near the surface in the vicinity of the TRR will likely require dewatering during construction; the BCM alternatives were sited in locations with potentially lower groundwater levels due to the geology and likelihood of higher runoff toward the valley.

For associated pipeline (and powerline) costs, two of the BCM alternatives (BCM-1 and BCM-3) have significantly shorter lengths of pipelines than TRR. The BCM-2 alternative has pipeline lengths similar to those for TRR, but no tunneling needs to be performed, as opposed to the TRR alternative.

Site access for construction equipment, materials delivery, and construction personnel was considered for each alternative based on discussions with the project team and potential access locations through public and accessible private roads. The BCM alternatives each have more limited or challenging site access than does TRR for construction of the reservoir itself. Conversely, for construction of the pipelines and power lines, each BCM alternative is likely to have similar or better site access than does TRR. The BCM alternatives have better

access to stockpiling and staging areas than does TRR; however, the BCM alternatives may require more area for stockpiling and staging than does TRR.

Comparing the BCM alternatives to TRR, there are numerous features associated with the construction that drive construction costs either up or down for each alternative relative to the others. Some of the key features have been identified in this engineering evaluation, but actual construction costs have not been estimated for this TM.

Optimization Potential

Whichever alternative is selected, the configuration and design will be optimized as the project progresses from feasibility to design and throughout the design process. Some optimization ideas have already been speculated by the project team. Each alternative, however, is likely to benefit more or less from optimization due to its configuration and constraints. For example, for each of the BCM alternatives, the opportunity exists to optimize a tradeoff between length of pipelines vs volume of excavation for open reservoir/channel leading to the PGP. This optimization is not available for TRR, since it is situated on the east side of the GCID Canal and the pipeline must begin at this location. Another optimization effort that is likely is the potential to decrease the size of the reservoir (decreased storage capacity requirement). Certain alternatives will have a greater rate-of-change (i.e., rate of decrease in construction costs) than others in response to this optimization, due to differences in configuration and constraints (e.g., alternatives situated in steeper topography will have greater decreases in cost than those in flatter topography).

Resilience to Changes

One of the most critical aspects of feasibility-level layouts, locations, and configurations is the ability of these to accommodate changes that arise. At the feasibility level, many uncertainties and project risks exist. As some of these uncertainties become clarified and some of these project risks are realized, resilient project configurations can accommodate the changes with relatively minor impacts, whereas less resilient project configurations may be severely impacted or need to be abandoned altogether. For example, it is unknown at this time whether certain property owners ultimately will be willing to allow permanent take or TCE on their lands. Some alternatives can accommodate a negative outcome to this question, while other alternatives are not viable (i.e., cannot be constructed) if this is the outcome. Another example is environmental constraints, where locations of particular environmental concern are identified, necessitating avoidance to prevent significant impacts and mitigation requirements. Some alternatives can accommodate this constraint, being readily adjusted to avoid the environmental concern, while other alternatives cannot be readily adjusted, and thus would cause significant impacts and mitigation requirements.

Environmental Impacts

Potential environmental impacts are a key consideration for selecting an alternative; however, potential environmental impacts of each alternative were not considered in this initial engineering evaluation and are not addressed in this TM.

DSOD Jurisdiction

Currently, it is understood that the TRR will fall under the jurisdiction of the California Division of Safety of Dams (DSOD), and that DSOD will be heavily involved in the determination of design criteria, the design process, and construction oversight, as well as ongoing jurisdictional oversight of the operation and maintenance of the constructed reservoir. Interest has been expressed in pursuing the possibility of adjusting the reservoir configuration such that it is not DSOD-jurisdictional. Each of the reservoir configurations has a differing level of potential for realizing this objective.

The following subsections present an initial assessment of each alternative from an engineering perspective. For comparison and use as a baseline, the TRR is summarized herein as it relates to the evaluation criteria outlined above. In conjunction with the following subsections, refer to Table 1 (next page) and Figures 1 to 4, which show comparisons of the alternatives versus TRR and each other.

TABLE 1 - COMPARISONS OF BETWEEN-CANAL MANAGEMENT (BCM) ALTERNATIVES

KEY CRITERIA/EXAMPLES	TRR	BCM-1	BCM-2	BCM-3
Real Estate Impacts				
Primary Properties Affected	4 private land holdings	2 private land holdings and USBR	4 private land holdings and USBR	2 private land holdings and USBR
Current Land Use of Planned Reservoir Facility (Predominantly)	Irrigated land	Rangeland	Rangeland	Rangeland
Permanent Orchard Take (±20%)	~22 acres (1 private land holding)	~15 acres (1 private land holding)	~22 acres (1 private land holding)	~22 acres (1 private land holding)
Additional TCE through Orchards (±20%)	~21 acres (1 private land holding)	~0 acres	~0 acres	~0 acres
Construction Cost Impacts				
Geotechnical Conditions	Adverse	Mostly Good	Mostly Good	Mostly Good
Earthwork Volume (±20%)	~¾ MCY	~8 ½ MCY	~7 ½ MCY	~8 ½ MCY
Groundwater Elevation	High	Low	Low	Low
Pipeline Corridor Length (±20%)	~2.7 miles	~1.6 miles	~2.4 miles	~1.6 miles
Required Tunneling (two locations)	Yes	Yes	No	Yes
Degree of Cuts for Pipeline Alignment	Moderate	Moderate	Moderate	High
Ease of Access via Available Roads	High	Low	Moderate	Moderate
Stockpiling and Staging	Limited	Adjacent and Flexible	Adjacent and Flexible	Adjacent and Flexible
Degree of Optimization Potential	Low	High	High	High
Resilience to Changes				
Resilient to Negative Response to Orchard Take near TRR?	No	No	Yes	Yes
Resilient to Negative Response to Orchard Take near Noel Evan Road?	Yes	Yes	No/Maybe	No/Maybe
Resilience to Other Changes (e.g., storage capacity, environmental, etc.)	Moderately	Yes	Yes	Yes
Environmental Impacts	Not Evaluated	Not Evaluated	Not Evaluated	Not Evaluated
Degree of Reconfiguring to Avoid DSOD Jurisdiction	Significant	Minor	None	Minor

5.1 TRR

Real Estate

The TRR is situated on the east side of the GCID Canal roughly due east of Funks Reservoir within a flatland area currently used for agriculture. The plan area including the reservoir, pump generation plant (PGP), inlet/outlet structures, infrastructure gates and channels, pipeline and TCE, etc. resides on at least four private properties, including the private orchards on either side of the GCID Canal. Figure 1 shows the current plan area for TRR with light cyan area showing permanent land take, dark cyan area showing the TCE, and the shaded area showing impact to private property near the GCID Canal. Most of the approximately 130 acres of the reservoir facility occupies irrigated lands. Approximately 22 acres of orchard would be designated for permanent take and an additional 21 acres of orchard for TCE.

Construction Cost

As discussed in previous sections of this TM, the geotechnical conditions at TRR are adverse and mitigation would add significant cost to the project (the current feasibility-level cost estimate for TRR does not include this geotechnical mitigation cost). The TRR site is essentially flat, so the reservoir consists of an earthen embankment around its perimeter and relatively shallow excavation across the interior (with a few areas of somewhat deeper excavation). Earthwork for the TRR is roughly $\frac{3}{4}$ million cubic yards (MCY), a combination of excavation and fill placement. Groundwater elevations in the vicinity of the TRR are shallow (a few feet below ground surface, according to the geotechnical data), which will likely lead to a dewatering requirement for excavations.

The TRR alternative includes approximately 2.7 miles of pipeline corridor (i.e., two parallel pipelines, each 2.7 miles long, as measured to Funks Reservoir). Construction of the current pipeline alignment is expected to require moderate cuts into the high topographic area of interest as the pipeline heads towards Funks, and tunneling for the two pipelines will be required under the TC Canal and through the high relief topography near the connection of the TC Canal and Funks reservoir.

Access to the TRR site should be relatively simple, through public roads; however, stockpiling and staging will be challenging if an adjacent site cannot be identified. An area roughly equal to the size of the TRR is likely needed for stockpiling fill materials for processing and staging (e.g., moisture control of excavated materials prior to placement as embankment fill). Candidate locations include north or east of the proposed TRR, or on the other side of the GCID Canal, along the pipelines TCE or in the topographically higher area to the northwest.

Optimization Potential

It is anticipated that the size of the reservoir may be slightly reduced relative to the current feasibility-level configuration because the required storage capacity may also be able to be reduced. Ability to reduce reservoir footprint area depends in part on the elevation range of storage within the reservoir; full evaluation of required storage elevation range is yet to be performed. If the size of the reservoir can be reduced, there would be a corresponding reduction in earthwork, geotechnical mitigation, and real estate requirements. Due to the location of properties relative to the GCID Canal and pipelines corridor, reduction in reservoir size may not be as beneficial for real estate concerns as might be anticipated. For example, if the reservoir is downsized by moving its northern perimeter southward, less orchard area would be impacted on the east side of the GCID Canal, but more orchard area would be impacted on the west side of the GCID Canal.

The primary constraint to optimization of the TRR is its location to the eastern side of the GCID Canal. Siting of TRR at this location requires that water from TRR must be drawn into the PGP and pumped through pipelines that must pass under the GCID Canal. This location and configuration are essentially fixed; water must be piped from this location all the way to Funks and Sites. Also, due to this constraint, impacts to real estate (both permanent take and TCE) on both sides of the canal cannot be avoided, regardless of reservoir downsizing or other optimization efforts. Another potential constraint to optimization at TRR is the presence of shallow groundwater. This condition hampers ability to excavate deeper for optimization efforts that might otherwise benefit from deeper excavation.

Resilience to Changes

The TRR is not especially resilient to changes that may occur, especially with respect to real estate. The TRR is constrained laterally along its western/southern margin by the GCID Canal, and it is constrained along its eastern margin by McDermott Road and the canal running adjacent to the western side of the road. If a change were to occur that necessitated an increase in footprint, the reservoir would need to be expanded northward, impacting additional property, including more orchard land. The viability of TRR – as currently configured or after optimization, even without any adverse changes that may occur – is strictly dependent on the ability to obtain specific orchard lands for permanent take and TCE. If it turns out that these orchard lands are not able to be obtained, the TRR configuration cannot be constructed.

DSOD Jurisdiction

As currently configured, TRR is DSOD jurisdictional. Considering the operational requirements for TRR and the elevations of the site, it is likely that TRR will remain DSOD jurisdictional.

5.2 BCM-1

Real Estate

BCM-1 is the closest location to the current TRR and pipeline alignment. BCM-1 is situated along the southeastern portion of the topographic high separated from the GCID Canal by private orchard lands. The plan area of BCM-1, similar to that of TRR, resides on at least three properties. Most of the approximately 130 acres of the reservoir facility occupies rangeland. Figure 2 shows the plan for BCM-1, including permanent land take in light blue, TCE in dark blue, and shaded area showing impact to private property near the GCID Canal. As planned, BCM-1 would require approximately 15 acres of permanent take on private property with orchards, primarily for the same infrastructure as TRR (inlet/outlet, gates, channels, etc.) needed to tie-in to the GCID Canal.

Construction Cost

Apart from the area of the inlet/outlet/channel infrastructure, the geotechnical conditions for the BCM-1 alternative avoid the adverse geotechnical conditions found at TRR, based on the assumed geology and the historic geotechnical data previously discussed. BCM-1 would not incur the expensive ground mitigation costs that TRR would incur. However, relative to TRR, BCM-1 involves significantly more earthwork – about 8 ½ MCY, predominantly excavation – as its western margin is controlled by increasing elevation of the topography. This volume of earthwork represents a significant construction cost.

Relative to TRR, BCM-1 shortens the length of pipeline corridor needed to approximately 1.6 miles, since the PGP can be located at the southwestern corner of the reservoir. The pipeline alignment is expected to require moderate cuts into the high topographic area of interest as the pipeline heads towards Funks, and tunneling for the two pipelines will be required under the TC Canal and through the high relief topography near the connection of the TC Canal and Funks reservoir.

There are a few options for access to the BCM-1 site. Since BCM-1 involves permanent take of some private property near the GCID Canal, one option for site access is through this property. A site access option that does not involve private property in this vicinity is access from the north, from Noel Evan road and southward via a TCE across rangeland private property. Another option for site access is from the west, from USBR property and eastward via a TCE across rangeland private property. Stockpiling and staging for BCM-1 would occur (a) within the area of the BCM-1 reservoir footprint, and (b) adjacent to the western margin of the BCM-1 reservoir footprint, on the same property as the reservoir.

Optimization Potential

Similar to TRR, it is anticipated that the size of the BCM-1 reservoir may be able to be reduced somewhat relative to the current feasibility-level configuration, because the required storage capacity may be able to be reduced.

Ability to reduce reservoir footprint area depends in part on the elevation range of storage within the reservoir; full evaluation of required storage elevation range is yet to be performed. If the size of the reservoir can be reduced, there would be a corresponding reduction in earthwork and real estate requirements. Due to the sloping nature of the BCM-1 reservoir site, a reduction in reservoir footprint area would result in significant reduction in earthwork volume (and significant reduction in cost), because the reservoir footprint can be reduced in the areas of deepest excavation (potentially providing greater percentage cost decrease than percentage reservoir footprint decrease).

For BCM-1, the opportunity exists to optimize a tradeoff between length of pipelines vs. volume of excavation for open reservoir/channel leading to the PGP. At the reservoir's southwestern end (where the PGP will be sited), the reservoir can be narrowed to a canal that extends westward, shortening the length of pipelines needed (and power lines). As the reservoir/canal is extended westward, more significant excavation is needed; at some point, it becomes advantageous to terminate the open canal and switch to pipelines. This optimization also might be used to locate the PGP in a most-favorable location or take advantage of other variations in site conditions (e.g., various geologic conditions).

The primary constraint to optimization of BCM-1 is its eastern and southern margins are bounded by orchard lands. This prevents flexibility in configuration of the facility along its eastern and southern sides. Additionally, BCM-1 necessitates modification and permanent use of the canal on private property that extends westward from the GCID Canal. This constraint limits how much this alternative can be optimized with respect to minimizing impact to orchards. Conversely, if the inlet/outlet/canal infrastructure can be optimized to reduce its footprint area, this provides an opportunity to reduce the impact to orchards relative to what is currently shown and relative to TRR.

Resilience to Changes

Relative to TRR, BCM-1 is more resilient to changes that may occur, with some exception. BCM-1, while bounded on its eastern and southern margins by real estate constraints, is not bounded on its western and northern margins by such constraints (or other constraints). There is flexibility to make changes in the configuration to accommodate changes that may arise (e.g., increased capacity need, avoiding certain locations of environmental concern, etc.). The western margins are not optimal for making adjustments, since these areas would involve significant excavation cuts. But changes can be made here without too much impact, and changes along the northern margin would be even more economical.

However, as for TRR, the viability of BCM-1 – as currently configured or after optimization, even without any adverse changes that may occur – is strictly dependent on the ability to obtain specific orchard property for permanent take. If it turns out that these private orchard lands are not able to be obtained, the BCM-1 configuration cannot be constructed.

DSOD Jurisdiction

As currently configured, BCM-1 may or may not be DSOD jurisdictional. The BCM-1 reservoir would be mostly contained within an excavated area, but its southeastern margin would involve an embankment, which might result in BCM-1 being DSOD jurisdictional. It is likely that BCM-1 can be configured to remove it from DSOD jurisdiction.

5.3 BCM-2

Real Estate

BCM-2 is situated along the northern portion of the topographic high, just south of the Pacific Gas & Electric (PG&E) Colusa Substation. Most of the approximately 130 acres of the reservoir facility occupies rangeland. This alternative would reside on at least five properties, including the orchards to the west of the GCID Canal just south of Noel Evan road. Figure 3 shows the plan for BCM-2 including permanent land take in light yellow

and TCE in dark yellow. As planned, BCM-2 would require approximately 22 acres of orchard, intentionally planned to be along the southern and eastern edges of the property to avoid bisection of the property.

Construction Cost

This alternative is situated intentionally within the lowest/flattest area of assumed good geology to avoid the adverse geotechnical conditions of the basin deposits. BCM-2 would not incur the expensive ground mitigation costs that TRR would incur. However, relative to TRR, BCM-2 involves significantly more earthwork – about 7 ½ MCY, predominantly excavation – as its southwestern margin is controlled by increasing elevation of the topography. This volume of earthwork, while about 1 MCY less than BCM-1, still represents a significant construction cost.

Relative to TRR, BCM-2 somewhat shortens the length of pipeline corridor needed, to approximately 2.4 miles. As shown in Figure 3, this length is situated along a different alignment route than the pipelines corridor for TRR and BCM-1. The BCM-2 pipeline alignment runs westward from the BCM-2 reservoir site, extending under the TC Canal (at an embankment section of the canal) and then turns southward to extend to the Funks Reservoir area. This pipeline alignment is expected to require large excavation cuts into the high topographic areas north of Funks but would eliminate the need for tunneling for the pipelines.

Site access is likely achievable from the north via Noel Evan road and accessible private roads extending south from Noel Evan road. Another option for site access is from the west, from USBR property and eastward via a TCE across rangeland private property. Stockpiling and staging for BCM-2 would occur (a) within the area of the BCM-2 reservoir footprint, and (b) adjacent to the western and southern margins of the BCM-2 reservoir footprint, on the same property as the reservoir.

Optimization Potential

As for TRR, it is anticipated that the size of the reservoir may be able to be reduced somewhat relative to the current feasibility-level configuration, because the required storage capacity may be able to be reduced. Ability to reduce reservoir footprint area depends in part on the elevation range of storage within the reservoir; full evaluation of required storage elevation range is yet to be performed. If the size of the reservoir can be reduced, there would be a corresponding reduction in earthwork and real estate requirements. Due to the sloping nature of the BCM-2 reservoir site, a reduction in reservoir footprint area would result in significant reduction in earthwork volume (and significant reduction in cost), because the reservoir footprint can be reduced in the areas of deepest excavation (potentially providing greater percentage cost decrease than percentage reservoir footprint decrease).

As for BCM-1, the opportunity exists at BCM-2 to optimize a tradeoff between length of pipelines vs volume of excavation for open reservoir/channel leading to the PGP. At the reservoir's western end (where the PGP will be sited), the reservoir can be narrowed to a canal that extends westward, shortening the length of pipelines needed. As the reservoir/canal is extended westward, more significant excavation is needed; at some point, it becomes advantageous to terminate the open canal and switch to pipelines. This optimization also might be used to locate the PGP in a most-favorable location or take advantage of other variations in site conditions (e.g., various geologic conditions).

The primary constraint to optimization of BCM-2 is its eastern margin is bounded by orchard lands. This prevents flexibility in configuration of the facility along its eastern side. Additionally, BCM-2 necessitates construction of a canal and inlet/outlet/canal infrastructure that extends westward from the GCID Canal to BCM-2. This constraint limits how much this alternative can be optimized with respect to minimizing impact to orchards. Conversely, if the inlet/outlet/canal infrastructure can be optimized to reduce its footprint area, this provides an opportunity to reduce the impact to orchards relative to what is currently shown and relative to TRR. Additionally, the footprint of this connector canal (i.e., the amount of orchard take) can be reduced substantially if relocated along the northern margin of the property; this configuration would involve constructing a new bridge just south of Noel Evan road to provide access to the orchard, and would need concurrence from the property owner.

Another possible constraint to optimization of BCM-2 is the PG&E tower locations within and adjacent to the footprint of BCM-2. The reservoir would be designed to avoid alteration of these facilities, but their presence may inhibit some optimization of the reservoir configuration.

The pipeline alignment extending from BCM-2 westward and then southward may also provide opportunity for optimization (considering tradeoffs between alignment, earthwork, and pumping demands).

Resilience to Changes

Relative to TRR, BCM-2 is more resilient to changes that may occur, with some exception. BCM-2, while bounded on its eastern margin by real estate constraints, is not bounded on its western, northern, or southern margins by such constraints (with the exception of isolated features such as the PG&E towers). There is flexibility to make changes in the configuration to accommodate changes that may arise (e.g., increased capacity need, avoiding certain locations of environmental concern, etc.). The southwestern margins are not optimal for making adjustments, since these areas would involve more significant excavation cuts. But changes can be made here without too much impact, and changes along the northern margin would be even more economical.

The viability of BCM-2 – as currently configured or after optimization, even without any adverse changes that may occur – is dependent on the ability to obtain orchard lands for permanent take. If it turns out that these orchard lands are not able to be obtained, the BCM-2 configuration cannot be constructed unless another property just north (PG&E and others) or south (irrigated lands) can be obtained.

DSOD Jurisdiction

As currently configured, BCM-2 is unlikely to be DSOD jurisdictional. The BCM-2 reservoir would be contained within an excavated area, separated hydraulically from the GCID Canal and lower areas via gates (as opposed to an embankment).

5.4 BCM-3

Real Estate

BCM-3 is situated in the central portion of the topographic high and provides an alternative location if there is some significant problem with the viability of BCM-1 or BCM-2, such as real estate, environmental, or other constraints not known at this time. Most of the approximately 130 acres of the reservoir facility occupies rangeland. The plan area for this alternative would reside on at least three properties, including the orchards to the west of the GCID Canal just south of Noel Evan road. Figure 4 shows the plan for BCM-3, including permanent land take in light red and TCE in dark red. Similar to BCM-2, BCM-3 would require the same area for inlet/outlet, channels, gates, etc. on the private property south of Noel Evan road (~22 acres).

Construction Cost

BCM-3 is sited in the area of good geology and to work a balance of earthwork and pipeline length and provide connection to the GCID Canal near Noel Evan road. BCM-3 would not incur the expensive ground mitigation costs that TRR would incur. However, relative to TRR, BCM-3 involves significantly more earthwork – about 8 ½ MCY, predominantly excavation – as its western margin is controlled by increasing elevation of the topography. This volume of earthwork, similar to that of BCM-1, represents a significant construction cost.

Relative to TRR, BCM-3 shortens the length of pipeline corridor needed, to approximately 1.6 miles (similar to BCM-1). As for BCM-1, the pipeline alignment is expected to require moderate cuts into the high topographic area of interest as the pipeline heads towards Funks, and tunneling for the two pipelines will be required under the TC Canal and through the high relief topography near the connection of the TC Canal and Funks reservoir.

Site access is likely achievable from the north via Noel Evan road and accessible private roads extending south from Noel Evan road. Another option for site access is from the west, from USBR property and eastward via a TCE across rangeland private property. Stockpiling and staging for BCM-3 would occur (a) within the area of the

BCM-3 reservoir footprint, and (b) adjacent to the western margins of the BCM-3 reservoir footprint, on the same property as the reservoir.

Optimization Potential

As for TRR, it is anticipated that the size of the reservoir may be able to be reduced somewhat relative to the current feasibility-level configuration, because the required storage capacity may be able to be reduced. Ability to reduce reservoir footprint area depends in part on the elevation range of storage within the reservoir; full evaluation of required storage elevation range is yet to be performed. If the size of the reservoir can be reduced, there would be a corresponding reduction in earthwork and real estate requirements. Due to the sloping nature of the BCM-3 reservoir site, a reduction in reservoir footprint area would result in significant reduction in earthwork volume (and significant reduction in cost), because the reservoir footprint can be reduced in the areas of deepest excavation (potentially providing greater percentage cost decrease than percentage reservoir footprint decrease).

As for BCM-1, the opportunity exists at BCM-3 to optimize a tradeoff between length of pipelines vs volume of excavation for open reservoir/channel leading to the PGP. At the reservoir's southwestern end (where the PGP will be sited), the reservoir can be narrowed to a canal that extends westward, shortening the length of pipelines needed. As the reservoir/canal is extended westward, more significant excavation is needed; at some point, it becomes advantageous to terminate the open canal and switch to pipelines. This optimization also might be used to locate the PGP in a most-favorable location or take advantage of other variations in site conditions (e.g., various geologic conditions).

The primary constraint to optimization of BCM-3 is its eastern margin is bounded by orchard lands. This prevents flexibility in configuration of the facility along its eastern side. Additionally, BCM-3 necessitates construction of a canal and inlet/outlet/canal infrastructure that extends westward from the GCID Canal to BCM-3. This constraint limits how much this alternative can be optimized with respect to minimizing impact to orchards. Conversely, if the inlet/outlet/canal infrastructure can be optimized to reduce its footprint area, this provides an opportunity to reduce the impact to orchards relative to what is currently shown and relative to TRR. Additionally, the footprint of this connector canal (i.e., the amount of orchard take) can be reduced substantially if relocated along the northern margin of the property; this configuration would involve constructing a new bridge just south of Noel Evan road to provide access to the orchard, and would need concurrence from the property owner.

Another possible constraint to optimization of BCM-3 is due to its long length. If the reservoir can be downsized substantially (from a hydraulic needs standpoint), there is a limit to how small (total footprint area) BCM-3 can be made because it is so long.

Resilience to Changes

Relative to TRR, BCM-3 is more resilient to changes that may occur, with some exception. BCM-3, while bounded on its eastern margin by real estate constraints, is not bounded on its western margin by such constraints. There is flexibility to make changes in the configuration to accommodate changes that may arise (e.g., increased capacity need, avoiding certain locations of environmental concern, etc.). Portions of the western margins are not optimal for making adjustments, since these areas would involve more significant excavation cuts. But changes can be made here without too much impact, and changes along other portions of the western margin would be even more economical.

The viability of BCM-3 – as currently configured or after optimization, even without any adverse changes that may occur – is dependent on the ability to obtain orchard lands for permanent take. If it turns out that these orchard lands are not able to be obtained, the BCM-3 configuration cannot be constructed unless another property just north (PG&E and others) or south (irrigated lands) can be obtained.

DSOD Jurisdiction

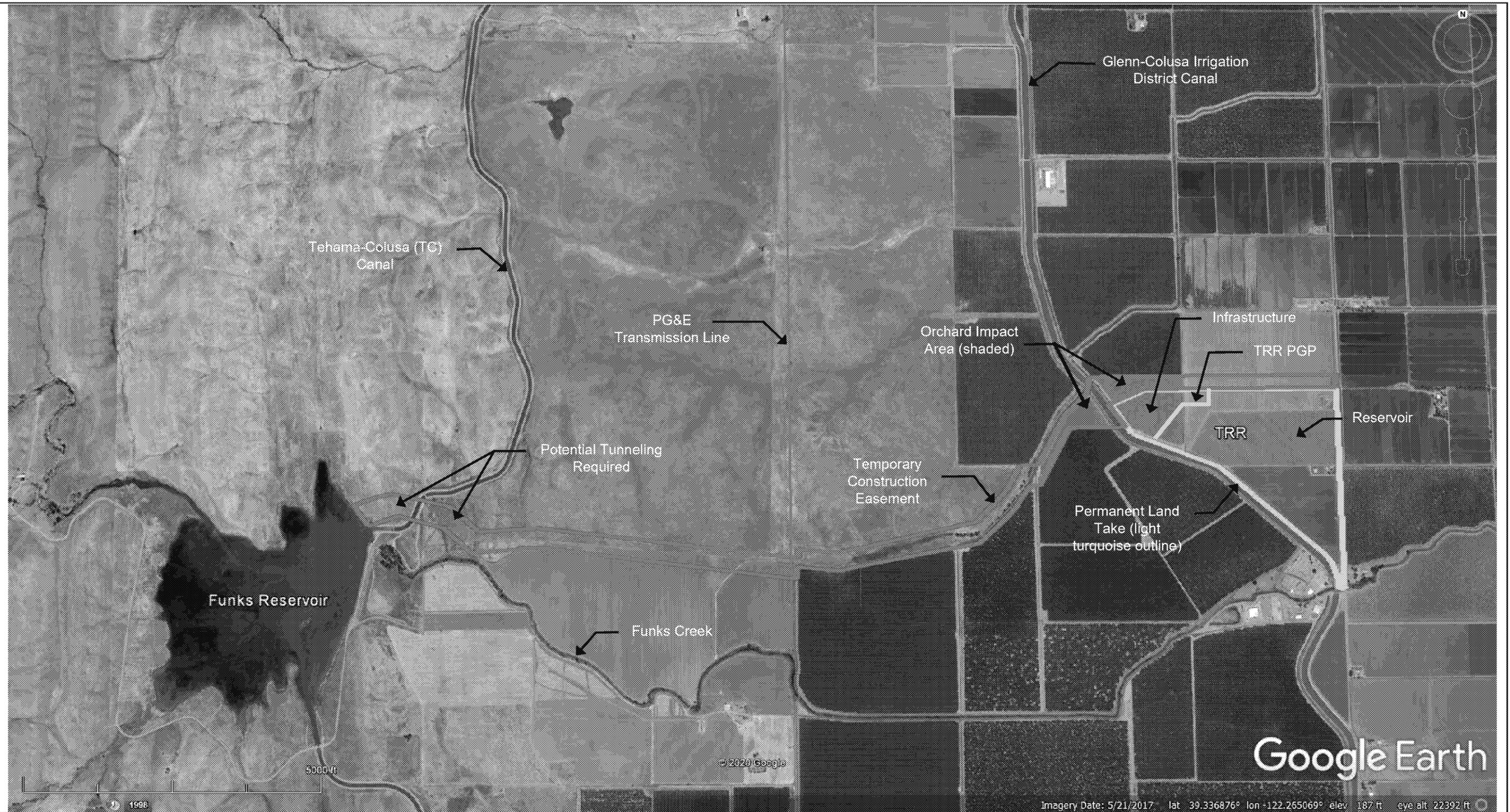
As currently configured, BCM-3 may or may not be DSOD jurisdictional. The BCM-3 reservoir would be mostly contained within an excavated area, but its southeastern margin would involve an embankment, which might result in BCM-3 being DSOD jurisdictional. It is likely that BCM-3 can be configured to remove it from DSOD jurisdiction.

6.0 Other Considerations and Recommendation

One or more of the preliminary alternative locations identified as BCM-1, BCM-2, and BCM-3 may result in significantly lower project cost than the currently planned TRR location. Principally, the expensive ground improvement that is needed at TRR would be avoided. There may also be additional cost savings at some of these locations, associated with pipeline length, real estate, etc.

Additionally, it is likely that one or more of these locations is much more resilient (i.e., less prone to risk) with respect to project changes than the TRR location. The TRR is tightly constrained by real estate requirements; changes to hydraulic design needs could result in significant real estate conflicts. One or more of the BCM alternatives are likely much more flexible in configuration and constraints and could accommodate changes to hydraulic requirements or other changes that might alter the capacity requirements.

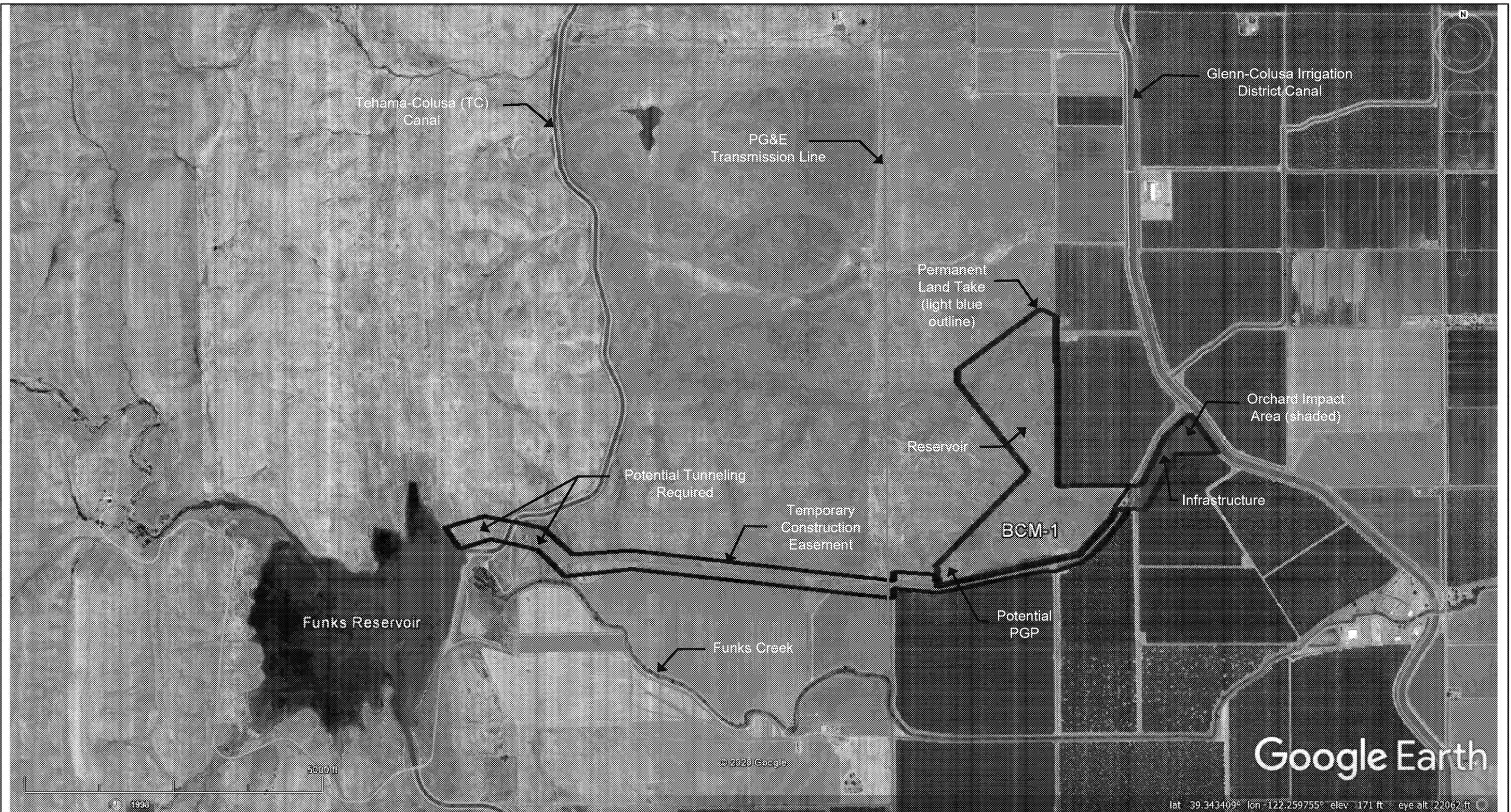
A range of hydraulic considerations and infrastructure interface considerations (especially with the GCID Canal) are controlled in large part by the location and configuration of this reservoir. Additionally, the project environmental footprint is determined in part by the location of this reservoir, as well as the pipeline alignments and other features controlled by the reservoir location. This potential change from TRR to one of the BCM locations is a critical path decision.



- Notes:
1. Linework boundaries approximate and should be interpreted only at the scale shown.
 2. Base Map Source : Google Earth Pro, © 2016

Terminal Regulating Reservoir Footprint	
Sites Reservoir Project Sites, California	
Geosyntec consultants	
Davis, CA	August 2020
Figure 1	

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- Notes:
1. Linework boundaries approximate and should be interpreted only at the scale shown.
 2. Base Map Source : Google Earth Pro, © 2016

Terminal Regulating Reservoir Footprint	
Sites Reservoir Project Sites, California	
Geosyntec consultants	
Davis, CA	August 2020
Figure 2	

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- Notes:
1. Linework boundaries approximate and should be interpreted only at the scale shown.
 2. Base Map Source : Google Earth Pro, © 2016 .

Terminal Regulating Reservoir Footprint	
Sites Reservoir Project Sites, California	
Geosyntec consultants	
Davis, CA	August 2020
Figure 3	

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- Notes:
1. Linework boundaries approximate and should be interpreted only at the scale shown.
 2. Base Map Source : Google Earth Pro, © 2016 .

Terminal Regulating Reservoir Footprint	
Sites Reservoir Project Sites, California	
Geosyntec consultants	
Davis, CA	August 2020
Figure 4	

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ATTACHMENT A
Geotechnical Boring Locations and Logs

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-DP1-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.25 mile north of intersection between McDermott Rd and Lenahan Road. On east shoulder of McDermott Road

START DATE, END DATE: 11/3/2019, 11/14/2019

COORDINATES: N 2,249,169.31 E 6,496,885.06

DATUM: CA State Plane, Zone 2, NAD83

GROUND ELEVATION: 112.2 ft. NAVD88

FIRST ENCOUNTERED WATER DEPTH, DATE: 6.3 ft. (el. 105.9 ft.), 11/3/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.2 ft. (el. 12.0 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: B. Holmes; S. Dalton

REVIEWED BY:

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	FADC % Recovery	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %			Lab Classification	SPT Blows / 0.5 ft.*	SPT Blows / ft.*			SPT % Recovery
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)											
1	112								s(ML)					Fill	0.0 to 2.9 ft. Fill 0.0 to 2.0 ft.: FAPB. Logged auger flight drill cuttings.	
2	111									100					0.0 to 2.9 ft.: SANDY SILT, s(ML): About 70% fines with low plasticity, high to very high dry strength, low toughness, slow dilatancy; about 30% predominantly fine with medium and coarse, hard, angular to subangular sand; maximum size, coarse sand; soft consistency; dry; brown; no reaction with HCl.	
3	110								s(CL)	100	0	0	87	▼	2.9 to 100.2 ft. Quaternary: Basin Deposits, Qb	
4	109	74.5	25.5	0.0	0.0	36	21	13.4							(CL)s	0
5	108								SM	100	0	0	100		7.0 to 10.4 ft.: SILTY SAND, SM: About 60% fine sand; about 40% non-plastic fines with very high dry strength, slow dilatancy; maximum size, fine sand; wet; brown; no reaction with HCl.	
6	107															0
7	106								(CH)s	100	5	7	12	87	12.5 to 14.8 ft.: SANDY LEAN CLAY, s(CL): About 55% fines with medium to high plasticity, high to very high dry strength, medium toughness, no to slow dilatancy; about 45% predominantly fine with medium sand; maximum size, medium sand; soft to firm consistency; moist to wet; brown; grades coarser with depth from 14.0 to 14.8 ft.; no reaction with HCl.	
8	105															0
9	104								s(CL)	100	0	1	4	5	100	21.2 to 25.8 ft.: POORLY GRADED SAND, SP: About 95% predominantly fine to medium with trace coarse, hard, angular to subangular sand; about 5% fines; maximum size, coarse sand; wet; brown; no reaction with HCl.
10	103	94.2	5.8	0.0	0.0	31	14	30.1								CL
11	102								SM	100	0	1	3	10	100	30.2 to 36.8 ft.: SANDY ELASTIC SILT, s(MH): About 65% fines with medium plasticity, very high dry strength, low toughness, no dilatancy; about 35% fine sand; maximum size, fine sand; soft consistency; moist to wet; light brown; sticky; sand is fine to very fine; grades coarser with depth; no reaction with HCl.
12	101															
13	100								s(CL)	100	0	2	4	10	47	41.1 to 45.2 ft.: SILTY SAND WITH GRAVEL, (SM)g: About 40% fine, hard, subrounded gravel; 40% fine to coarse, hard, subangular to subrounded sand; about 20% non-plastic fines; maximum size, 1/2 inch; moist to wet; brown; gravels are concentrated in thin layers (about 0.1 to 0.3 inches thick); no reaction with HCl.
14	99	69.2	30.7	0.1	0.0	31	17	26.1								s(CL)
15	98								SP	100	0	2	4	10	47	45.5 to 51.5 ft.: SANDY LEAN CLAY, s(CL): About 65% fines with medium plasticity, high dry strength, low toughness, slow
16	97															
17	96								s(CL)	100	0	2	3	6	80	
18	95															
19	94								s(CL)	100	0	2	3	6	80	
20	93	32.6	67.4	0.0	0.0	0	0	22.1								SM
21	92								s(CL)	100	0	2	2	4	87	
22	91															
23	90								s(CL)	100	0	2	2	4	87	
24	89															
25	88	17.9	81.0	1.1	0.0	0	0	21.2	SM	3	3	6	6	80		
26	87								s(CL)	100	0	2	2	4	87	
27	86															
28	85	75.5	24.5	0.0	0.0	36	21	25.4	(CL)s	3	3	6	6	80		
29	84								s(CL)	100	0	2	2	4	87	
30	83															

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Geologic Units

- Roadbase
- Fill
- Quaternary: Basin Deposits

Symbols

- First Encountered Water Depth
- Potentiometric (static) Water Level Depth

Abbreviations

- FAPB: Flight Auger Pilot Bit
- FADC: Flight Auger Dry Core
- SPT: Standard Penetration Test
- HCl: Hydrochloric acid
- NR: No Recovery

*Blow counts are uncorrected (*N-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-DP1-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.25 mile north of intersection between McDermott Rd and Lenahan Road. On east shoulder of McDermott Road

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DATUM: CA State Plane, Zone 2, NAD83

GROUND ELEVATION: 112.2 ft. NAVD88

FIRST ENCOUNTERED WATER DEPTH, DATE: 6.3 ft. (el. 105.9 ft.), 11/3/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.2 ft. (el. 12.0 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: B. Holmes; S. Dalton

REVIEWED BY:

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	SPT Data				Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %		Lab Classification	FADC % Recovery	SPT Blows / 0.5 ft.	SPT Blows / ft.*			SPT % Recovery
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)											
31	81								s(MH)	100	0				dilatancy; about 35% predominantly fine with medium and trace coarse, hard, angular to subangular sand; maximum size, coarse sand; soft to firm consistency; moist; mottled light brown with gray; grades coarser with depth; no reaction with HCl.	
32	80								s(MH)	100	0					
33	79								s(MH)	100	0					
34	78	88.8	11.2	0.0	0.0	31	15	29.9	CL	100	3	3			51.5 to 58.2 ft.: CLAYEY SAND, SC: About 55% fine to coarse, hard, angular to subangular sand; about 45% fines with medium plasticity, high dry strength, medium toughness, no to slow dilatancy; maximum size, coarse sand; moist; mottled brown with gray; no reaction with HCl.	
35	77								s(MH)	100	0				58.2 to 60.9 ft.: CLAYEY SAND WITH GRAVEL, (SC)g: About 50% fine to coarse, hard, angular to subangular sand; about 35% fines with medium plasticity, high dry strength, medium toughness, no to slow dilatancy; about 15% fine, hard, subangular to subrounded gravel; moist; brown with gray, orange, and black; no reaction with HCl.	
36	76								s(MH)	100	2	6				
37	75								s(MH)	100	4				60.9 to 63.0 ft. NO RECOVERY	
38	74								SM	72	0				63.0 to 64.1 ft.: SILTY SAND, SM: About 80% fine sand; about 20% fines with no to low plasticity, rapid dilatancy; trace fine, hard, subrounded gravel; maximum size, 3/8 inch; wet; mottled predominantly brown with minor pale green-gray and red-brown; no reaction with HCl.	
39	73								SM	72	3	7				
40	72								s(MH)	48	7	16			64.1 to 64.8 ft.: CLAYEY SAND WITH GRAVEL, (SC)g: About 50% fine to coarse, hard, angular to subangular sand; about 35% fines with medium plasticity, high dry strength, medium toughness, no to slow dilatancy; about 15% fine, hard, subangular to subrounded gravel; maximum size, 3/8 inch; moist; brown with gray, orange, and black; no reaction with HCl.	
41	71								s(MH)	48	9					
42	70								(SM)g	96	3				64.8 to 66.5 ft.: SANDY LEAN CLAY, s(CL): About 65 to 70% fines with low to medium plasticity, medium to high dry strength, low toughness; no to slow dilatancy; about 30 to 35% fine sand; trace fine, hard, angular to subangular gravel; maximum size, 5/8 inch; soft to firm consistency; moist; mottled brown, green-gray, red-brown (FeOx), and minor black (MnO2); gravels have strong reaction with HCl; no reaction with HCl.	
43	69	20.3	48.6	31.1	0.0	46	26	18.2	(SC)g	96	4	13				
44	68								(GP-GM)s	100	4				66.5 to 67.1 ft.: LEAN CLAY WITH SAND, (CL)s: About 80 to 85% fines with low to medium plasticity, medium to high dry strength, low toughness, no to slow dilatancy; about 15 to 20% fine sand; trace fine, hard, angular to subangular gravel; maximum size, 5/8 inch; soft to firm consistency; moist; mottled brown, green-gray, red-brown (FeOx), and minor black (MnO2); no reaction with HCl.	
45	67								(GP-GM)s	100	4	8				
46	66								(GP-GM)s	100	4					
47	65								s(CL)	80	3				67.1 to 70.2 ft.: LEAN CLAY WITH SAND TO SANDY LEAN CLAY, (CL)s / s(CL): About 65 to 85% fines with low to medium plasticity, medium to high dry strength, low toughness, no to slow dilatancy; about 15 to 35% fine sand; trace fine, hard, angular to subangular gravel; maximum size, 5/8 inch; soft to firm consistency; moist; mottled brown, green-gray, red-brown (FeOx), and minor black (MnO2); alternating layers of (CL)s and s(CL); difficult to discern layer contacts; interbed from 68.1 to 68.3 feet consisting of calcareous cemented, fine to coarse gravel size, moderately hard, angular fragments (strong reaction with HCl; maximum size, 1-inch); no reaction with HCl.	
48	64								s(CL)	80	4	9				
49	63	79.8	17.5	2.7	0.0	28	8	25.3	(CL)s	80	5					
50	62								s(CL)	96	4					
51	61								s(CL)	96	4	10				
52	60								s(CL)	96	6				70.2 to 70.7 ft.: SANDY SILT TO SILTY SAND, s(ML) / SM: About 50% fine sand; about 50% non-plastic fines with rapid dilatancy; maximum size, fine sand; soft consistency; wet; mottled brown, red-brown, and green-gray; no reaction with HCl.	
53	59	67.0	31.3	1.7	0.0	27	11	23.1	s(CL)	100	2				70.7 to 70.8 ft.: Interbed of calcareous cemented, fine to coarse gravel, moderately hard, angular, strong reaction with HCl.	
54	58								s(CL)	100	4	9				
55	57								SC	100	5				70.8 to 74.7 ft.: LEAN CLAY TO LEAN CLAY WITH SAND, CL / (CL)s: About 85 to 90% fines with medium to high plasticity, very high dry strength, medium toughness, no dilatancy; about 10 to 15% fine with trace coarse, moderately hard, subangular sand; maximum size, coarse sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil, strong reaction with HCl in off-white stringers.	
56	56								SC	100	2					
57	55								SC	100	4	10				
58	54								(SC)g	100	7				74.7 to 75.2 ft. NO RECOVERY	
59	53								(SC)g	100	13	34			75.2 to 75.5 ft.: SILTY SAND, SM: About 80% fine sand; about 20% fines with no to low plasticity, rapid dilatancy; maximum size, fine sand; wet; brown; no reaction with HCl.	
									(SC)g	100	21				75.5 to 76.5 ft.: Gradational contact with next layer.	

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Geologic Units

Roadbase

Fill

Quaternary: Basin Deposits

Symbols

First Encountered Water Depth

Potentiometric (static) Water Level Depth

Abbreviations

FAPB: Flight Auger Pilot Bit
 FADC: Flight Auger Dry Core
 SPT: Standard Penetration Test
 HCl: Hydrochloric acid
 NR: No Recovery

*Blow counts are uncorrected (*N-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-DP1-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.25 mile north of intersection between McDermott Rd and Lenahan Road. On east shoulder of McDermott Road

START DATE, END DATE: 11/3/2019, 11/14/2019

COORDINATES: N 2,249,169.31 E 6,496,885.06

DATUM: CA State Plane, Zone 2, NAD83

GROUND ELEVATION: 112.2 ft. NAVD88

FIRST ENCOUNTERED WATER DEPTH, DATE:
6.3 ft. (el. 105.9 ft.), 11/3/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE:
NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.2 ft. (el. 12.0 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: B. Holmes; S. Dalton

REVIEWED BY:

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	FADC % Recovery	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %			Lab Classification	SPT Blows / 0.5 ft.	SPT Blows / ft.*			SPT % Recovery
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)											
62									(SC)g	43	23			76.5 to 77.7 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 85% fines with medium to high plasticity, high to very high dry strength, medium toughness, no dilatancy; about 15 to 25% predominantly fine with trace coarse, moderately hard, subangular sand; maximum size, coarse sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil, strong reaction with HCl in off-white stringers.		
61								NR		37	77	100				
60										40						
59		29.8	69.5	0.7	0.0	0	0	21.1	SM	95	5			77.7 to 78.1 ft.: SANDY SILT TO SILTY SAND, s(ML) / SM: About 50% fine sand; about 50% non-plastic fines with rapid dilatancy; maximum size, fine sand; soft consistency; wet; mottled brown, red-brown, and green-gray; no reaction with HCl.		
58									(SC)g	7	23	80				
57									s(CL)	16				78.1 to 79.7 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 80% fines with medium to high plasticity, high to very high dry strength, medium toughness; no dilatancy; about 20 to 25% predominantly fine with trace coarse, hard, subangular sand; maximum size, coarse sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil, strong reaction with HCl in off-white stringers.		
56									(CL)s	8						
55									(CL)s / s(CL)	11	24	100				
54									(CL)s	13				79.7 to 80.2 ft. NO RECOVERY		
53									(CL)s / s(CL)	14						
52									(CL)s / s(CL)	13	28	100				
51									s(ML) / SM	15				80.2 to 80.6 ft.: SANDY LEAN CLAY TO CLAYEY SAND, s(CL) / SC: About 50% fine with trace coarse, subangular, moderately hard sand (strong reaction with HCl); about 50% fines with medium plasticity, high dry strength, low to medium toughness, no to slow dilatancy; maximum size, fine sand; soft to firm consistency; moist to wet; mottled brown, green-gray, and red-brown (FeOx); no reaction with HCl in body of soil.		
50									(CL)s / s(CL)	3						
49		89.1	10.1	0.8	0.0	31	16	19.9	CL	100	6	20	100	80.6 to 81.0 ft.: LEAN CLAY, CL: About 90% fines with medium to high plasticity, very high dry strength, medium toughness, no dilatancy; about 10% fine sand; maximum size, fine sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil.		
48									CL / (CL)s	14						
47									CL / (CL)s	7						
46									CL / (CL)s	12	28	100		81.0 to 83.4 ft.: GRAVELLY LEAN CLAY WITH SAND, g(CL)s: About 65% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 20% fine to coarse, moderately hard, subangular gravel; about 15% fine to coarse, moderately hard, subangular sand; maximum size, 2.5 inches; firm to hard consistency; moist to wet; mottled brown with minor green-gray and red-brown (FeOx); no reaction with HCl in body of soil, strong reaction with HCl in gravels.		
45									NR	16						
44									SM	3						
43									SM	6	16	100		83.4 to 84.6 ft.: LEAN CLAY, CL: About 90 to 95% fines with medium to high plasticity, very high dry strength, medium toughness, no dilatancy; about 5 to 10% coarse, hard, subangular sand; maximum size, coarse sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil, strong reaction with HCl in coarse sand.		
42									(CL)s	10						
41									s(ML) / SM	5						
40									(CL)s	14	29	100		84.6 to 85.4 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 80% fines with medium to high plasticity, high to very high dry strength, medium toughness, no dilatancy; about 20 to 25% predominantly fine with trace coarse, hard, subangular sand; maximum size, coarse sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil, strong reaction with HCl in coarse sand.		
39									NR	15						
38									s(CL) / SC	9						
37									CL	21	60	100		85.4 to 87.7 ft.: LEAN CLAY, CL: About 90 to 95% fines with medium to high plasticity, very high dry strength, medium toughness, no dilatancy; about 5 to 10% coarse, hard, subangular sand; maximum size, coarse sand; hard consistency; moist; mottled brown and green-gray with off-white stringers; no reaction with HCl in body of soil, strong reaction with HCl in coarse sand.		
36		50.5	20.7	28.8	0.0	39	23	19.8	g(CL)s	39						
35									g(CL)s	11						
34									CL	13	30	100		87.7 to 89.7 ft.: SANDY LEAN CLAY, s(CL): About 70% fines with medium plasticity, high dry strength, low to medium toughness, no dilatancy; about 30% fine with trace coarse, hard, subangular sand; maximum size, coarse sand; firm consistency; moist; mottled brown with minor gray-green; no reaction with HCl in body of soil, strong reaction with HCl in coarse sand.		
33									(CL)s	10						
32									CL	15	37	100				
31									(CL)s	22				89.7 to 92.7 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium to high plasticity, high to very high dry strength, medium toughness, no dilatancy; about 15% fine with trace coarse, moderately hard, subangular sand; trace fine, moderately hard, subangular gravel (strong reaction with HCl); maximum size, 1/2 inch; firm to hard consistency; moist; mottled brown with minor gray-green; no reaction with HCl in body of soil.		
30									s(CL)	8						
29									s(CL)	11	24	100				
28									(CL)s	13				92.7 to 93.6 ft.: SANDY LEAN CLAY, s(CL):		
27									(CL)s							

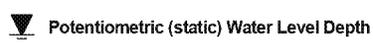
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Geologic Units



Quaternary: Basin Deposits

Symbols



Abbreviations

FAPB: Flight Auger Pilot Bit
 FADC: Flight Auger Dry Core
 SPT: Standard Penetration Test
 HCl: Hydrochloric acid
 NR: No Recovery

*Blow counts are uncorrected (*N-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-DP1-A

PROJECT: Sites - NODOS

COORDINATES: N 2,249,169.31 E 6,496,885.06

DEPTH TO BEDROCK: Not Encountered

FEATURE: Pipeline

DATUM: CA State Plane, Zone 2, NAD83

TOTAL DEPTH: 100.2 ft. (el. 12.0 ft.)

STATE: California

GROUND ELEVATION: 112.2 ft. NAVD88

ANGLE FROM HORIZONTAL: 90° (vertical)

LOCATION: Approx. 0.25 mile north of intersection between McDermott Rd and Lenahan Road. On east shoulder of McDermott Road

FIRST ENCOUNTERED WATER DEPTH, DATE: 6.3 ft. (el. 105.9 ft.), 11/3/2019

LOGGED BY: B. Holmes; S. Dalton

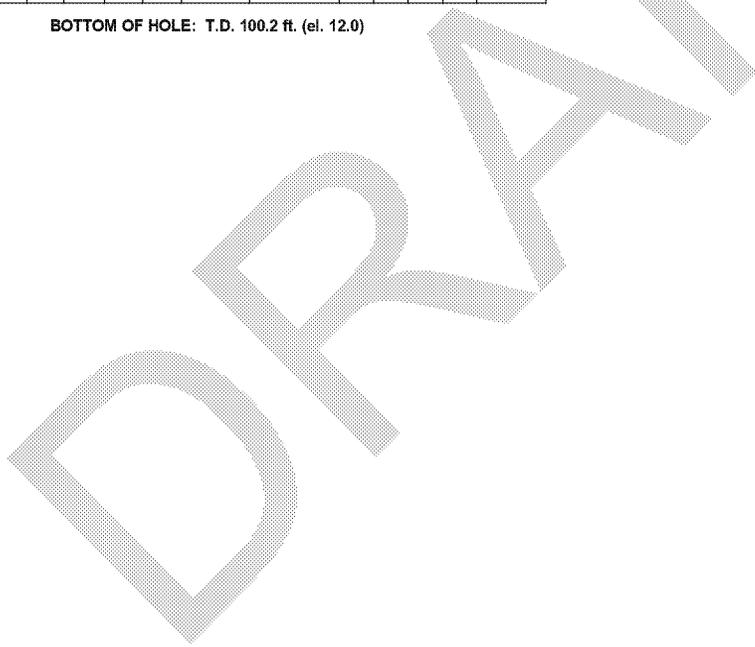
START DATE, END DATE: 11/3/2019, 11/14/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA

REVIEWED BY:

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	FADC % Recovery	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %			Lab Classification	SPT Blows / 0.5 ft.*	SPT Blows / ft.*			SPT % Recovery
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)											
91	21	88.7	10.0	1.3	0.0	46	28	19.1	CL	100	10	15	35	100	<p>About 70% fines with medium plasticity, high dry strength, low to medium toughness, no dilatancy; about 30% fine with trace coarse, hard, subangular sand; maximum size, coarse sand; firm consistency; moist; mottled brown with minor gray-green; no reaction with HCl in body of soil, strong reaction with HCl in coarse sand.</p> <p>93.6 to 93.8 ft.: CLAYEY SAND, SC: About 55% fine sand; about 45% fines with low to medium plasticity, medium to high dry strength, low toughness, slow dilatancy; maximum size, fine sand; moist to wet; brown; no reaction with HCl.</p> <p>93.8 to 94.4 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium to high plasticity, high to very high dry strength, medium toughness, no dilatancy; about 15% fine sand; maximum size, 1/2 inch; firm to hard consistency; moist; mottled brown with minor gray-green; no reaction with HCl.</p> <p>94.4 to 94.9 ft.: CLAYEY TO SILTY SAND, SC-SM: About 70 to 80% predominantly fine to medium with trace coarse, hard, subangular to subrounded sand; about 20 to 30% fines with no to low plasticity, slow to rapid dilatancy; maximum size, coarse sand; moist to wet; brown; no reaction with HCl.</p> <p>94.9 to 100.2 ft.: LEAN CLAY TO LEAN CLAY WITH SAND, CL / (CL)s: About 85 to 95% fines with medium to high plasticity, high to very high dry strength, medium toughness, no dilatancy; about 5 to 15% fine sand; firm to hard consistency; moist; mottled brown with minor gray-green; no reaction with HCl.</p>	
92	20								(CL)s	100	20					
93	19								s(CL)	100	9					
94	18								SC	100	11	24	100			
95	17								(CL)s	100	13					
96	16								SC-SM	100						
97	15	97.1	2.9	0.0	0.0	49	30	27.6	CL	100	5					
98	14								CL / (CL)s	100	8	19	100			
99	13									100	11					
100	12									100	4					
											9					
											11	20	100			

BOTTOM OF HOLE: T.D. 100.2 ft. (el. 12.0)



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Geologic Units

▬ Roadbase

▬ Fill

▬ Qb Quaternary: Basin Deposits

Symbols

▽ First Encountered Water Depth

▼ Potentiometric (static) Water Level Depth

Abbreviations

FAPB: Flight Auger Pilot Bit
 FADC: Flight Auger Dry Core
 SPT: Standard Penetration Test
 HCl: Hydrochloric acid
 NR: No Recovery

*Blow counts are uncorrected (*N*-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-DP1-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.25 mile north of intersection between McDermott Rd and Lenahan Road. On east shoulder of McDermott Road

START DATE, END DATE: 11/3/2019, 11/14/2019

COORDINATES: N 2,249,169.31 E 6,496,885.06

DATUM: CA State Plane, Zone 2, NAD83

GROUND ELEVATION: 112.2 ft. NAVD88

FIRST ENCOUNTERED WATER DEPTH, DATE: 6.3 ft. (el. 105.9 ft.), 11/3/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.2 ft. (el. 12.0 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: B. Holmes; S. Dalton

REVIEWED BY:

NOTES

PURPOSE OF HOLE:

To determine geotechnical properties of soil and depth to groundwater bearing soils (foundation conditions) for the proposed Delevan Pipeline. Data will be used to prepare feasibility level design of excavation slopes, a dewatering system, and structural support.

LOCATION:

About 0.25 miles north of the intersection between McDermott Road and Lenahan Road. Drill hole is located on the east shoulder of McDermott Road, about 16 feet from the edge of the road and about 8 feet from an unlined irrigation canal to the east (parallel to McDermott Road).

DRILLED BY:

Bureau of Reclamation: Pacific Northwest (PN) Region drill crew:
Rick Knott, driller
Austin Anderson, helper

DRILL RIG:

Central Mining Equipment (CME) 850 track mounted rig

DRILLING AND SAMPLING METHODS :

Drill hole was advanced using flight auger pilot bit (FAPB) and flight auger dry core (FADC) systems.

FAPB was to advance the lead auger between depths of 0.0 to 2.0 feet, which then allowed for FADC advancement. FAPB consisted of 4-1/4 inch i.d. by 8 inch o.d. hollow flight augers equipped with an 8.5-inch o.d. lead drill bit containing six carbide bullet teeth around the rim, and a 4-1/4 inch o.d. pilot bit with six carbide bullet teeth attached to NWJ rods and set inside the lead drill bit using. FAPB is a closed system and does not allow for collection of core.

FADC was used to advance the drill hole and collect soil core from 2.0 to 100.2 feet. FADC utilizes the same augers as FAPB. Instead of using a pilot bit, FADC uses a 3-3/8 inch i.d. by 4 inch o.d. by 5-foot-long split barrel dry coring system. NWJ rods were attached to a free spinning bearing assembly, which is attached to the FADC barrel. The bearing assembly allows for the FADC barrel to remain stationary while the augers rotate and advance the hole. The barrel's cutting shoe was 0.1 foot beyond the lead drill bit between 2.0 and 100.2 feet. A metal "basket" was used in the cutting shoe to assist with retention of core.

SPT was performed at 2.5 foot intervals (1-foot spacing between SPT intervals), unless otherwise noted. SPT consisted of a 1-3/8 inch i.d. by 2 inch o.d. by 2.0 foot long split spoon sampler driven 1.5 feet. Sampler was attached to NWJ rods that weigh about 57.5 lbs/10 ft. The sampler was advanced with an auto-hammer (140 pound weight with a 30 inch drop) at a rate of about 54 blows per minute (drill rig engine at about 1550 rpm). The auto-hammer energy was measured in companion hole DH-19-TRRPGP-B on November 1, 2019, resulting in a 87.4% energy correction. Blow count data presented in this log is uncorrected "N"-values.

DRILLING CONDITIONS:

0.0 to 5.2 ft.: FADC. Smooth and easy auger advancement.

5.2 to 6.7 ft.: SPT. No blow counts; sampler advanced under weight of the rods and hammer.

5.2 to 7.7 ft.: FADC. Very soft drilling. Wet zone observed from 6.3 to 6.6 feet. Driller noted lots of heave prior to drilling this interval.

7.7 to 9.2 ft.: SPT. No blow counts; sampler advanced under weight of the rods and hammer.

7.7 to 10.2 ft.: FADC. Smooth and easy auger advancement. Driller noted some heave.

10.2 to 11.7 ft.: SPT. Sampler sank about 0.4 feet before test. Driller noted about 0.2 ft. of heave.

10.2 to 12.7 ft.: FADC. Smooth and easy auger advancement. Driller noted heave.

12.7 to 14.2 ft.: SPT. Sampler sank about 0.7 feet before test. Driller noted about 0.3 ft. of heave.

12.7 to 16.0 ft.: FADC. Smooth and easy auger advancement. Ended the day with a short run (15.2 to 16.0 ft.) to set the augers flush with the ground surface (in accordance with the county encroachment permit).

16.0 to 17.7 ft.: FADC. Driller noted about 0.4 ft. of heave.

17.7 to 19.2 ft.: SPT was not performed due to about 1.5 ft. of heave. More water was added to the augers.

16.2 to 17.7 ft.: Pilot bit was used to cleanout heave down to 17.7 feet.

17.7 to 22.7 ft.: Smooth and easy auger advancement.

22.2 to 22.7 ft.: Pilot bit was used to clean out about 0.5 ft. of heave.

22.7 to 25.2 ft.: Smooth and easy auger advancement.

25.2 to 26.7 ft.: SPT. Driller noted 0.2 ft. of heave. Sampler sank through the 0.2 ft. of heave.

25.2 to 30.8 ft.: Smooth and easy auger advancement. Ended the day with a short run (30.2 to 30.8 ft.) to set the augers flush with the ground surface.

30.8 to 40.2 ft.: Smooth and easy auger advancement.

40.2 to 42.7 ft.: Driller notes "scratchy" drilling (slightly rough).

42.7 to 45.2 ft.: Smooth drilling with slightly rough spots.

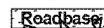
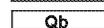
45.2 to 57.7 ft.: Smooth and easy auger advancement.

57.7 to 60.2 ft.: Driller notes drilling became very hard at about 59.7 feet and had to switch to manual down pressure.

60.2 to 60.9 ft.: Hit refusal with augers at 60.9 feet.

60.9 to 63.0 ft.: Pilot bit interval.

Geologic Units

-  Roadbase
-  Fill
-  Quaternary: Basin Deposits

Symbols

-  First Encountered Water Depth
-  Potentiometric (static) Water Level Depth

Abbreviations

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- SPT: Standard Penetration Test
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LIBRARY: SITES - NODOS.GLB REPORT: SITES_SPT DATE PRINTED: 3/10/2020

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-DP1-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.25 mile north of intersection between McDermott Rd and Lenahan Road. On east shoulder of McDermott Road

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GROUND ELEVATION: 112.2 ft. NAVD88

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6.3 ft. (el. 105.9 ft.), 11/3/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE:
NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.2 ft. (el. 12.0 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: B. Holmes; S. Dalton

REVIEWED BY:

NOTES

63.0 to 65.2 ft.: Smooth and easy auger advancement. Minor cuttings return.

65.2 to 67.7 ft.: Alternating hard and soft drilling.

74.7 to 75.2 ft.: No recovery.

79.7 to 80.2 ft.: No recovery.

80.2 to 82.7 ft.: Slow auger advancement due to clay/gravel.

85.2 to 100.2 ft.: Smooth and easy auger advancement.

DRILLING FLUID, RETURN AND COLOR:

Drilling fluid was not used to advance the hole.

REASON FOR HOLE TERMINATION:

Drill hole terminated at target depth.

HOLE COMPLETION:

The hole was backfilled with bentonite from total depth to ground surface.

GROUNDWATER LEVELS:

The following water levels were measured at the start of each day, prior to drilling:

11/3/2019: Groundwater initially encountered at 6.3 feet.

11/4/2019: 5.0 feet with lead auger at 16.0 feet.

11/5/2019: 4.1 feet with lead auger at 30.8 feet.

11/6/2019: 4.6 feet with lead auger at 50.2 feet.

11/13/2019: 4.8 feet with lead auger at 60.9 feet.

11/14/2019: 4.8 feet with lead auger at 77.7 feet.

NEARBY SURFACE WATER LEVELS:

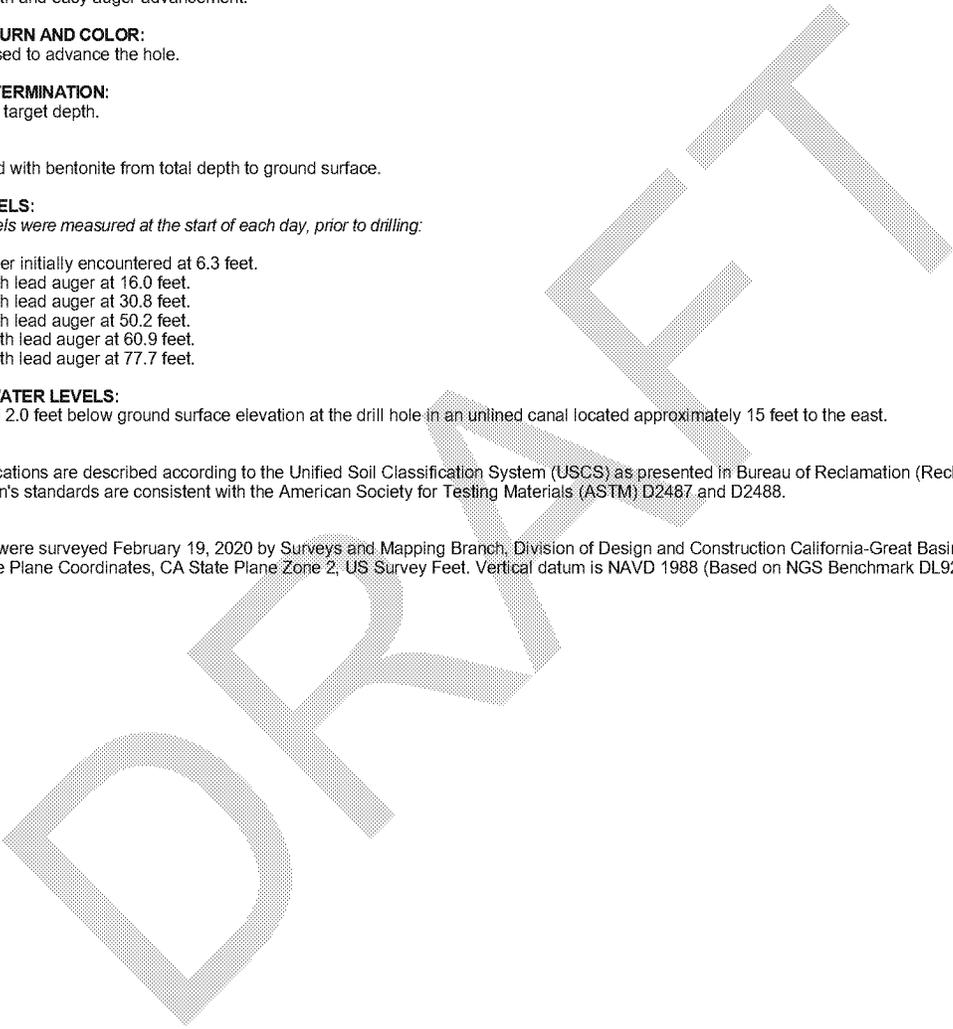
11/03-14/2019: About 2.0 feet below ground surface elevation at the drill hole in an unlined canal located approximately 15 feet to the east.

GENERAL NOTE:

Lab and visual classifications are described according to the Unified Soil Classification System (USCS) as presented in Bureau of Reclamation (Reclamation) standards USBR 5000 and 5005. Reclamation's standards are consistent with the American Society for Testing Materials (ASTM) D2487 and D2488.

SURVEY NOTE:

Geologic explorations were surveyed February 19, 2020 by Surveys and Mapping Branch, Division of Design and Construction California-Great Basin Region. Horizontal datum is NAD 1983 (2007) State Plane Coordinates, CA State Plane Zone 2, US Survey Feet. Vertical datum is NAVD 1988 (Based on NGS Benchmark DL92228 "CANAL 1").



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Geologic Units

Roadbase

Fill

Quaternary: Basin Deposits

Symbols

First Encountered Water Depth

Potentiometric (static) Water Level Depth

Abbreviations

FAPB: Flight Auger Pilot Bit
FADC: Flight Auger Dry Core
SPT: Standard Penetration Test
HCl: Hydrochloric acid
NR: No Recovery

*Blow counts are uncorrected (*N"-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-TRRPGP-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.65 mile northwest of McDermott Rd. on GCID's canal embankment

COORDINATES: N 2,248,042.59 E 6,494,158.64

DATUM: CA State Plane, Zone 2, NAD83

GROUND ELEVATION: 128.2 ft. NAVD88

FIRST ENCOUNTERED WATER DEPTH, DATE:
12.0 ft. (el. 116.2 ft.), 10/18/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE:
NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.9 ft. (el. 27.3 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: S. Dalton

REVIEWED BY:

START DATE, END DATE: 10/17/2019, 10/23/2019

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %		Lab Classification	FADC % Recovery	SPT Blows / 0.5 ft.*			SPT Blows / ft.*
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)										
26	102								(CL)s	100	24	100		moist; brown with localized minor green-gray; trace off-white fine to coarse sand and fine gravel size fragments throughout (strong reaction with HCl); trace black MnO2 specks throughout (medium sand size); no reaction with HCl.	
27	101								(CL)s	100	5	100		25.0 to 25.6 ft.: LEAN CLAY WITH SAND, (CL)s: About 75% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 25% fine sand; maximum size, fine sand; firm consistency; moist; brown with localized minor green-gray; no reaction with HCl.	
28	100								(CL)s	100	11	100		25.6 to 38.8 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15% fine sand; maximum size, fine sand; firm to hard consistency; moist; brown with localized minor green-gray; fairly consistent gradation, slight (5%) variation in sand percentage; no reaction with HCl.	
29	99								(CL)s	100	13	87		29.4 to 30.0 ft.: slight decrease in plasticity (approaching ML, but still rolls a thread), soft consistency.	
30	98								(CL)s	100	5	100		29.4 to 38.8 ft.: brown to red-brown with minor green-gray	
31	97								(CL)s	100	15	100		38.8 to 41.0 ft.: GRAVELLY LEAN CLAY WITH SAND, g(CL)s: About 60% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30% CaCO3 cemented nodules/fragments consisting of fine to coarse sand and fine to coarse gravel, hard, angular to subangular (surfaces coated with black MnO2, strong reaction with HCl); about 10% fine sand; moist; light brown; presence of CaCO3 fragments caused soil to break apart (crumbly); no reaction with HCl in body of soil.	
32	96	86.8	13.2	0.0	0.0	39	21	21.6	CL	100	6	100		41.0 to 42.1 ft.: LEAN CLAY WITH SAND, (CL)s: About 80% fines with low to medium plasticity, high dry strength, low to medium toughness, no to slow dilatancy; about 20% fine sand; maximum size, fine sand; firm consistency; moist; brown to red-brown with minor green-gray; black MnO2 specks throughout (medium sand size); trace off-white, fine to coarse sand size fragments (strong reaction with HCl); no reaction with HCl.	
33	95								(CL)s	100	12	100		42.1 to 43.5 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15% fine sand; maximum size, fine sand; firm to hard consistency; moist; brown with localized minor green-gray; fairly consistent gradation, slight (5%) variation in sand percentage; no reaction with HCl.	
34	94								(CL)s	100	14	100		43.5 to 48.6 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 85% fines with low to medium plasticity, high dry strength, low to medium toughness, no to slow dilatancy; about 15 to 25% fine sand; maximum size, fine sand; firm consistency; moist; brown to red-brown with minor green-gray; no reaction with HCl.	
35	93								(CL)s	100	16	100		48.6 to 49.4 ft.: SANDY LEAN CLAY TO CLAYEY SAND, s(CL) / SC: About 50% predominantly fine to medium with trace coarse, hard, subangular to subrounded sand; about 50% fines with low to medium plasticity, medium dry strength, low toughness, slow dilatancy; maximum size, coarse sand; moist to wet; brown; weakly consolidated (breaks apart with light manual pressure); no reaction with HCl.	
36	92								(CL)s	100	6	100		49.4 to 52.0 ft.: LEAN CLAY WITH SAND, (CL)s: About 75% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 25% fine sand; maximum size, fine sand; firm consistency; moist; brown; no reaction with HCl.	
37	91								(CL)s	100	14	100		52.0 to 52.5 ft.: SANDY LEAN CLAY TO CLAYEY SAND, s(CL) / SC: About 50% predominantly fine to medium with coarse, hard, subangular to subrounded sand; about 50% fines with low to medium plasticity, medium dry strength, low toughness, slow dilatancy; maximum size, coarse sand; moist to wet; brown; weakly consolidated (breaks apart with light manual pressure); no reaction with HCl.	
38	90								(CL)s	100	16	100		52.5 to 57.6 ft.: LEAN CLAY WITH SAND, (CL)s: About 75% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 25% fine sand; maximum size, fine sand; firm consistency; moist; brown; no reaction with HCl.	
39	89								(CL)s	100	5	100		57.6 to 61.2 ft.: LEAN CLAY WITH SAND TO SANDY LEAN CLAY, (CL)s / s(CL): About 70 to 80% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 20 to 30% fine sand; maximum size, fine sand; firm consistency; moist; brown; no reaction with HCl.	
40	88	71.9	15.0	13.1	0.0	42	24	22.1	(CL)s	100	4	100		61.2 to 63.1 ft.: SILTY SAND, SM:	
41	87								(CL)s	100	13	100			
42	86								(CL)s	100	15	100			
43	85								(CL)s	100	8	100			
44	84								(CL)s	100	16	100			
45	83								(CL)s	100	16	100			
46	82								(CL)s	100	8	100			
47	81								(CL)s	100	16	100			
48	80								(CL)s	100	8	100			
49	79								(CL)s	100	15	100			
									(CL)s	100	18	100			
									(CL)s	100	33	100			
									(CL)s	100	10	100			

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Geologic Units

- Roadbase
- Fill
- Quaternary: Basin Deposits

Symbols

- First Encountered Water Depth
- Potentiometric (static) Water Level Depth

Abbreviations

- FAPB: Flight Auger Pilot Bit
- FADC: Flight Auger Dry Core
- SPT: Standard Penetration Test
- HCl: Hydrochloric acid
- NR: No Recovery

*Blow counts are uncorrected (*N-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-TRRPGP-A

PROJECT: Sites - NODOS
FEATURE: Pipeline
STATE: California
LOCATION: Approx. 0.65 mile northwest of McDermott Rd. on GCID's canal embankment

COORDINATES: N 2,248,042.59 E 6,494,158.64
DATUM: CA State Plane, Zone 2, NAD83
GROUND ELEVATION: 128.2 ft. NAVD88
FIRST ENCOUNTERED WATER DEPTH, DATE: 12.0 ft. (el. 116.2 ft.), 10/18/2019
POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA

DEPTH TO BEDROCK: Not Encountered
TOTAL DEPTH: 100.9 ft. (el. 27.3 ft.)
ANGLE FROM HORIZONTAL: 90° (vertical)
LOGGED BY: S. Dalton
REVIEWED BY:

START DATE, END DATE: 10/17/2019, 10/23/2019

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %		Lab Classification	FADC % Recovery	SPT Data			
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)							SPT Blows / 0.5 ft.			SPT Blows / ft.*
78											22	45		About 60% fine sand; about 40% fines with no to low plasticity, rapid dilatancy; maximum size, fine sand; moist; brown; black MnO2 throughout; trace off-white, fine to coarse sand size, CaCO3 fragments (strong reaction with HCl); no reaction with HCl in body of soil.	
51							(CL)s	100		22	45	100			
77										23	45				
52	76										9			63.1 to 64.4 ft.: SILTY SAND, SM: About 85% predominantly fine with trace medium sand; about 15% non-plastic fines; maximum size, medium sand; moist to wet; brown; no reaction with HCl.	
53	76	92.4	7.0	0.6	0.0	41	22	23.0	CL	100	13	27	100		
54	74										14			64.4 to 69.2 ft.: LEAN CLAY TO LEAN CLAY WITH SAND, CL / (CL)s: About 75 to 90% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 10 to 25% fine sand; maximum size, fine sand; hard consistency; moist; brown with minor green-gray; trace off-white, fine to coarse sand size fragments with strong reaction with HCl; minor black MnO2 specks throughout; no reaction with HCl in body of soil.	
55	73								(CL)s	100	9				
56	72										16	34	100		
57	71										18			69.2 to 70.0 ft.: SANDY LEAN CLAY, s(CL): About 65 to 70% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30 to 35% fine sand; maximum size, fine sand; hard consistency; moist; brown with minor green-gray; no reaction with HCl.	
58	70								(CL)s / s(CL)	100	4				
59	69										12	27	100	70.0 to 70.5 ft.: CLAYEY SAND, SC: About 70% fine sand; about 30% fines with low to medium plasticity, medium dry strength, low toughness, slow to rapid dilatancy; maximum size, fine sand; moist to wet; brown; minor black MnO2 specks; no reaction with HCl.	
60	68								(CL)s / s(CL)	100	15				
61	67										4				
62	66	50.1	49.9	0.0	0.0	24	8	15.2	s(CL)	SM	7			70.5 to 74.1 ft.: LEAN CLAY TO LEAN CLAY WITH SAND, CL / (CL)s: About 85 to 90% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 10 to 15% fine sand; maximum size, fine sand; hard consistency; moist; brown with minor green-gray; trace off-white, fine to coarse sand size fragments with strong reaction with HCl; minor black MnO2 specks throughout; no reaction with HCl in body of soil.	
63	66										10	17	100		
64	64	34.3	65.4	0.3	0.0	31	17	15.1	SC	SM	4			74.1 to 74.4 ft.: SANDY LEAN CLAY, s(CL): About 65 to 70% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30 to 35% fine sand; maximum size, fine sand; firm to hard consistency; moist to wet; brown with minor green-gray; no reaction with HCl.	
65	63										5				
66	62										14	32	100	74.4 to 75.2 ft.: SANDY LEAN CLAY, s(CL): About 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15% fine sand; maximum size, fine sand; firm to hard consistency; moist to wet; brown with minor green-gray; no reaction with HCl.	
67	61										18				
68	60										7			75.2 to 76.5 ft.: SANDY LEAN CLAY, s(CL): About 65 to 70% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30 to 35% fine sand; maximum size, fine sand; firm to hard consistency; moist to wet; brown with minor green-gray; no reaction with HCl.	
69	59										18	39	100		
70	58										21			76.5 to 76.9 ft.: SANDY LEAN CLAY, s(CL): About 50% fine sand; about 50% fines with low plasticity, medium to high dry strength, no to low toughness, slow dilatancy; maximum size, fine sand; firm consistency; moist; brown with minor red-brown and dark brown (spotty); no reaction with HCl.	
71	57										7				
72	56	80.2	19.8	0.0	0.0	42	32	14.2	(CL)s	CL / (CL)s	12			76.9 to 77.2 ft.: SILTY SAND, SM: About 85% fine sand; about 15% non-plastic fines; maximum size, fine sand; wet; brown to red-brown; no reaction with HCl.	
73	55										14	26	100		
74	54										6			77.2 to 77.9 ft.: CLAYEY SAND, SC: About 65% predominantly fine with trace medium sand; about 35% fines with low plasticity, medium dry strength, low toughness, slow dilatancy; maximum size, medium sand; moist to wet; brown with minor red-brown and dark brown in patches; no reaction with HCl.	
											13	34	100		
											21			77.9 to 80.8 ft.: SANDY LEAN CLAY, s(CL): About 65 to 70% fines with medium to high plasticity, high to very high dry strength, medium to high toughness, no dilatancy; about 30 to 35% predominantly fine to medium with coarse, hard, subrounded sand; maximum size, coarse sand; hard consistency; moist; green-gray; trace off-white, fine to coarse sand size fragments (strong reaction with HCl); no reaction with HCl.	
											5				
											11			80.8 to 81.4 ft.: CLAYEY SAND, SC: About 75% predominantly fine to medium with coarse, hard, subangular to subrounded sand; about 25% fines with low to medium plasticity, medium dry strength, low toughness, slow dilatancy; maximum size, coarse sand; moist to wet; olive-brown; minor spotty FeOx; no reaction with HCl.	
											25	57	100		
											32				
											9				

Geologic Units

- Roadbase
- Fill
- Qb Quaternary: Basin Deposits

Symbols

- First Encountered Water Depth
- Potentiometric (static) Water Level Depth

Abbreviations

- FAPB: Flight Auger Pilot Bit
- FADC: Flight Auger Dry Core
- SPT: Standard Penetration Test
- HCl: Hydrochloric acid
- NR: No Recovery

*Blow counts are uncorrected (*N-Values)

LIBRARY: SITES - NODOS.GLB REPORT: SITES_SPT DATE PRINTED: 3/10/2020

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-TRRPGP-A

PROJECT: Sites - NODOS

FEATURE: Pipeline

STATE: California

LOCATION: Approx. 0.65 mile northwest of McDermott Rd. on GCID's canal embankment

COORDINATES: N 2,248,042.59 E 6,494,158.64

DATUM: CA State Plane, Zone 2, NAD83

GROUND ELEVATION: 128.2 ft. NAVD88

FIRST ENCOUNTERED WATER DEPTH, DATE: 12.0 ft. (el. 116.2 ft.), 10/18/2019

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH: 100.9 ft. (el. 27.3 ft.)

ANGLE FROM HORIZONTAL: 90° (vertical)

LOGGED BY: S. Dalton

REVIEWED BY:

START DATE, END DATE: 10/17/2019, 10/23/2019

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	FADC % Recovery	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %			Lab Classification	SPT Blows / 0.5 ft.	SPT Blows / ft.*			SPT % Recovery
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)											
76	52								s(CL)	100	18	34	100	81.4 to 83.0 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium to high plasticity, high to very high dry strength, medium toughness, no dilatancy; about 15% predominantly fine with medium sand; maximum size, medium sand; hard to very hard consistency; moist; light green-gray; weakly cemented with CaCO ₃ ; strong reaction with HCl in off-white, fine to coarse sand and fine gravel (up to 3/8-inch) size fragments; displays claystone-like appearance and properties, breaks apart with light to moderate manual pressure, crumbly; clay is somewhat dispersive and air slakes/dessication cracks; weak reaction with HCl.		
77	51							SM		6						
78	50								SC		15	31	100	83.0 to 84.2 ft.: SANDY LEAN CLAY, s(CL): About 65% fines with medium plasticity, medium to high dry strength, low toughness, no to slow dilatancy; about 35% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; trace clay nodules (CaCO ₃ cemented, strong reaction with HCl); no reaction with HCl.		
79	49							s(CL)	93	16						
80	48										11			84.2 to 84.9 ft.: SANDY SILT, s(ML): About 60% fines with no to low plasticity, slow dilatancy; about 40% fine sand; maximum size, fine sand; hard to very hard consistency; moist to wet; dark brown; weakly to moderately cemented with non-calcareous material, break apart with manual pressure and with some effort between fingernails; no reaction with HCl.		
81	47							SC	100	22	49	100				
82	46	70.3	20.7	9.0	0.0	59	29	32.5	(CH)s					84.9 to 86.4 ft.: SANDY LEAN CLAY, s(CL): About 85% fines with medium plasticity, medium to high dry strength, low toughness, no to slow dilatancy; about 35% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; about 5% clay nodules (CaCO ₃ cemented, strong reaction with HCl), fine to coarse sand and fine to coarse gravel size; no reaction with HCl.		
83	45								(CL)s		10					
84	44										11	28	100	86.4 to 88.5 ft.: LEAN CLAY, CL: About 90 to 95% fines with high plasticity, very high dry strength, medium to high toughness, no dilatancy; about 5 to 10% fine sand; maximum size, fine sand; very hard consistency; moist; light green-gray; trace FeOx thread-like rootlets; no reaction with HCl.		
85	43								s(CL)	84	17					
86	42										12			88.5 to 91.4 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; trace off-white fragments (strong reaction with HCl); band of FeOx (about 3/8-inch thick) at the upper contact; no reaction with HCl in body of soil.		
87	41								s(ML)		16	37	100			
88	40								CL		21			91.4 to 93.5 ft.: SANDY LEAN CLAY, s(CL): About 70% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; no reaction with HCl.		
89	39										7					
90	38										14	34	100	93.5 to 94.9 ft.: LEAN CLAY WITH SAND, (CL)s: About 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; no reaction with HCl.		
91	37								CL	96	20					
92	36										9			94.9 to 95.8 ft.: SANDY LEAN CLAY, s(CL): About 70% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; no reaction with HCl.		
93	35								(CL)s		15	33	100			
94	34										26	64	100	95.8 to 96.9 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15 to 25% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; no reaction with HCl.		
95	33								s(CL)	100	18					
96	32	80.1	19.3	0.6	0.0	41	20	27.0	(CL)s		9			96.9 to 97.5 ft.: SANDY LEAN CLAY, s(CL): About 70% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 30% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; contains weakly to moderately cemented s(CL) and SM; no reaction with HCl.		
97	31								(CL)s	100	15	36	100			
98	30										21			97.5 to 98.2 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15 to 25% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; contains weakly to moderately cemented s(CL) and SM at 98.2 ft.; no reaction with HCl.		
99	29								s(CL)	100	14					
									(CL)s		23	67	100	98.2 to 99.4 ft. NO RECOVERY		
									NR		44					
									(CL)s		14		100			

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Geologic Units

Roadbase

Fill

Quaternary: Basin Deposits

Symbols

First Encountered Water Depth

Potentiometric (static) Water Level Depth

Abbreviations

FAPB: Flight Auger Pilot Bit
 FADC: Flight Auger Dry Core
 SPT: Standard Penetration Test
 HCl: Hydrochloric acid
 NR: No Recovery

*Blow counts are uncorrected (*N-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-TRRPGP-A

PROJECT: Sites - NODOS

COORDINATES: N 2,248,042.59 E 6,494,158.64

DEPTH TO BEDROCK: Not Encountered

FEATURE: Pipeline

DATUM: CA State Plane, Zone 2, NAD83

TOTAL DEPTH: 100.9 ft. (el. 27.3 ft.)

STATE: California

GROUND ELEVATION: 128.2 ft. NAVD88

ANGLE FROM HORIZONTAL: 90° (vertical)

LOCATION: Approx. 0.65 mile northwest of McDermott Rd. on GCID's canal embankment

FIRST ENCOUNTERED WATER DEPTH, DATE:
12.0 ft. (el. 116.2 ft.), 10/18/2019

LOGGED BY: S. Dalton

POTENTIOMETRIC (STATIC) WATER DEPTH, DATE:
NA

REVIEWED BY:

START DATE, END DATE: 10/17/2019, 10/23/2019

Depth (feet)	Elevation (feet)	Laboratory Data							Visual Classification	FADC % Recovery	SPT Data			Geologic Unit	Visual Classification and Physical Condition	
		% By Weight				Liquid Limit	Plasticity Index	Moisture Content %			Lab Classification	SPT Blows / 0.5 ft.*	SPT Blows / ft.*			SPT % Recovery
		% Fines	% Sand	% Gravel	% Cobble (3- to 5-inch)											
28										21	50		Qb	99.4 to 100.9 ft.: LEAN CLAY WITH SAND, (CL)s: About 75 to 85% fines with medium plasticity, high dry strength, medium toughness, no dilatancy; about 15 to 25% fine sand; maximum size, fine sand; firm to hard consistency; moist; light green-gray; no reaction with HCl.		
									21	50						
									29	100						
BOTTOM OF HOLE: T.D. 100.9 ft. (el. 27.3)																

DRAFT

LIBRARY: SITES-NODOS.GLB REPORT: SITES_SPT DATE PRINTED: 3/10/2020

Geologic Units

Roadbase

Fill

Quaternary: Basin Deposits

Symbols

First Encountered Water Depth

Potentiometric (static) Water Level Depth

Abbreviations

FAPB: Flight Auger Pilot Bit
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 SPT: Standard Penetration Test
 HCl: Hydrochloric acid
 NR: No Recovery

*Blow counts are uncorrected (*N-Values)

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-TRRPGP-A

PROJECT: Sites - NODOS FEATURE: Pipeline STATE: California LOCATION: Approx. 0.65 mile northwest of McDermott Rd. on GCID's canal embankment START DATE, END DATE: 10/17/2019, 10/23/2019	COORDINATES: N 2,248,042.59 E 6,494,158.64 DATUM: CA State Plane, Zone 2, NAD83 GROUND ELEVATION: 128.2 ft. NAVD88 FIRST ENCOUNTERED WATER DEPTH, DATE: 12.0 ft. (el. 116.2 ft.), 10/18/2019 POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA	DEPTH TO BEDROCK: Not Encountered TOTAL DEPTH: 100.9 ft. (el. 27.3 ft.) ANGLE FROM HORIZONTAL: 90° (vertical) LOGGED BY: S. Dalton REVIEWED BY:
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NOTES

PURPOSE OF HOLE:

To perform Standard Penetration Test (SPT), visually classify, and collect/test samples in order to determine geotechnical properties of soil and depth to groundwater bearing soils (foundation conditions) for a proposed pumping plant associated with proposed Terminal Regulating Reservoir (TRR). Data will be used to prepare feasibility level design of excavation slopes, a dewatering system, and structural support.

LOCATION:

About 0.7 mile northwest where McDermott Road crosses Funks Creek. Drill hole is located on the north (left side) embankment of GCID's unlined canal, about 12 feet north-northeast (perpendicular) from the top edge of the canal's water-side slope.

Approximately 5 feet northwest of companion undisturbed/intact sample hole, DH-19-TRRPGP-B.

DRILLED BY:

Bureau of Reclamation: Pacific Northwest (PN) Region drill crew:
 Rick Knott, driller
 Austin Anderson, helper

DRILL RIG:

Central Mining Equipment (CME) 850 track mounted rig

DRILLING AND SAMPLING METHODS :

Drill hole was advanced using flight auger pilot bit (FAPB) and flight auger dry core (FADC) systems.

FAPB was to advance the lead auger between depths of 0.0 to 1.9 feet, which then allowed for FADC advancement. FADC refusal was encountered at a depth of 98.2 feet, so FAPB was advanced from 98.2 to 99.4 feet. FAPB consisted of 4-1/4 inch i.d. by 8 inch o.d. hollow flight augers equipped with an 8.5-inch o.d. lead drill bit containing six carbide bullet bit teeth around the rim, and a 4-1/4 inch o.d. pilot bit with six carbide bullet teeth attached to NWJ rods and set inside the lead drill bit using. FAPB is a closed system and does not allow for collection of core.

FADC was used to advance the drill hole and collect soil core from 1.9 to 98.2 feet. FADC utilizes the same augers as FAPB. Instead of using a pilot bit, FADC uses a 3-3/8 inch i.d. by 4 inch o.d. by 5-foot-long split barrel dry coring system. NWJ rods were attached to a free spinning bearing assembly, which is attached to the FADC barrel. The bearing assembly allows for the FADC barrel to remain stationary while the augers rotate and advance the hole. The barrel's cutting shoe was 0.1 foot beyond the lead drill bit between 1.9 and 96.9 feet. The cutting shoe was retracted even with the lead drill bit between 96.9 and 98.2 feet, where FADC refusal was encountered in hard consistency clay that lifted the rig off its supports. A metal "basket" was used in the cutting shoe to assist with retention of core.

SPT was performed at 2.5 foot intervals (1-foot spacing between SPT intervals), unless otherwise noted. SPT consisted of a 1-3/8 inch i.d. by 2 inch o.d. by 2.0 foot long split spoon sampler driven 1.5 feet. Sampler was attached to NWJ rods that weigh about 57.5 lbs/10 ft. The sampler was advanced with an auto-hammer (140 pound weight with a 30 inch drop) at a rate of about 54 blows per minute (drill rig engine at about 1550 rpm). The auto-hammer energy was measured in companion hole DH-19-TRRPGP-B on November 1, 2019, resulting in a 87.4% energy correction. Blow count data presented in this log is uncorrected "N"-values.

DRILLING CONDITIONS:

0.0 to 16.9 ft.: Smooth and easy auger advancement.

16.9 to 18.4 ft.: SPT. Wet SM and SP-SM in sampler. Appears to have potential to be flowing sand (potential for heaving).

16.9 to 19.4 ft.: FADC. Filled augers with water prior to pulling sampler. Heaving did not occur.

19.4 to 20.9 ft.: SPT. Filled augers with water prior to pulling sampler. Wet, flowing sand heaved 2 ft. into augers after pulling sampler.

19.4 to 21.9 ft.: FADC. Lifted augers a few feet to flush sand out bottom of augers and to allow FADC sampler to seat in lead auger. Advanced auger/sampler. Filled augers with water prior to pulling sampler. Heaving did not occur (measured hole depth to confirm). Upper 0.5 ft. in sampler is SP-SM and appears to be flowing/heaved sand.

21.9 to 24.4 ft.: FADC. Firm to hard clay, which sealed off heaving sand with augers socketed into it.

21.9 to 100.9 ft.: Minor drill cuttings generated, which slowed auger advancement. Smooth, but slow drilling.

29.4 to 36.9 ft.: FADC. Abundant water displaced to surface. Driller rate significantly reduced so drillers could shovel water into Bobcat bucket (permit disallows water discharge to surface and adjacent canal).

61.9 to 64.4 ft.: FADC. No material in sampler cutting shoe (fell downhole). Auger refusal (drill rig lifted off ground). Due to minimal drill cuttings, auger flights are believed to be plugged with compacted soil. Pulled back augers 5 ft., backspun augers to remove material from auger flights (downhole), and drilled out material with FAPB. Minimal success in generating drill cuttings.

64.4 to 74.4 ft. and 79.9 to 98.2 ft.: FADC. 0.2 to 1 ft. of slough (wet, loose sand) in top and on outside of FADC sample tube. Sand originating from 16.9 to 21.9 ft. Slight wobble of augers created a small annular space between the borehole sidewall and augers, allowing sand to move down the outside of the augers and then in through bottom of augers.

74.4 to 76.9 ft.: FADC. No material in sampler cutting shoe (fell downhole).

76.9 to 79.9 ft.: FADC. No material in sampler cutting shoe (fell downhole).

79.9 to 82.4 ft.: FADC. Auger refusal (drill rig lifted off ground and shifted over). Refusal encountered on a thin layer of very hard compacted clay (claystone-like appearance). Driller was able to slowly advance through clay layer.

82.4 to 84.9 ft.: FADC. No material in sampler cutting shoe (fell downhole).

87.4 to 89.9 ft.: FADC. No material in sampler cutting shoe (fell downhole).

89.9 to 92.4 ft.: FADC. No material in sampler cutting shoe (fell downhole).

94.9 to 96.9 ft.: FADC. Auger refusal. Driller was able to slowly advance augers.

96.9 to 98.2 ft.: FADC. Driller was able to slowly advance augers after retracting FADC sampler cutting shoe even with lead auger drill bit. Auger refusal at 98.2 ft.

98.2 to 99.4 ft.: FAPB. Pilot bit required to advance hole to final SPT interval (99.4 to 100.9 ft.)

Geologic Units

Roadbase

Fill

Quaternary: Basin Deposits

Symbols

First Encountered Water Depth

Potentiometric (static) Water Level Depth

Abbreviations

FAPB:	Flight Auger Pilot Bit
FADC:	Flight Auger Dry Core
SPT:	Standard Penetration Test
HCl:	Hydrochloric acid
NR:	No Recovery

*Blow counts are uncorrected ("N"-values)

LIBRARY: SITES - NODOS.GLB REPORT: SITES_SPT DATE PRINTED: 3/10/2020

GEOLOGIC LOG OF DRILL HOLE NO. DH-19-TRRPGP-A

PROJECT: Sites - NODOS FEATURE: Pipeline STATE: California LOCATION: Approx. 0.65 mile northwest of McDermott Rd. on GCID's canal embankment START DATE, END DATE: 10/17/2019, 10/23/2019	COORDINATES: N 2,248,042.59 E 6,494,158.64 DATUM: CA State Plane, Zone 2, NAD83 GROUND ELEVATION: 128.2 ft. NAVD88 FIRST ENCOUNTERED WATER DEPTH, DATE: 12.0 ft. (el. 116.2 ft.), 10/18/2019 POTENTIOMETRIC (STATIC) WATER DEPTH, DATE: NA	DEPTH TO BEDROCK: Not Encountered TOTAL DEPTH: 100.9 ft. (el. 27.3 ft.) ANGLE FROM HORIZONTAL: 90° (vertical) LOGGED BY: S. Dalton REVIEWED BY:
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NOTES

DRILLING FLUID, RETURN AND COLOR:

Drilling fluid was not used to advance the hole.

REASON FOR HOLE TERMINATION:

Drill hole terminated at target depth.

HOLE COMPLETION:

The hole was backfilled with bentonite from total depth to 1 ft. bgs, and with gravel road base from 1 to ground surface.

GROUNDWATER LEVELS:

The following water levels were measured at the start of each day, prior to drilling:

- 10/18/2019: Groundwater initially encountered at 12.0 feet in SPT interval 11.9 to 13.4 ft.
- 10/19/2019: 15.6 feet with lead auger at 29.4 feet.
- 10/20/2019: 20.4 feet with lead auger at 59.4 feet.
- 10/21/2019: 30.2 feet with lead auger at 79.9 feet.
- 10/22/2019: 23.4 feet with lead auger at 94.9 feet.

NEARBY SURFACE WATER LEVELS:

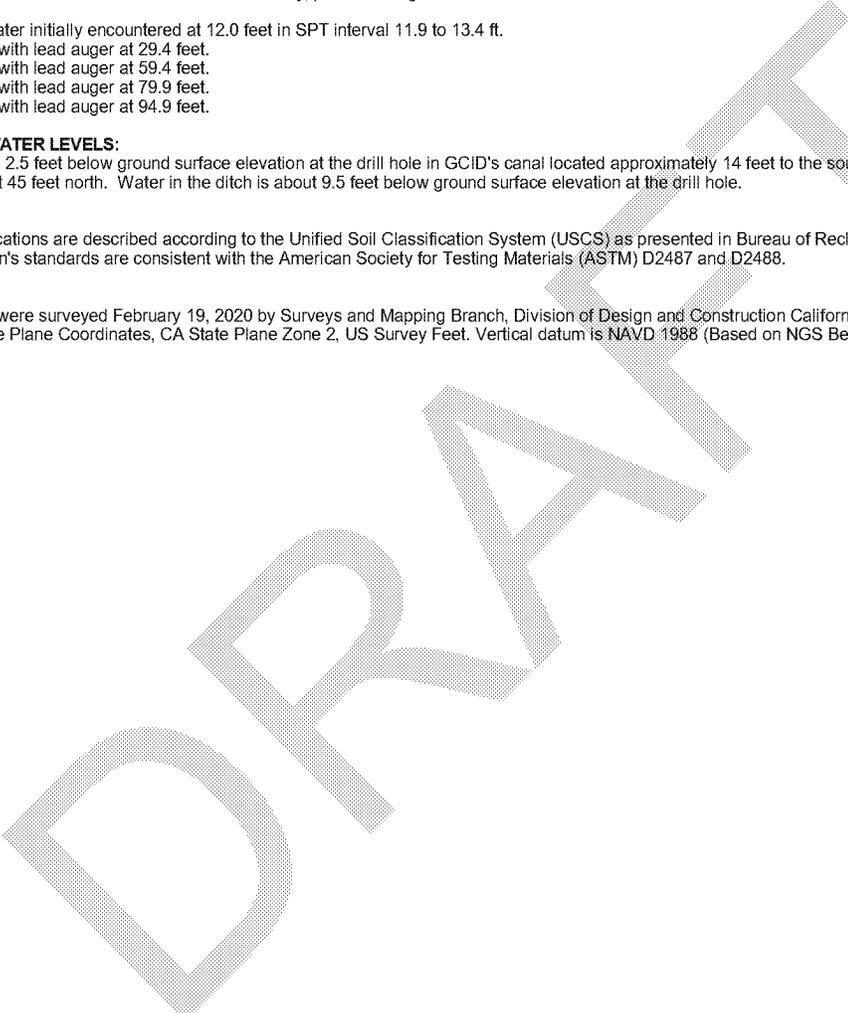
10/18-22/2019: About 2.5 feet below ground surface elevation at the drill hole in GCID's canal located approximately 14 feet to the south-southwest. Surface water is also present in a ditch located about 45 feet north. Water in the ditch is about 9.5 feet below ground surface elevation at the drill hole.

GENERAL NOTE:

Lab and visual classifications are described according to the Unified Soil Classification System (USCS) as presented in Bureau of Reclamation (Reclamation) standards USBR 5000 and 5005. Reclamation's standards are consistent with the American Society for Testing Materials (ASTM) D2487 and D2488.

SURVEY NOTE:

Geologic explorations were surveyed February 19, 2020 by Surveys and Mapping Branch, Division of Design and Construction California-Great Basin Region. Horizontal datum is NAD 1983 (2007) State Plane Coordinates, CA State Plane Zone 2, US Survey Feet. Vertical datum is NAVD 1988 (Based on NGS Benchmark DL92228 "CANAL 1").



LIBRARY: SITES-NODOS.GLB REPORT: SITES_SPT DATE PRINTED: 3/10/2020

Geologic Units

Roadbase

Fill

Quaternary: Basin Deposits

Symbols

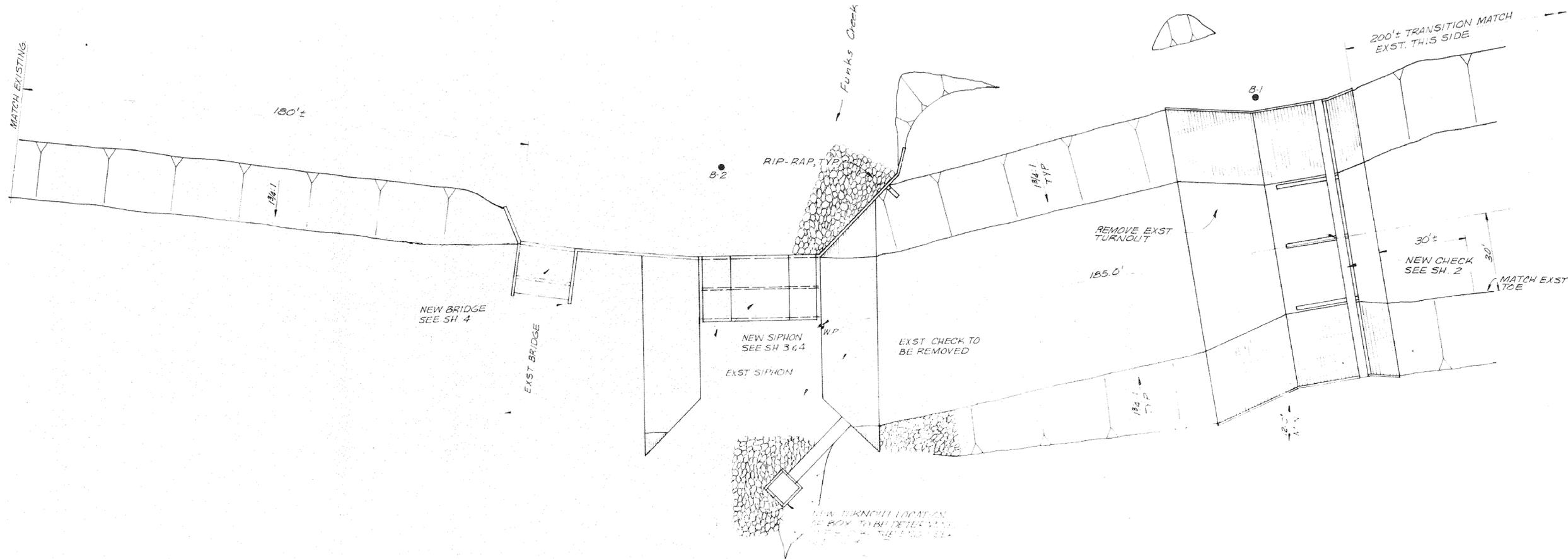
First Encountered Water Depth

Potentiometric (static) Water Level Depth

Abbreviations

FAPB:	Flight Auger Pilot Bit
FADC:	Flight Auger Dry Core
SPT:	Standard Penetration Test
HCl:	Hydrochloric acid
NR:	No Recovery

*Blow counts are uncorrected (*N"-Values)



PLANS FOR THE DIVERSION OF
 FUNKS CREEK SHALL BE
 APPROVED BY THE ENGINEER.



CH₂M HILL	DES. JEC						
	DR. ELM						
	CHK. GRK						
APPD.		NO.	DATE	REVISION	BY	APPD.	

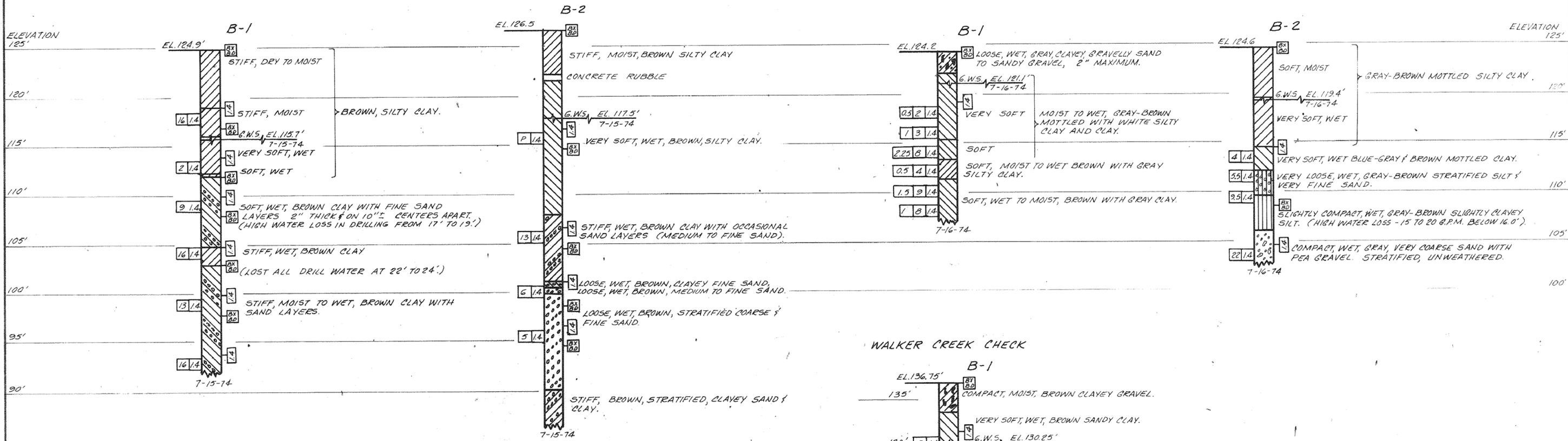
GLENN - COLUSA
 IRRIGATION DISTRICT
 WILLOWS CALIFORNIA

SIPHON AND CHECK
 GENERAL PLAN

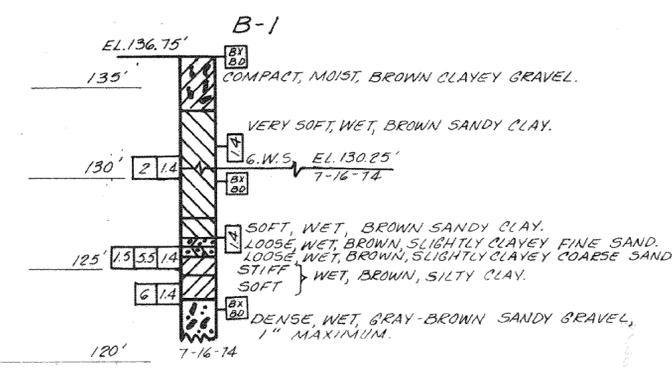
SHEET 1
 OF 8
 DATE
 DWG. NO. R-3013.24

FUNKS SLOUGH SIPHON

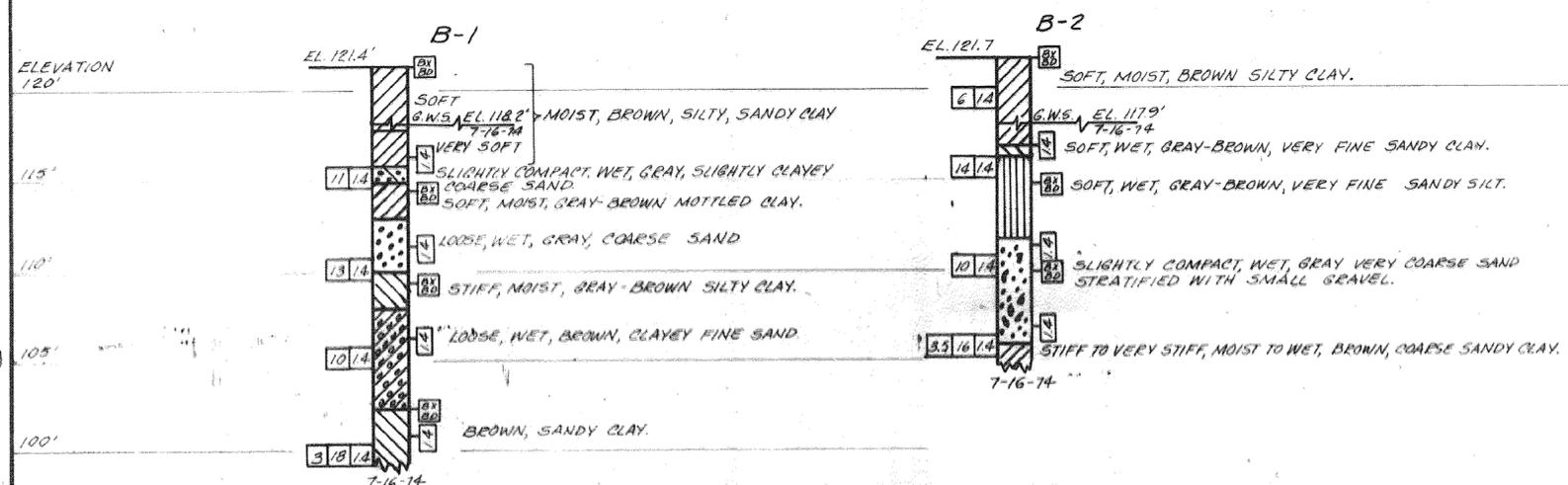
WILLOW CREEK SIPHON



WALKER CREEK CHECK



WALKER CREEK SIPHON



BORING PROFILES

Scale: 1" = 5' vertical
 Note: For plan of borings see Sheet 1 & 2

LEGEND OF DRILLING, SAMPLING & TESTING OPERATIONS

ROTARY BORING: Includes diagrams for sampler boring, penetration boring, and blow count recording. Details include sampler size, unit weight, and blow count methods.

PENETRATION BORING: Includes diagrams for cone penetration and vane shear tests. Details include blow count methods and material change indicators.

THE UNIFIED SOIL CLASSIFICATION SYSTEM				ROCK CLASSIFICATION		SOIL CONSISTENCY CLASSIFICATION	
MAJ DIV	LETTER	SYMBOL	N.A.M.E.	SYMBOL	N.A.M.E.	CONSISTENCY	B.L.O.W.S PER FT.
COARSE GRAINED SAND AND GRAVELLY SAND	GW	[Symbol]	WELL GRADED GRAVEL OR GRAVELLY SAND MIXTURES, LITTLE OR NO FINES	ML	INORGANIC SILT AND VERY FINE SAND, LOW PLASTICITY	CONSISTENT	0 TO 25
POORLY GRADED SAND OR GRAVEL SAND MIXTURES, LITTLE OR NO FINES	GP	[Symbol]		CL	INORGANIC CLAY OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAY, SANDY CLAY, SILTY CLAY, LEAN CLAY	SLIGHTLY COMPACT	25 TO 50
SILTY GRAVEL, GRAVEL SAND SILT MIXTURES	GM	[Symbol]		OL	ORGANIC SILT AND ORGANIC SILTY CLAY OF LOW PLASTICITY	VERY STIFF	50 TO 70
CLAYEY GRAVEL, GRAVEL SAND CLAY MIXTURES	GC	[Symbol]		MH	INORGANIC SILT, MICACEOUS OR INOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT	COMPACT	70 TO 95
WELL GRADED SAND OR GRAVELLY SAND, LITTLE OR NO FINES	SW	[Symbol]		CH	INORGANIC CLAY OF HIGH PLASTICITY, FAT CLAY	DENSE	95 TO 120
POORLY GRADED SAND OR GRAVELLY SAND, LITTLE OR NO FINES	SP	[Symbol]		OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILT	VERY DENSE	120 TO 150
SILTY SAND, SAND SILT MIXTURES	SM	[Symbol]		PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	VERY HARD	150 TO 200
CLAYEY SAND, SAND SILT MIXTURES	SC	[Symbol]					

LOG OF TEST BORINGS

ENGINEERING GEOLOGIST: **333**

REGISTRATION NUMBER: **333**

1525 COURT STREET, REDDING, CALIFORNIA

GLEN - COLUSA IRRIGATION DISTRICT

DWG. NO. **8**

JOB NO. **R-3013.26 H**

DRILL HOLE LOG

PROJECT SITES RESERVOIR PROJECT DATE DRILLED 05/05/01
FEATURE NEW CANAL ALIGNMENT ATTITUDE VERTICAL
LOCATION CAL COORDS: N- 2247683; E- 64827 10 LOGGED BY D. FOREWALTER, G. GORDON
CONTR. LAYNE-CHRISTENSEN DRILL RIG CME-850 DEPTH TO WATER NOT DETERMINED

*As measured off of contour maps prepared by DVR (contour interval=10 feet).

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
0.0 (200)		PLIOCENE TEHAMA FORMATION 0.0 to -16.0'			
2.0		2.0 to 4.5' Clay (CL); silty; light yellowish-brown (10YR 6/4); dry, high plasticity; medium toughness; very high dry strength.	1	PS	8" hollow stem auger used for drilling. Shelby Tube 800 psi Shear Strength = N/A Unconfined Strength = >4.5 tons/ft'
4.0				AD	
6.0	CL	5.0 to 7.5' Clay (CL); silty; olive brown (2.5Y 6/6); dry, high plasticity; very high dry strength.	2	PS	Shelby Tube 1000 psi Shear Strength = 4.25 kg/cm' Unconfined Strength = >4.5 tons/ft'
8.0 (192)				AD	
10.0		10.0 to 11.5' Clay (CL); silty; yellowish-brown (10YR 5/6); dry, very stiff to hard; low to medium plasticity; very high dry strength.	3	DR	California Modified Blow Count- 16,42.50 for 5" Shear Strength = 5.0 kg/cm' Unconfined Strength = >4.5 tons/ft'
12.0				AD	
14.0		15.0 to 16.5' Clay (CL); silty; yellowish-brown (10YR 5/6); dry, very stiff to hard; medium plasticity; very high dry strength; severely weathered bedrock; remaining bedrock, mudstone; light olive brown (2.5Y 5/3).	4	DR	California Modified Blow Count- 18,80.50+ cont. next page.

DRILL HOLE LOG

PROJECT & FEATURE SITES RESERVOIR PROJECT; New Canal Alignment

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
15.0 (184)					Shear Strength = 5.25 kg/cm' Unconfined Strength = >4.5 tons/ft'
18.0				AD	
20.0		GREAT VALLEY SEQUENCE CRETACEOUS CORTINA FORMATION ~16.0 to 61.5'			
22.0		20.0 to 61.5' Weathered mudstone.	5	DR	California Modified Blow Count- 12,29.45 Shear Strength = 8.125 kg/cm' Unconfined Strength = >4.5 tons/ft'
24.0 (178)				AD	
26.0			6	DR	California Modified Blow Count- 27.50 for 5" Shear Strength = N/A Unconfined Strength = >4.5 tons/ft'
28.0				AD	
30.0			7	DR	California Modified Blow Count- 46.50 for 3" Shear Strength = N/A Unconfined Strength = >4.5 tons/ft'
32.0				AD	
34.0			8	DR	California Modified Blow Count- 48.50 for 3"

DRILL HOLE LOG

PROJECT & FEATURE SITES RESERVOIR PROJECT; New Canal Alignment

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
38.0 (164)					Shear Strength = N/A Unconfined Strength = >4.5 tons/ft ²
38.0				AD	
40.0			9	DR	California Modified Blow Count- 30,50 for 3" Shear Strength = N/A Unconfined Strength = >4.5 tons/ft ²
42.0				AD	
44.0 (158)					
46.0			10	DR	California Modified Blow Count- 30,50 for 3" Shear Strength = N/A Unconfined Strength = >4.5 tons/ft ²
48.0				AD	
50.0			11	DR	California Modified Blow Count- 100 for 5" Shear Strength = N/A Unconfined Strength = >4.5 tons/ft ²
52.0		BOH = 51.5'			
54.0					Hole completed by back filling with cuttings.

DRILL HOLE LOG

PROJECT SITES RESERVOIR PROJECT

DATE DRILLED 05/05/01

FEATURE NEW CANAL ALIGNMENT

ATTITUDE VERTICAL

LOCATION CAL COORDS: N- 2246895; E- 6486288

LOGGED BY D. FOREWALTER, G. GORDON

CONTR. LAYNE-CHRISTENSEN DRILL RIG CME-850

DEPTH TO WATER 6.0'

*As measured off of contour maps prepared by DWR (contour interval=10 feet).

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
0.0 (170)					
0.0		<u>PLIOCENE TEHAMA FORMATION</u> 0.0 to 51.5'		AD	6" hollow stem auger used for drilling.
2.0	CL	2.0' Clay (CL): silty; dark brown (10YR 3/3); hard, dry; medium to high plasticity; high dry strength; few grass rootlets.	1	PS	Sheelby Tube 500 psi Shear Strength = N/A Unconfined Strength = N/A
4.0					
4.0	SC	4.5' Sand (SC): very fine sand, clayey, silty; yellowish brown (10YR 6/4); dry, very dense; low to medium plasticity, low toughness; high dry strength; some calcareous bits (white 2.5 Y 8/2).		AD	
6.0			2	PS	Sheelby Tube 1200 psi Shear Strength = 13.76 kg/cm ² Unconfined Strength = 4.6 tons/ft ²
8.0 (162)					
8.0	CL	5.0' Clay (CL): sandy, silty; yellowish brown (10YR 5/4); dry, hard; high plasticity; high toughness; high dry strength. 7.5' Clay (CL): sandy, silty; yellow (2.5YR 7/6); dry, hard; medium plasticity; medium toughness; high dry strength.		AD	
10.0			3	DR	California Modified Blow Count- 10,19,42 Shear Strength = 2.5 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
12.0					
12.0				AD	
14.0					
14.0	CL	15.0 to 16.5' Clay (CL): silty; yellowish brown (10YR 5/4); stiff to hard, dry; high plasticity; medium toughness; high dry strength.	4	DR	California Modified Blow Count- 13,20,33 cont. next page.

DRILL HOLE LOG

PROJECT & FEATURE SITES RESERVOIR PROJECT; New Canal Alignment

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
16.0 (154)					Shear Strength = 2.5 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
18.0				AD	
20.0		20.0 to 21.5' Clay (CL); silty; light olive brown (2.5 Y 5/4); stiff to very stiff, slightly moist; high plasticity; low dry strength.	5	DR	California Modified Blow Count- 9,13,28 Shear Strength = 1.25 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
22.0				AD	
24.0 (146)					
26.0	CL	25.0 to 26.5' Clay (CL); sandy, silty; brownish-yellow (10YR 6/6); minor fine sand, moist.	6	DR	California Modified Blow Count- 11,18,24 Shear Strength = 11.25 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
28.0				AD	
30.0		30.0 to 31.5' Clay (CL); silty, sandy; yellowish-brown (10YR 5/4); fine sand; stiff, slightly moist low plasticity; low toughness; minor iron staining.	7	DR	California Modified Blow Count- 8,15,19 Shear Strength = 10.625 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
32.0				AD	
34.0		35.0 to 36.5' Clay (CL); sandy, silty; brownish-yellow (10YR 6/6); fine to medium sand; stiff to hard, slightly moist; low plasticity; low toughness; abundant iron staining.	8	DR	California Modified Blow Count- 6,9,43

DRILL HOLE LOG

PROJECT & FEATURE SITES RESERVOIR PROJECT; New Canal Alignment

DEPTH (ELEV.)	LOG	FIELD CLASSIFICATION AND DESCRIPTION	SAMPLE NO.	MODE	REMARKS
36.0 (134)					Shear Strength = 1.25 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
38.0				AD	
40.0		40.0 to 41.5' Clay (CL); gravelly, silty; olive brown (2.5Y4/3); fine gravel; firm to very stiff, slightly moist; high plasticity; medium toughness; nodules of greenish-brown clay.	9	DR	California Modified Blow Count- 8,17,22 Shear Strength = 9.375 kg/cm ² Unconfined Strength = 3.0 tons/ft ²
42.0				AD	
44.0 (126)	CL				
46.0		45.0 to 46.5' Clay (CL); silty; light olive brown (2.5Y 5/4); stiff to hard, slightly moist; high plasticity; low to medium toughness.	10	DR	California Modified Blow Count- 11,17,31 Shear Strength = 8.75 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
48.0				AD	
50.0		50.0 to 51.5' Clay (CL); silty; olive brown (2.5Y 4/3); firm to very stiff, slightly moist; high plasticity; medium to high toughness; iron staining and mottling. BOH = 51.5'	11	DR	California Modified Blow Count- 8,15,28 Shear Strength = 11.25 kg/cm ² Unconfined Strength = >4.5 tons/ft ²
52.0					Hole completed by back filling with cuttings.
54.0					

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/18/2020 6:04:03 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: Res Comm Items 03-01, 03-01A

Good morning Marcia –

I was going to share the final version of the NGO comment matrix included at Item 03-01A for the Reservoir Committee meeting with ICF but noticed that there are still tracked changes and comments from Jerry's review. What is the timing for finalizing the package? I would rather share the public version.

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/>

Draft Memo – predecisional not for release

Memorandum

To:	Sites Authority
From:	Jim Lecky, Technical Director
Date:	August 7, 2020
Re:	California Fish and Game Code 5937 and Funks and Stone Corral Creeks

Key Points

1. In their comments on the Sites Project Authority (Sites Authority) and U.S. Bureau of Reclamation (USBR) 2017 Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/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 cubic feet per second (cfs) base flow for maintaining fish below Sites Dam and Golden Gate Dam in good condition.
2. These dams will be impassable and retain flows from Stone Corral and Funks Creeks. A base flow of 10 cfs will not mimic variability in flows or the geomorphic processes that currently maintain the ecological function of these creeks.
3. Section 5937 of the 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. Based on CDFW surveys conducted in these streams, there are 10 species of fish that are likely present in Stone Corral and Funks Creeks. None are listed as threatened or endangered or are considered species of special concern, but these fish are subject to Section 5937. The list of fish should be confirmed with CDFW.
4. A recommendation is presented below that may be adequate to maintain the 10 species likely to be present in these creeks and the habitat that supports them. This recommendation is intended to stimulate discussion among the Sites Authority, its engineering staff, and its environmental review team to investigate the economic and technological feasibility of a mechanism for addressing the CDFW and SWRCB comments regarding flow in Stone Corral and Funks Creeks.

Commented [AJ1]: I'd footnote this – ID this as section 5937

Commented [AJ2]: To what species? They aren't salmonid streams

Commented [AJ3]: Earlier comment on footnote – I'd include this.

Commented [AJ4]: Should or would

Commented [SJ5]: Let's include the recommendation up here as well.

Draft Memo – predecisional not for release

Background

The two major dams of the Sites Reservoir Project, Sites Dam and Golden Gate Dam, will impound Stone Corral and Funks Creeks, respectively. In addition to California Fish and Game Code 5937, water rights have been appropriated on these streams to the Glenn-Colusa Irrigation District (GCID) and other water users. CDFW and the SWRCB commented on how these issues were addressed in the Draft EIR/EIS.

Commented [A16]: What issues...the impoundment and appropriated water rights? Make clearer

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 fisheries 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 Funks and Stone Corral Creeks would be managed:

- Are base flows to be provided year-round or only from October to May?
- Would base flows be limited to 10 cfs or would the dams be operated to match pre-project flows (other than flood flows)?

The SWRCB also commented that the impacts of dam operations on fluvial geomorphologic process below the dams should be analyzed.

Environmental Setting 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 prisms¹. 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 resulting from cattle use (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

¹ Characterization of stream channels is based on desktop review of streams using Google Earth.

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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 GCID canal siphon. Although most of the water in the canal passes under Stone Corral Creek in the siphon, GCID can make releases 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 under Funks Creek in a siphon, GCID can make releases 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.

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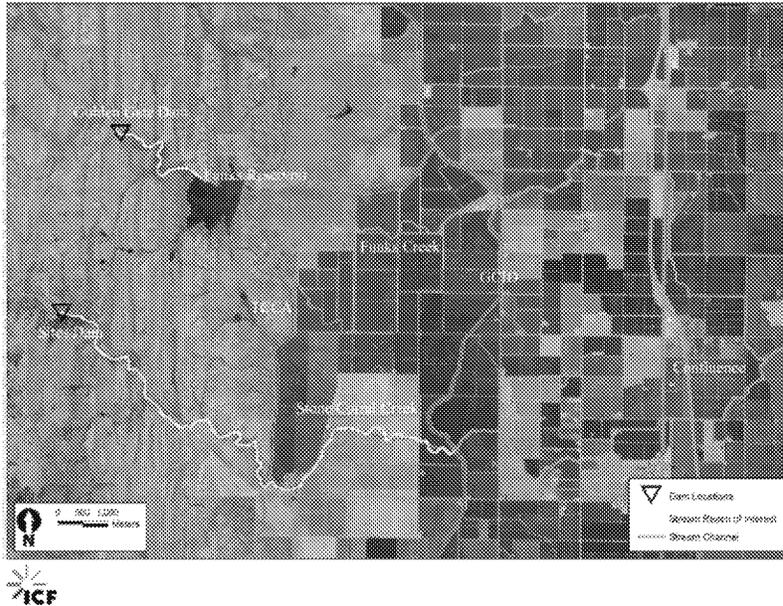


Figure 1. Stone Corral and Funks Creeks

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 a desk top survey of Google Earth photos, nutrient loading from the cattle grazing lands and agricultural fields is a likely cause in both watersheds. During fish surveys in 1998 and 1999, CDFW noted the water quality was poor and high in dissolved minerals. The total dissolved solids in the water were so high that it precluded electrofishing as a means of sampling (CDFG 2003).

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).

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The U.S. Geological Survey (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).

Given the comparable size 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, including likely 100-year discharge flows. The daily mean hydrology (Table 1) was presented in the Draft EIR/EIS and is included below. 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 (Table 2), of which three are considered game fish.

Draft Memo – predecisional not for release**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

Commented [A17]: Which three are game fish? Some how identify since its mentioned in text.

Sacramento hitch (hitch) was the most common species sampled during these studies. Hitch were found in all the creeks in the Sites and Colusa Project area. Hitch were also present in the greatest numbers. Stone Corral Creek had the greatest diversity of fish throughout the year. 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.

The investigators did observe one adult Chinook salmon (later confirmed to be a spring-run Chinook salmon) in Antelope Creek. Antelope Creek is a tributary to Stone Corral Creek 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. Thus, CDFW did not include Chinook salmon as a species present in the Stone Corral or Funks Creeks (CDFG 2003). In addition, the only access to Funks and Stone Corral Creeks from the Sacramento River is through the CBD and the 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, in which a combination of warm temperatures, poor water quality, limited habitat, and a lack of access upstream for return to the Sacramento River leaves them stranded where they perish without spawning (ICF 2016).

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 National Marine Fisheries Service 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).

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Effects of Sites Reservoir Project on Stone Corral and Funks Creeks

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 and Golden Gate dams will be built across Stone Corral and Funks Creeks 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 there is a potential for stranding of fish below the dams as winter flows diminish. The Draft EIR/EIS was unclear as to whether the proposed base flow was to be provided year-round or only from October through May. Regardless, fish would continue to be able to move downstream to wetted habitat given GCID's use of the stream channels for conveyance. However, it remains uncertain whether the measures proposed in the 2017 Draft EIR/EIS for flow below the dams is sufficient to comply with the Sites Authority's obligation under California Fish and Game Code 5937.

The U.S. Fish and Wildlife Service has suggested that California red-legged frog (*Rana draytonii*) habitat may exist in the Funks Creek reach between the Golden Gate Dam location and the upper end of Funks Reservoir (USFWS 2020). Conservation of wetland habitats in that reach and flow needed to maintain them warrants further consideration during development of base flows to ensure habitat is protected for this endangered species.

The 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). However, additional consideration should be given to whether and how those flows will be released and what level of variability in base flows will satisfy California Fish and Game Code 5937 goals consistent with the goals and objectives of the Sites Reservoir Project.

The Sites Project Authority's decision to revise and recirculate its environmental document for the Sites Reservoir Project² presents an opportunity to revisit California Fish and Game Code 5937 and

² Sites Authority press release April 22, 2020. <https://sitesproject.org/wp-content/uploads/2020/04/Sites-News-Release-EIR-Recirculation-Announcement-FINAL-2020-04-22.pdf>

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determine whether a refined proposal for facilities and procedures would be appropriate for maintaining fish in good condition below Sites and Golden Gate Dams.

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 CDFW studies.

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 or Golden Gate Dams 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 needed to develop values for sustaining fishery resources. Their presumptive standard is based on characterizing unimpaired flow and protecting a portion 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). 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 (Figure 1). While these reaches have been modified by cattle grazing and minor diversions for domestic use and stock watering, they still experience their natural hydrograph and fluvial geomorphic processes. As such, the Richter et al. (2011) approach may be a reasonable starting point for addressing California Fish and Game Code 5937. 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.

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Table 3 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 10 to 80 cfs to the reaches of interest in Stone Corral and Funks Creeks, which should be protective of the ecosystem function of Stone Corral and Funks Creeks. Part of their consideration should be installation of one or more stream gages above Sites Reservoir to provide information for determining the appropriate timing and duration of variable flows representative of the historical hydrograph. The environmental team should work with the engineering team to develop an adaptive management scheme for assessing the appropriate level of base flow (e.g., 10 cfs) during the summer months that were historically dry. This element of a perennial flow regime will likely be important in maintaining habitat functions lost due to blockage of the streams.

Finally, 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 of 10 to 80 cfs may be enough to maintain the geomorphic processes that support the fish assemblage and other aquatic species below the dams. However, this should be identified as an issue in a monitoring and adaptive management plan and 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 (perhaps flows of several hundred cfs). The need for and magnitude of flows necessary for maintenance of geomorphic processes should also be subject to monitoring and adaptive management.

Table 3. 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

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Day of the Month	Discharge, Cubic Feet per Second											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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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From: Tull, Robert/SAC [Robert.Tull@jacobs.com]
Sent: 8/19/2020 11:20:14 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Heydinger, Erin [Erin.Heydinger@hdrinc.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]
Subject: RE: Sites Water Supply Modeling for SWP Participants

Flag: Follow up

Resending table below with post-processed potential allocation of Sites releases under Alternative VP7 to NOD, SOD, and Prop 1 by water year type

From: Tull, Robert/SAC
Sent: Tuesday, August 11, 2020 10:42 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites Water Supply Modeling for SWP Participants

Ali – See email and table below we provided previously to you and Jerry to approximate where the water is going. As we discussed most of the wet water is going to Prop1 refuges/Yolo Bypass. This was post-process as the VP7 analysis was preliminary as noted below.

=====

Below is a post-processed table that shows the potential allocation of Sites releases under Alternative VP7 to NOD, SOD, and Prop 1 by water year type.

This table is not for distribution as the VP sensitivity analysis was focused on Sites feasibility in terms of total average annual volumes and not the allocation of water to member groups.

Consistent with past analyses the greatest releases are in dry years and operational flexibility will be critical to our ability to convey this water to SOD members, Yolo Bypass, and SOD refuges.

Let me know if you have any additional questions,

Thanks,
 Rob

VP7 - Sites Average Annual Releases (TAF)			
Water Year Type	NOD Members	SOD Members	Prop 1
Long-Term	50	143	50
Wet	17	17	82
Above Normal	50	143	93
Below Normal	54	143	76
Dry	58	205	119
Critically Dry	50	143	44

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, August 11, 2020 10:18 AM
To: Tull, Robert/SAC <Robert.Tull@jacobs.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: [EXTERNAL] RE: Sites Water Supply Modeling for SWP Participants

See page 20 of the Value Planning Report – I think the Wet and Above Normal year are the years in question here.

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

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From: Alicia Forsythe
Sent: Tuesday, August 11, 2020 10:15 AM
To: Tull, Robert/SAC <Robert.Tull@jacobs.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: FW: Sites Water Supply Modeling for SWP Participants

My draft email below. Let me know ASAP if you have any concerns. Keep in mind that the Value Planning report ID'ed some Sites releases in wet and above normal years.

Robert and Jerry – I talked briefly with Rob Tull on this item this morning. The modeling gives Article 21 water a higher priority at the Banks PP as the premise of the analysis is that Sites should not impact the existing SWP contractors. The amounts shown in the Value Planning Report for wet and above normal years are a combination of Sacramento Valley uses of Sites water (limited in these years types, but it is possible that there would be use in some years with different CVP/SWP allocations over the 82-year record in Calsim) and Proposition 1 water (the model assumes Yolo Bypass and refuge water).

It is important to keep in mind that the analysis assumes that Sites water can be moved as Table A water. So although there is limited capacity at Banks in wet and above normal years, there are also limited times / windows when the model is indicating that some water can be moved south of Delta and still not affect other SWP Table A or Article 21 water. The model has perfect foresight and makes perfect decisions based on the operating criteria in the model. We recognize that real world operations may be different and it may be much more difficult to project and capitalize on these windows.

This is something we can dig into more now. However, it might be better to wait just a bit (if we have time) until the revised Calsim model with the ROC on LTO and DCR 2019 / components of the SWP ITP are incorporated in.

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: Rob Kunde <rkunde@wrmwsd.com>
Sent: Monday, August 10, 2020 2:31 PM
To: Jerry Brown <jbrown@sitesproject.org>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Sites Water Supply Modeling for SWP Participants

Jerry and Ali:

I have fielded the following questions from recent meetings among the SWC Participants, and today several SWC Non-Participants asked varying questions with this theme. I am only able to provide a general answer.

In the Operations Table of the Executive Prospectus, significant releases are shown for wet and above normal years when there is little if any SWP capacity to move water. When and how much water in the Operations table would be available to the SWP Participants? What is the potential for this water to conflict with movement of other water such as baseline (pre-existing Table A Project water) supplies?

Rob Tull has repeatedly stated the modeling uses the SWP Table A demand patterns and moves water whenever there is available capacity. But in wet and above normal years, there is little if any SWP conveyance capacity (limited by the BiOps and existing Banks PP capacity) and the Sac Valley agencies don't need Sites water in those years. This merits clarification.

It appears to me that there is enough interest in this to justify preparing a document on the matter. The analyses are obviously already done; we just need a breakdown. The starting point would be to show the 82 year CALSIM-II model run with the South of Delta deliveries (baseline SWP and incremental Sites water) shown for each month. Then a summary could also be prepared. I know there are multiple model runs under differing assumptions, but I think we could pick one or two as representative.

I would like to discuss this further with you and bring Cindy or Eric and two others into the discussion.

Please ponder and advise.

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_0003427

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From: Eric Leitterman [ELeitterman@valleywater.org]
Sent: 8/19/2020 1:02:39 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Katrina Jessop [KJessop@valleywater.org]
Subject: RE: Sites - CalSIM Model Request for Scenario B
Attachments: Sites_Reservoir_Schematic_083018.pdf

Hi Ali,

Thanks again for facilitating the delivery of the VP7 model to Santa Clara. I spent some time looking through the files and I have some follow up questions for the CH2M-Jacobs consultants that I was hoping you could relay.

Based on the attached schematic previously provided to me by Rob Leaf, it looks like model deliveries at Funks to the Sites Participants equals the combined flows of C30 + C30A + C30B + C30C + C31. Similarly the combined flows of C32 + C32B + C32C + C34D would be the public benefit share of releases. Is this correct?

If so then appears that the participant share of releases is only 129 TAF as opposed to the 203 TAF reported in the Value Planning Report. However, the combined total of all flows (C30 + C30A + C30B + C30C + C31 + C32 + C32B + C32C + C34D) is 242 TAF, about the same as is in the Value Planning Report. Does this have something to do with maintaining the old Reclamation exchange logic as a surrogate for a potential non-investment Reclamation exchange with no carry over storage? Does this mean that the 40 TAF/203 TAF split between public benefits and participating water agency benefits in the Value Planning Report is a post-processing split?

If all of the above is correct, does that make it inappropriate to calculate SOD participant share based a post-processing analysis of the change in total exports (D419_SWP + D419_CVP + D418).

Based on what I have said above does it sound like I received the correct copy of the model? I am pretty sure I did, but figured it couldn't hurt to double check.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Eric Leitterman
Sent: Friday, July 31, 2020 11:12 AM
To: 'Whittington, Chad/SAC' <Chad.Whittington@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC

<Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Thanks Chad. I was able to download the model successfully I have also saved a copy of the caveats to the same folder.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Sent: Friday, July 31, 2020 11:02 AM

To: Eric Leitterman <ELeitterman@valleywater.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Eric,

I have sent you a file transfer of the Scenario B Value Planning CalSim model (VP7). Let me know if you got the email titled "VP7 CalSim Study". It should include the following link to the transfer:

<https://jftt.jacobs.com/download.aspx?ID=3710cae8-bb90-4e81-955a-4262653d15ab&RID=049459e0-3fc3-4697-b7ba-b4413c71acc5>

This CalSim study (DCR2015_merge_SitesON_WaterFixOFF_CALSIM_DRAFT_11-25-19_P2b_1_5_scnB_1kPipe.7z) was developed for preliminary sensitivity analysis that was included in the Sites Project Value Planning Report, which evaluated conveyance facility sizing. This model was developed to evaluate the volume released from Sites under varying storage and conveyance capacities. It assumes a 1.5 MAF storage capacity, 1,000 cfs release capacity, and diversion criteria from Scenario B. The model assumes old Reclamation exchange logic that was used as a surrogate for the potential non-investment Reclamation exchange with no carry over storage. Consequently, it is not appropriate for detailed analysis of member deliveries or Shasta exchange. Additionally, all Value Planning sensitivity studies are based on a DCR2015 baseline. Future studies will be updated to reflect actions in the 2019 BiOps and 2020 SWP ITP.

Please let me know if you have any questions or trouble accessing the contents of this package.

Best,

Chad Whittington
Jacobs
Water Resources Engineer | BIAF

916.286.0354

Chad.Whittington@jacobs.com

2485 Natomas Park Dr., Suite 600

Sacramento, CA 95833

USA

www.jacobs.com

From: Eric Leitnerman <ELeitnerman@valleywater.org>

Sent: Wednesday, July 29, 2020 3:56 PM

To: Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Subject: [EXTERNAL] RE: Sites - CalSIM Model Request for Scenario B

Thanks Ali.

Chad, when you send us the model can you put it on an online drive (sharepoint, dropbox, etc) so we can download. I have a had issue with receiving zip files through my work email.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL

Imported Water Unit

Water Supply Division

Tel. (408) 630-2669 / Cell. (408) 784-4966

eleitnerman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

5750 Almaden Expressway, San Jose CA 95118

www.valleywater.org

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From: Alicia Forsythe <aforsythe@sitesproject.org>

Sent: Wednesday, July 29, 2020 3:06 PM

To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I've touched bases with CH2M and they can provide the Scenario B Calsim model this week. I've copied Chad Whittington from CH2M. Chad will be sending you the model. Along with the model, he will provide some of the underlying assumptions/caveats.

Please let us know if you have any questions on the model once you've received.

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: Alicia Forsythe
Sent: Tuesday, July 28, 2020 2:45 PM
To: Eric Leitterman <Eleitterman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I am checking with CH2M on this and will circle back to you shortly.

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: Eric Leitterman <Eleitterman@valleywater.org>
Sent: Tuesday, July 28, 2020 11:13 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Katrina Jessop <KJessop@valleywater.org>
Subject: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Valley Water would like a copy of the Scenario B Value Planning report CalSIM model so that we use it for inputs for our internal WEAP modeling of agency's operations. Is it possible to receive this information this week?

We recognize that summary results are available in the Value Planning Report but we need a greater level of detail for our WEAP inputs.

ERIC LEITTERMAN
ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

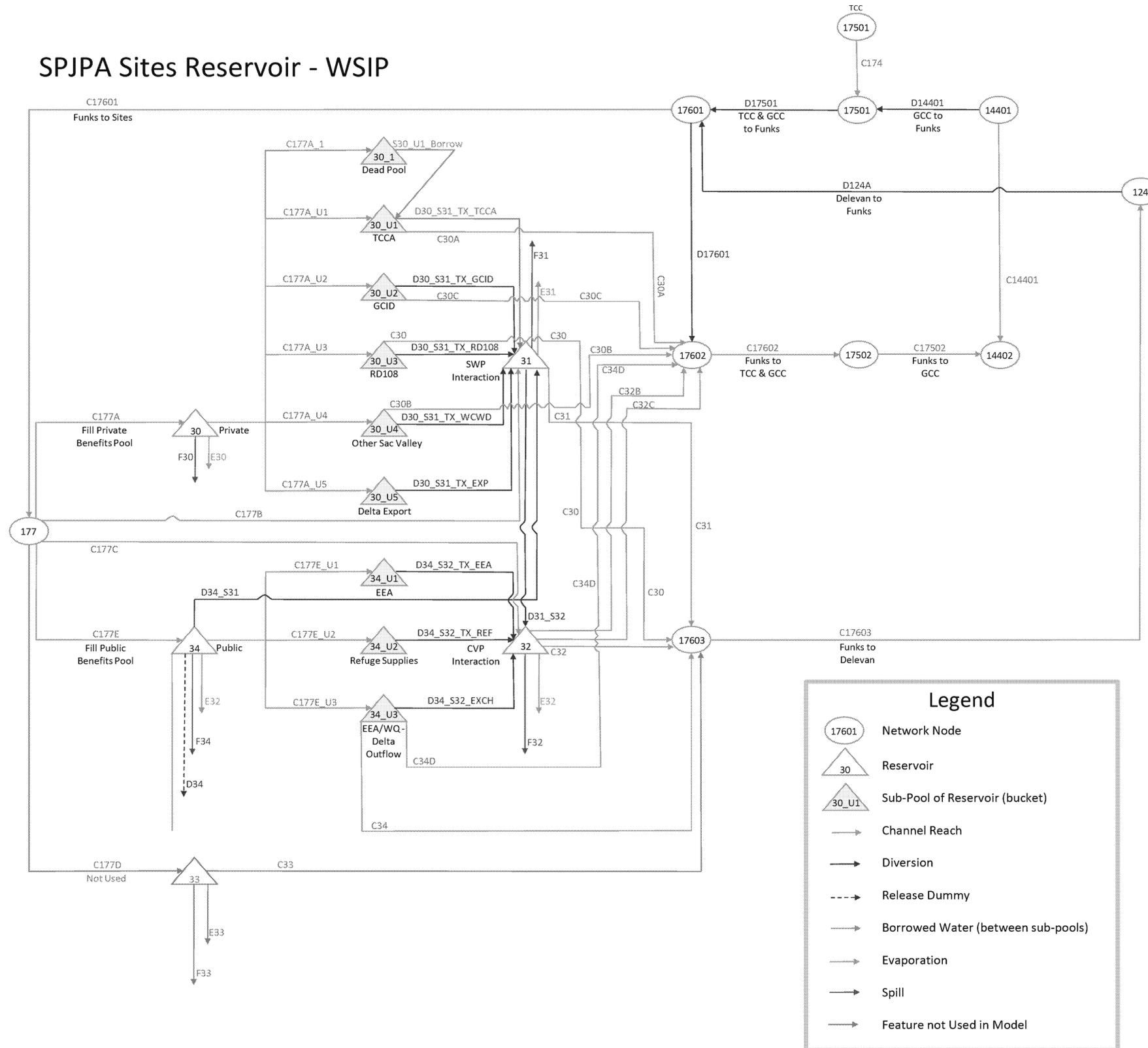
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5750 Almaden Expressway, San Jose CA 95118
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SPJPA Sites Reservoir - WSIP



From: Sullivan, Lauren R [lauren_sullivan@fws.gov]
Sent: 8/20/2020 12:51:04 PM
To: Cordova, Daniel A [dcordova@usbr.gov]; Spranza, John [John.Spranza@hdrinc.com]; Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Kundargi, Kenneth@Wildlife [Kenneth.Kundargi@wildlife.ca.gov]; matt.johnson@wildlife.ca.gov; kristal.davis-fadtke@wildlife.ca.gov; jonathan.williams [jonathan.williams@wildlife.ca.gov]; duane.linander@wildlife.ca.gov; La Luz, Felipe@Wildlife [felipe.laluz@wildlife.ca.gov]; Boyd, Ian@Wildlife [Ian.Boyd@Wildlife.ca.gov]; Nancy.A.Haley@usace.army.mil; Michael S. Jewell (michael.s.jewell@usace.army.mil) [michael.s.jewell@usace.army.mil]; Kevin.C.Lee@usace.army.mil
CC: Jerry Brown [jbrown@sitesproject.org]; Berryman, Ellen (Ellen.Berryman@icf.com) [Ellen.Berryman@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Kevin Spesert [ksperst@sitesproject.org]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; CFitzer@esassoc.com; Lecky, Jim [Jim.Lecky@icf.com]; Hendrick, Mike [Mike.Hendrick@icf.com]; jason.hassrick@icf.com; Carper, Mark A [mcarper@usbr.gov]; Martin, Nathaniel J [nmartin@usbr.gov]; Lassell, Susan (Susan.Lassell@icf.com) [Susan.Lassell@icf.com]; Risse, Danielle [Danielle.Risse@hdrinc.com]
Subject: Re: [EXTERNAL] Sites Project Permitting Update

Hi John,

Adding to what Dan just sent, if Sites Authority does pursue Section 10 for take coverage for operations from FWS and/or NMFS, Site will need more than a BA. HCP's have to have their own NEPA (rarely is a project's EIS/EIR fully adequate for development of an HCP, unless the needs of the HCP NEPA are incorporated into the project NEPA). The FWS has some information online about Section 10 for HCPs: <https://www.fws.gov/endangered/what-we-do/hcp-overview.html>. Also, we can schedule a meeting with the people who handle HCPs for FWS (and NMFS, if there will be potential take of their species) if you want to learn more about how an HCP might work for the Sites Project. The Services cannot make the call on whether take from Sites operations should be permitted under Section 7 or Section 10. That is a discussion that has to happen between Reclamation and the Sites Authority.

Lauren Sullivan

Fish & Wildlife Biologist
Watershed Planning Division

San Francisco Bay-Delta Fish & Wildlife Office
U.S. Fish & Wildlife Service
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814
(916) 930-5643 office*
lauren_sullivan@fws.gov

*I am working from home during the COVID-19 pandemic. All calls to my office phone are forwarding to my cellphone during this time.

From: Cordova, Daniel A <dcordova@usbr.gov>
Sent: Thursday, August 20, 2020 9:18 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov <matt.johnson@wildlife.ca.gov>; kristal.davis-fadtke@wildlife.ca.gov <kristal.davis-fadtke@wildlife.ca.gov>; jonathan.williams

<jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov <duane.linander@wildlife.ca.gov>; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil <Nancy.A.Haley@usace.army.mil>; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com <CFitzer@esassoc.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com <jason.hassrick@icf.com>; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
Subject: Re: [EXTERNAL] Sites Project Permitting Update

Hi John,

Thanks for the update. One item that caught my attention was the mention of a joint BA for the project. During previous efforts regarding this project Reclamation pointed out that, aside from providing funding for the construction of the dam, it would retain no discretionary Federal involvement or control over operations of the reservoir. In light of this, Reclamation previously recommended section 10 coverage with FWS regarding operations. Is the plan to use one BA for the necessary section 7 consultations and also to support a section 10 consultation?

Thanks,

Dan

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Friday, August 14, 2020 7:12 AM

To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kenneth.Kundargi <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov <matt.johnson@wildlife.ca.gov>; kristal.davis-fadtke@wildlife.ca.gov <kristal.davis-fadtke@wildlife.ca.gov>; jonathan.williams <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov <duane.linander@wildlife.ca.gov>; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil <Nancy.A.Haley@usace.army.mil>; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil <Kevin.C.Lee@usace.army.mil>

Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel A <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com <CFitzer@esassoc.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com <jason.hassrick@icf.com>; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

Subject: [EXTERNAL] Sites Project Permitting Update

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- Reservoir size will be reduced from 1.8 to 1.5 million acer-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- Delevan diversion, pipeline and outfall has been removed.
- Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
 - Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the *Preliminary Revised Draft EIR/EIS Alternatives* to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- A joint Draft BA in May 2021
- Two 2081 ITP applications by November 2021 (one operations and one construction)
- Draft 404 and 401 permit packages for a December 2021 submittal
- Draft 401 for a December 2021 submittal
- Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John
Sites Project Environmental Permitting Integration Lead

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: Tull, Robert/SAC [Robert.Tull@jacobs.com]
Sent: 8/20/2020 4:50:03 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Subject: RE: Sites - CalSIM Model Request for Scenario B

We will review and draft a response

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, August 19, 2020 1:53 PM
To: Tull, Robert/SAC <Robert.Tull@jacobs.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: [EXTERNAL] FW: Sites - CalSIM Model Request for Scenario B

I haven't read this yet, but thought I would send it on so folks can read and we can start thinking about how to respond.

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: Eric Leitnerman <ELeitnerman@valleywater.org>
Sent: Wednesday, August 19, 2020 1:03 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Katrina Jessop <Kjessop@valleywater.org>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Thanks again for facilitating the delivery of the VP7 model to Santa Clara. I spent some time looking through the files and I have some follow up questions for the CH2M-Jacobs consultants that I was hoping you could relay.

Based on the attached schematic previously provided to me by Rob Leaf, it looks like model deliveries at Funks to the Sites Participants equals the combined flows of C30 + C30A + C30B + C30C + C31. Similarly the combined flows of C32 + C32B + C32C + C34D would be the public benefit share of releases. Is this correct?

If so then appears that the participant share of releases is only 129 TAF as opposed to the 203 TAF reported in the Value Planning Report. However, the combined total of all flows (C30 + C30A + C30B + C30C + C31 + C32 + C32B + C32C + C34D) is 242 TAF, about the same as is in the Value Planning Report. Does this have something to do with maintaining the old Reclamation exchange logic as a surrogate for a potential non-investment Reclamation exchange with no carry over storage? Does this mean that the 40 TAF/203 TAF split between public benefits and participating water agency benefits in the Value Planning Report is a post-processing split?

If all of the above is correct, does that make it inappropriate to calculate SOD participant share based a post-processing analysis of the change in total exports (D419_SWP + D419_CVP + D418).

Based on what I have said above does it sound like I received the correct copy of the model? I am pretty sure I did, but figured it couldn't hurt to double check.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

Clean Water · Healthy Environment · Flood Protection

From: Eric Leitterman

Sent: Friday, July 31, 2020 11:12 AM

To: 'Whittington, Chad/SAC' <Chad.Whittington@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <Kjessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Thanks Chad. I was able to download the model successfully I have also saved a copy of the caveats to the same folder.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



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5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Sent: Friday, July 31, 2020 11:02 AM

To: Eric Leitterman <Eleitterman@valleywater.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop

<KJessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Eric,

I have sent you a file transfer of the Scenario B Value Planning CalSim model (VP7). Let me know if you got the email titled "VP7 CalSim Study". It should include the following link to the transfer:

<https://ifft.jacobs.com/download.aspx?ID=3710cae8-bb90-4e81-955a-4262653d15ab&RID=049459e0-3fc3-4697-b7ba-b4413c71acc5>

This CalSim study (DCR2015_merge_SitesON_WaterFixOFF_CALSIM_DRAFT_11-25-19_P2b_1_5_scnB_1kPipe.7z) was developed for preliminary sensitivity analysis that was included in the Sites Project Value Planning Report, which evaluated conveyance facility sizing. This model was developed to evaluate the volume released from Sites under varying storage and conveyance capacities. It assumes a 1.5 MAF storage capacity, 1,000 cfs release capacity, and diversion criteria from Scenario B. The model assumes old Reclamation exchange logic that was used as a surrogate for the potential non-investment Reclamation exchange with no carry over storage. Consequently, it is not appropriate for detailed analysis of member deliveries or Shasta exchange. Additionally, all Value Planning sensitivity studies are based on a DCR2015 baseline. Future studies will be updated to reflect actions in the 2019 BiOps and 2020 SWP ITP.

Please let me know if you have any questions or trouble accessing the contents of this package.

Best,

Chad Whittington
Jacobs
Water Resources Engineer | BIAF
916.286.0354
Chad.Whittington@jacobs.com

2485 Natomas Park Dr., Suite 600
Sacramento, CA 95833
USA
www.jacobs.com

From: Eric Leitterman <ELeitterman@valleywater.org>

Sent: Wednesday, July 29, 2020 3:56 PM

To: Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Subject: [EXTERNAL] RE: Sites - CalSIM Model Request for Scenario B

Thanks Ali.

Chad, when you send us the model can you put it on an online drive (sharepoint, dropbox, etc) so we can download. I have a had issue with receiving zip files through my work email.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL

Imported Water Unit

Water Supply Division

Tel. (408) 630-2669 / Cell. (408) 784-4966

eleitterman@valleywater.org



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5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, July 29, 2020 3:06 PM
To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I've touched bases with CH2M and they can provide the Scenario B Calsim model this week. I've copied Chad Whittington from CH2M. Chad will be sending you the model. Along with the model, he will provide some of the underlying assumptions/caveats.

Please let us know if you have any questions on the model once you've received.

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: Alicia Forsythe
Sent: Tuesday, July 28, 2020 2:45 PM
To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I am checking with CH2M on this and will circle back to you shortly.

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: Eric Leitterman <[ELeitterman@valleywater.org](mailto:eleitterman@valleywater.org)>
Sent: Tuesday, July 28, 2020 11:13 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Katrina Jessop <Kjessop@valleywater.org>
Subject: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Valley Water would like a copy of the Scenario B Value Planning report CalSIM model so that we use it for inputs for our internal WEAP modeling of agency's operations. Is it possible to receive this information this week?

We recognize that summary results are available in the Value Planning Report but we need a greater level of detail for our WEAP inputs.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



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Sent: 8/21/2020 8:13:09 AM
Subject: FW: Presentations for this morning's meeting.
Attachments: FLAG.pptx; 02-01 P Amendment 2 Work Plan.pptx; 03-01P Key Comments from NGO.pptx; 03-03P Participation Update.pptx; 03-04P Engineering Feasibility Approach.pptx

From: Marcia Kivett

Sent: Friday, August 21, 2020 7:48 AM

To: White, Drew <Drew.White@hdrinc.com>; JP Robinette <JRobinette@BrwnCald.com>

Cc: Erin Heydinger <Erin.Heydinger@hdrinc.com>

Subject: Presentations for this morning's meeting.

Drew,

- JP will share his screen and present 02-01P and 03-03P.
- Henry has 03-04P and he wants you to take care of the slides.
- Ali has 03-01P and I have a text to her asking if she wants to share or if she wants you to handle it.

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

**RESERVOIR COMMITTEE
AGENDA ITEM 3.1**

**KEY COMMENTS FROM
CONSERVATION ORGANIZATIONS
AND PLAN FOR ADDRESSING THEM
JUNE 2020**



Draft - Predecisional Working Document - For Discussion Purposes Only

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Overview

- Authority and Reclamation received 11 comment letters from conservation organizations on the 2017 Draft EIR/EIS
- Authority is proactively addressing the concerns raised in these comment letters in the development of the Revised EIR/Supplemental EIS
- Staff will begin reaching out to commenters in October to discuss their comments and how we plan to address them

Background

- Authority and Reclamation released Draft EIR/EIS in August 2017 for public comment
- Comment period closed in January 2018
- 137 comment letters were received, 11 of which were from conservation organizations

Current Efforts

- Staff has begun work on the preparation of the Revised EIR/Supplemental EIS
- Staff and consultant team has reviewed all comments on the 2017 Draft EIR/EIS
- Why do these previous comments matter? Not required to respond to them, but want to . . .
 - Proactively address concerns
 - Improve the Project and EIR/EIS analysis
 - Be responsive to all parties
 - Get ahead of issues and address them early

Comments / Issues Raised

- Project description and range of alternatives
- Modeling approach, modeling baseline, and modeling analysis
- Operational impacts to fisheries
- Impacts to Trinity River resources
- Indian Trust Assets and impacts to Tribal Cultural Resources
- Impacts to terrestrial species
- Water quality
- Water rights
- Geotechnical and geological data and seismicity
- Cumulative impacts

Addressed Thru . . .

- Revisions to the project description to incorporate changes as a result of Value Planning
 - Develop more specifics on items (i.e., Reservoir Management Plan, Operations Plan and operational criteria, releases to Funks and Stone Corral creeks)
- Clarify baseline / existing conditions / No Action
- Clarify study areas for resource sections
- Update throughout with new information and analyses (i.e., water quality, air quality, Tribal cultural resources, terrestrial)
- Update hydrologic modeling and fisheries analyses based on new information
- Clearly identify and support that there will be no negative impacts to the Trinity River and its resources
- Closely look at impacts of the revised project along with mitigation measures to ensure they are specific, robust, supported by evidence, and address the driving factors
- Improve organization, layout and make reader friendly

Next Steps

- Continue development of the Revised EIR/Supplemental EIS
- Staff will begin reaching out to commenters in October to discuss their comments and how we plan to address them in the development of the Revised EIR/Supplemental EIS

RESERVOIR COMMITTEE MEETING

AUGUST 21, 2020

AMENDMENT 2 OUTREACH UPDATE



Reservoir Committee Meeting, August 21, 2020 - Draft, Subject to Change

PARTICIPATION UPDATE (UPDATED

8/20/2020)

Participant	Amendment 2 Agreement Status	Phase 2 (2019) Level (Ref, AF)	Participation Level (AF) Staff Recommendation	Variance (AF)	Increase Interest (AF)
Antelope Valley East Kern WA		500	500	0	
Carter Mutual Water Company		300	300	0	
City of American Canyon	To City Council Aug 18	4,000	4,000	0	
Coachella Valley Water District	Approved	10,000	10,000	0	
Colusa County	Approved	10,000	10,000	0	
Colusa County WD**	Current Landowners at 6,000AF	11,975	6,000	-5,975	Possibly
Cortina WD		450	450	0	
Davis Water District	To Board first week of August	2,000	2,000	0	
Dunnigan WD	Approved	2,717	2,717	0	
Desert WA	Approved	6,500	6,500	0	
Glenn Colusa Irrigation District	Approved	5,000	5,000	0	
LaGrande Water District		1,000	1,000	0	
Metropolitan Water District of Southern California	To Board in October	50,000	50,000	0	
RD-108	Approved	4,000	4,000	0	

Continued on next slide

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Reservoir Committee Meeting, August 21, 2020 - Draft, Subject to Change

Thank everyone for their responses.

We would like to do a survey today

Continued from previous slide

Participant	Amendment 2 Agreement Status	Phase 2 (2019) Level (Ref, AF)	Participat ion Level (AF) Staff Recommendation	Variance (AF)	Increase Interest (AF)
San Bernardino Valley Municipal Water District	Approved	21,400	21,400	0	
San Geronimo Pass Water Agency	10,000AF SGPWA Approved, 4,000 AF Retailer TBD	14,000	14,000	0	
Santa Clara Valley WD*	No Board Date Set	16,000	7,800	-8,200	
Santa Clarita Valley Water Agency	Approved	5,000	5,000	0	
Westside W.D.**	2,000 Approved	15,000	2,000	-13,000	Possibly
Zone 7 Water Agency	Approved	10,000	10,000	0	
Wheeler Ridge-Maricopa WSD	Approved	3,050	3,050	0	
Other San Joaquin Valley Interested Participants	Attended Wheeler Ridge Workshop Jul 27	0	0	0	10,000
Total		192,892	165,717	-27,175	10,000

***This is staff's recommendation to the Water Storage Exploratory Committee. A recommendation to the Board is pending feedback from the committee*

**Indicated possibility for higher participation, lower projected participation level shown*

Reduced Participation Work Plan Impact

Potential reduction in participation of 20,000 AF reduces revenue ~\$2M

1. Program remains cash positive, schedule is maintained
2. 50/50 cost share with the state is maintained
3. Second cash call likely close to full \$40 / AF

Speaker: JP

Staff has taken a look at a scenario of reduced participation of 20,000 AF.

Contributed Credit Correction

1. August 2019 correction to \$48.50 / AF for all participants approved.
2. Treasurer recommendation: participants who did not reduce at end of Phase 1 will be invoiced this month.

Participant	Owed
American Canyon	\$ 4,988.20
County of Colusa	\$ 16,627.34
Desert Water	\$ 9,258.93
MET	\$ 41,568.35
San Geronio	\$ 19,942.83
Santa Clarita	\$ 7,122.32
Cortina	\$ 498.82
Davis	\$ 3,325.47
LaGrande	\$ 1,662.73
Total	\$ 104,994.99

Reservoir Committee Item 2.1b, August 21, 2020 - Draft, Subject to Change

8

Speaker: JP

Serves as a reminder and we will take direction on this approach if applicable

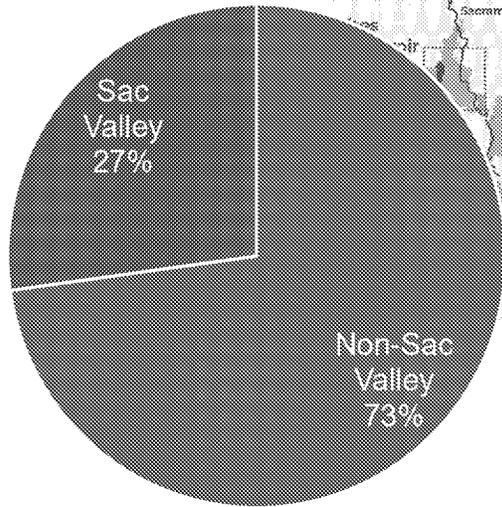
BULLPEN



Plan for Control the Following: August 21, 2000 - Draft - Subject to Change

GEOGRAPHIC BALANCE

Current Participation Levels

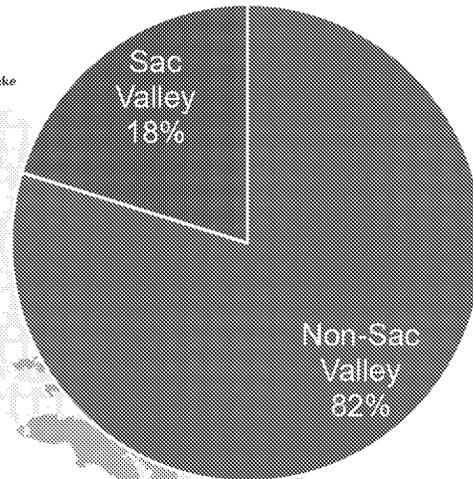


Total: 192,892

7

Authority Board Meeting, June 22, 2020 - Draft, Subject to Change

Amend 2 Projected Participation
(Participant Staff Recommended +
Additional Interest)



Total: 188,917

Projections include some important assumptions:

Conservative values used (worst cases) for Sac Valley reductions. (Westside doesn't increase beyond their board position of 2,000AF)

Participants who have not responded will maintain existing participation levels.

Other interested parties, which are both outside of the Sac Valley, pick up around 15,000 AF.

**RESERVOIR COMMITTEE
AGENDA ITEM 3.4
ENGINEERING FEASIBILITY APPROACH**

AUGUST 21, 2020



Reservoir Committee Meeting, August 21, 2020 – Draft, Subject to Change

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Improved Cost Estimate Certainty

- Value planning efforts resulted in an estimated project cost savings of over \$2 Billion
- Progression of feasibility design has resulted in identification of technical data gap that may influence design assumptions and project cost estimate
- A high-level gap analysis was prepared on the focus areas that may have the greatest near-term impact on project feasibility and cost certainty

Reservoir Committee Meeting, August 21, 2020 -- Draft, Subject to Change



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Improved Cost Estimate Certainty: Geologic and geotechnical data

- Uncertainty
 - Feasibility design and assumptions are currently based on limited historical geologic and geotechnical data
- Implications
 - Insufficient geologic and geotechnical data may misinform design approach, which affects project cost and affordability certainty
- Mitigation Strategy
 - Staff is coordinating with the Bureau of Reclamation for support of additional geologic and geotechnical investigations to inform and verify feasibility design

Reservoir Committee Meeting, August 21, 2020 – Draft, Subject to Change



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Improved Cost Estimate Certainty: Colusa Basin Drain (CBD) Feasibility

- Uncertainty
 - It has not been verified if the CBD can accommodate project releases of up to 1,000 cfs
 - If the CBD cannot accommodate project flows, then alternative project features will need to be design and constructed for releases to the Sacramento River
- Implications
 - Difference in cost certainty between the alternatives
- Mitigation Strategy
 - The engineering team is currently preparing a hydraulic model of the CBD to verify conveyance capacity and identify potential hydraulic impacts

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Improved Cost Estimate Certainty: Emergency Drawdown and Release Impacts

- Uncertainty
 - Regulatory requirements for emergency drawdown releases may result in localized flooding, but the extent is currently unknown
- Implications
 - The need for flood easements and/or impacts mitigation may increase project cost
- Mitigation Strategy
 - As part of upcoming Phase 2 work, the engineering team will perform a flood analysis of the release areas to determine the extent of impacts due to emergency drawdown releases
 - This analysis will inform requirements for coordination with property owners to obtain flood easements and/or refine project components



Reservoir Committee Meeting, August 21, 2020 -- Draft, Subject to Change

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Improved Cost Estimate Certainty: Power Transmission and Delivery

- Uncertainty
 - Pacific Gas & Electric (PG&E)
 - Potential transmission and power delivery provider
 - Western Area Power Administration (WAPA)
 - Can provide transmission, but no capacity for power delivery
 - There has been minimal coordination for interconnection with PG&E or WAPA facilities
- Implications
 - There is insufficient data regarding PG&E and WAPA facilities to inform design and cost estimates for project interconnection
- Mitigation Strategy
 - Staff has initiated contact with PG&E and WAPA. Next steps include submitting interconnection application with PG&E and WAPA to perform required studies that will inform facilities design and cost estimates

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Improved Cost Estimate Certainty: Salt Lake

- Uncertainty
 - Saline water has been observed to seep from underground springs in the vicinity of the valley floor within the proposed inundation area of Sites Reservoir
 - Forms Salt Lake
 - Wetted area is seasonal and varies from 0 to 30 acres
- Implications
 - Mitigation measures for Salt Lake may be required for regulatory approvals
 - Affects permit ability and cost certainty
- Mitigation Strategy
 - The project team is working on identifying mitigation approaches to present for regulatory concurrence

Reservoir Committee Meeting, August 21, 2020 – Draft, Subject to Change



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Improved Cost Estimate Certainty: Agency Coordination and Review

- Uncertainty
 - DWR DSOD approvals
 - Geotechnical investigation work plan
 - Design criteria / dam type selection
- Implications
 - DWR DSOD concurrence of jurisdictional project features are required for project acceptance
- Mitigation Strategy
 - The engineering team will develop and execute an engagement plan with DWR DSOD as part of the upcoming Phase 2 work
 - Early engagement will assist with expediting reviews and acceptance of project features
 - Provide better assurance of cost certainty as part of early design efforts

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Improved Cost Estimate Certainty

- Operations and Engineering Workgroup identified an additional consideration – material needs and source sufficiency
- Focus areas will be priority for the upcoming Phase 2 work
- A well-developed feasibility study is essential for obtaining project cost certainty and affordability

Reservoir Committee Meeting, August 21, 2020 – Draft, Subject to Change



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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/21/2020 9:06:37 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Subject: RE: [EXTERNAL] Sites Project Permitting Update
Attachments: Re: [EXTERNAL] Sites - NMFS / CDFW Joint Meeting; Discussion point for response to Cordova e-mail re discretion 10_24_19.docx

Ali,

Jim and Monique reminded me about the briefing that Jim put together last year in response to Dan's email in October where he first broached the question of 50 CFR 402.03 and the potential need for congressional approval of the project prior to Section 7 consultation. This did go out to a limited number of agency staff but not in the same manner and volume as yesterdays.

Just want to make sure you have the complete story here.

John

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Friday, August 21, 2020 6:56 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: [EXTERNAL] Sites Project Permitting Update

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.

Thanks John. I am talking to Jerry today on this and will circle back with you this afternoon.

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: Thursday, August 20, 2020 5:03 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: [EXTERNAL] Sites Project Permitting Update

Please use the below version, I have updated the FAA language to match the executed version.

John Spranza

From: Spranza, John
Sent: Thursday, August 20, 2020 4:55 PM
To: aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Cc: Erin Heydinger (Erin.Heydinger@hdrinc.com) <Erin.Heydinger@hdrinc.com>
Subject: FW: [EXTERNAL] Sites Project Permitting Update

Hi Ali,

I know that this email mail chain is on your radar and wanted to give you some items to consider in discussions with Jerry and the members should it come up.

- 1) Dan Cordova has never formally brought forth a request to Sites to consider permitting the operations of Sites reservoir under anything other than Section 7 of the ESA. There were some discussions in workshops and phone calls, but nothing formal, and certainly nothing that has been sent out to other agencies as has been done with his Reply All to the email.
- 2) As you know, Section 7 is the streamlined federal-to-federal consultation process under ESA, and is undertaken when there is a federal lead in a project that needs clearances under the federal ESA. What Dan is implying is that Reclamation has no federal interest in the operations of the Sites Project, and that the Authority will need to consult with the USFWS and NMFS for operation of Sites under Section 10 of the ESA, which requires the preparation of a Habitat Conservation Plan (HCP).
- 3) Preparation of a HCP for project operations will take 3-6+ years, and would essentially kill the project as we would not have permit certainly the members need before Amendment 3 and it would push the permitting and construction schedule out past the WISP and WIIN Act funding deadlines.
- 4) Reclamation will be issuing a Warren Act Contract to the project, modifying federal conveyance facilities (TC Canal and Funks Reservoir) and modifying the place of use and/or point of diversion to their existing CVP water rights for the diversion of CVP water to, and use in/by Sites Reservoir. These are discretionary actions by Reclamation that would establish them as a clear federal lead of a Section 7 consultation for Sites operations. We have brought this up to Reclamation staff, including Dan on several occasions.
- 5) We had discussed consultation under Section 7 with Mike Dietl, and then with Ryan Davis and Kellye Kennedy. None of them had mentioned anything other than a Section 7 consultation process for the entirety of the project. In fact, there was some concern raised that an independent HCP that could affect CVP operations is not something that would be agreeable to Reclamation.
- 6) To ensure that Section 7 was initiated on the entirety of the project (construction and operations), Ryan, Erin and I included language in the Project's Financial Assistance Agreement stating that Reclamation will, "serve as the Federal lead for ESA and Section 106 consultations." Dan's statement directly conflicts with this finalized agreement.
- 7) Dan, having Replied to All with his email, is continuing the confrontational and isolationist approach to working with the Authority that we have seen with geotechnical permitting, and intended to make his point of view known to the entirety of the 27 recipients on the agency update. This was unnecessary as he could have raised his concerns with any one of the Sites team more discretely. His reply has prompted additional emails from regulatory agency staff raising additional concerns about how the project is going to be permitted and what the actual plan and schedule is.

I'd be happy provide additional input or discuss any of the above points.

John

John Spranza

From: Sullivan, Lauren R [mailto:lauren_sullivan@fws.gov]

Sent: Thursday, August 20, 2020 12:51 PM

To: Cordova, Daniel A <dcordova@usbr.gov>; Spranza, John <John.Spranza@hdrinc.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov; kristal.davis-fadtke@wildlife.ca.gov; jonathan.williams <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil

Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

Subject: Re: [EXTERNAL] Sites Project Permitting Update

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,

Adding to what Dan just sent, if Sites Authority does pursue Section 10 for take coverage for operations from FWS and/or NMFS, Site will need more than a BA. HCP's have to have their own NEPA (rarely is a project's EIS/EIR fully adequate for development of an HCP, unless the needs of the HCP NEPA are incorporated into the project NEPA). The FWS has some information online about Section 10 for HCPs: <https://www.fws.gov/endangered/what-we-do/hcp-overview.html>. Also, we can schedule a meeting with the people who handle HCPs for FWS (and NMFS, if there will be potential take of their species) if you want to learn more about how an HCP might work for the Sites Project. The Services cannot make the call on whether take from Sites operations should be permitted under Section 7 or Section 10. That is a discussion that has to happen between Reclamation and the Sites Authority.

Lauren Sullivan

Fish & Wildlife Biologist
Watershed Planning Division

San Francisco Bay-Delta Fish & Wildlife Office

U.S. Fish & Wildlife Service
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814
(916) 930-5643 office*
lauren_sullivan@fws.gov

*I am working from home during the COVID-19 pandemic. All calls to my office phone are forwarding to my cellphone during this time.

From: Cordova, Daniel A <dcordova@usbr.gov>

Sent: Thursday, August 20, 2020 9:18 AM

To: Spranza, John <John.Spranza@hdrinc.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov <matt.johnson@wildlife.ca.gov>; kristal.davis-fadtke@wildlife.ca.gov <kristal.davis-fadtke@wildlife.ca.gov>; jonathan.williams@wildlife.ca.gov <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov <duane.linander@wildlife.ca.gov>; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil <Nancy.A.Haley@usace.army.mil>; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil <Kevin.C.Lee@usace.army.mil>

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Subject: Re: [EXTERNAL] Sites Project Permitting Update

Hi John,

Thanks for the update. One item that caught my attention was the mention of a joint BA for the project. During previous efforts regarding this project Reclamation pointed out that, aside from providing funding for the construction of the dam, it would retain no discretionary Federal involvement or control over operations of the reservoir. In light of this, Reclamation previously recommended section 10 coverage with FWS regarding operations. Is the plan to use one BA for the necessary section 7 consultations and also to support a section 10 consultation?

Thanks,

Dan

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Friday, August 14, 2020 7:12 AM

To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kenneth.Kundargi <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov <matt.johnson@wildlife.ca.gov>; kristal.davis-fadtke@wildlife.ca.gov <kristal.davis-fadtke@wildlife.ca.gov>; jonathan.williams@wildlife.ca.gov <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov <duane.linander@wildlife.ca.gov>; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil <Nancy.A.Haley@usace.army.mil>; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil <Kevin.C.Lee@usace.army.mil>

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Subject: [EXTERNAL] Sites Project Permitting Update

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Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

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- Delevan diversion, pipeline and outfall has been removed.
- Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
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 - Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the *Preliminary Revised Draft EIR/EIS Alternatives* to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- A joint Draft BA in May 2021
- Two 2081 ITP applications by November 2021 (one operations and one construction)
- Draft 404 and 401 permit packages for a December 2021 submittal
- Draft 401 for a December 2021 submittal
- Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021

- Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/24/2020 8:57:41 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]
CC: Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]; Larson, Ryan T CIV USARMY CESPCK (USA) [Ryan.T.Larson2@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update

Nancy,
Let me check with my team on this. Are you thinking this would be the "formal" pre-app or the initial meeting to review methods and approach for the delineation as discussed below?

Also, what date do you have on the delineation you were referencing?

Thanks.
John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Monday, August 24, 2020 8:49 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

Do you have an idea of when you will be ready for a pre-application meeting? Matthew is going to look at your old delineation to see how it compares to the new NWPR so we have some sort of idea what we are looking at for a PJD, AJD or AR verification.

Thanks - Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 11:13 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Reclamation will be releasing a Supplemental EIS that will have all the changes included. Their alternatives that they have included in the final Feasibility Study that is due to be acted on by end of year bookends our "right-sized" locally preferred project. So, that will be how the S EIS gets updated and addresses the preferred project.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 9:19 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

Subject: RE: Sites Project Permitting Update

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Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 9:14 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 8:41 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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Thanks John,

I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.

Nancy

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 8:27 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Hi Nancy,

We are planning to have ICF perform a delineation to support the permit application packet in 2021. I have Mike Vondergeest leading that up, and we are just waiting for our September 1 funding date to kick that off.

Our intention is to begin meeting with you and your staff in fall of 2020 to consult on the process and review the proposed methods and approach. We anticipate that we will not have access to the majority of the site so we are going to have to use significant imaging, LIDAR, selected surveys in areas where we do have access and groundtruthing.

Mike has a draft agenda already prepped, and soon after Sept 1 we will send that over for your review and comment and start scheduling the pre-app meetings.

We're looking forward to getting this started and will have our funding in place through 2021. Please let me know if you would like any background data on the project and we can share that with you and your staff.

John

John Spranza

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 7:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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Hi John,

We have not completed a Jurisdictional Determination on this project as of yet have we? Either way, we will need to see what exactly our jurisdiction would be for this project.

Thanks - Nancy

Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 7:12 AM
To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.Williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
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Regards,

John

Sites Project Environmental Permitting Integration Lead

John Spranza, MS, CCN

Senior Ecologist / Regulatory Specialist

HDR

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D 916.679.8858 M 818.640.2487
john.spranza@hdrinc.com <mailto:john.spranza@hdrinc.com>

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2Ffollow-
us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7C433946eebf844791a48b08d8484549e1%7C3667e201cbdc48b39b42
5d2d3f16e2a9%7C0%7C0%7C637338809722358228&data=wc%2B8cSNTMVSkoauHwL5ygQnL0TLd8mmsqGrtmbo6XFI%3D&
reserved=0>

From: Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]
Sent: 8/24/2020 9:42:44 AM
To: Spranza, John [John.Spranza@hdrinc.com]; Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]
CC: Larson, Ryan T CIV USARMY CESPCK (USA) [Ryan.T.Larson2@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

John,
Would you be able to send the previous delineation. I am currently working at home in response to the COVID pandemic and do not have the hard file. If you can email it to me so I could have a better understanding of it. I would really appreciate it. Thank you very much for your help.

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Monday, August 24, 2020 8:58 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Nancy,
Let me check with my team on this. Are you thinking this would be the "formal" pre-app or the initial meeting to review methods and approach for the delineation as discussed below?

Also, what date do you have on the delineation you were referencing?
Thanks.
John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Monday, August 24, 2020 8:49 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

Do you have an idea of when you will be ready for a pre-application meeting? Matthew is going to look at your old delineation to see how it compares to the new NWPR so we have some sort of idea what we are looking at for a PJD, AJD or AR verification.

Thanks - Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 11:13 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Reclamation will be releasing a Supplemental EIS that will have all the changes included. Their alternatives that they have included in the final Feasibility Study that is due to be acted on by end of year bookends our "right-sized" locally preferred project. So, that will be how the S EIS gets updated and addresses the preferred project.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 9:19 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: Sites Project Permitting Update

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Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 9:14 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 8:41 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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Thanks John,

I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.

Nancy

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 8:27 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Hi Nancy,

We are planning to have ICF perform a delineation to support the permit application packet in 2021. I have Mike Vondergeest leading that up, and we are just waiting for our September 1 funding date to kick that off.

Our intention is to begin meeting with you and your staff in fall of 2020 to consult on the process and review the proposed methods and approach. We anticipate that we will not have access to the majority of the site so we are going to have to use significant imaging, LIDAR, selected surveys in areas where we do have access and groundtruthing.

Mike has a draft agenda already prepped, and soon after Sept 1 we will send that over for your review and comment and start scheduling the pre-app meetings.

We're looking forward to getting this started and will have our funding in place through 2021. Please let me know if you would like any background data on the project and we can share that with you and your staff.

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 7:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

We have not completed a Jurisdictional Determination on this project as of yet have we? Either way, we will need to see what exactly our jurisdiction would be for this project.

Thanks - Nancy

Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 7:12 AM
To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
Subject: [Non-DoD Source] Sites Project Permitting Update

Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants,

including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- * Reservoir size will be reduced from 1.8 to 1.5 million acer-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- * Delevan diversion, pipeline and outfall has been removed.
- * Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- * Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- * Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- * Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- * Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
 - o Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - o Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- * No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the Preliminary Revised Draft EIR/EIS Alternatives to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- * A joint Draft BA in May 2021
- * Two 2081 ITP applications by November 2021 (one operations and one construction)
- * Draft 404 and 401 permit packages for a December 2021 submittal
- * Draft 401 for a December 2021 submittal
- * Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- * Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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 <mailto:john.spranza@hdrinc.com>

hdrinc.com/follow-us
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CLASSIFICATION: UNCLASSIFIED

Sites-Reclamation Operations Scenarios Briefing Memorandum



To: Richard Welsh, Principal Deputy Regional Director
Bureau of Reclamation

Date: August 25, 2020

From: Jerry Brown, Executive Director
Sites Project Authority

The purpose of this briefing paper is to provide an update on the Sites Project Authority's (Authority) assumptions related to federal investment in the Sites Reservoir Project (project) and the corresponding operations assumptions that will be included in the Revised EIR / Supplemental EIS.

1.0 Key Takeaways

- ∞ The Authority has completed a value planning effort to "right size" the project based on participation levels, costs, and discussions with regulatory agencies.
- ∞ There are differences in the assumptions contained in the Authority's value planning project and the Bureau of Reclamation's (Reclamation's) Feasibility Report. These differences will be bridged primarily by the Authority in future work performed over the next year.
- ∞ The Authority is evaluating two options for Reclamation participation:
 - Reclamation as an investor with a dedicated storage capacity share in Sites Reservoir; and,
 - Reclamation as an operating and exchange partner without a financial investment in Sites Reservoir
- ∞ There are benefits to Reclamation in federal participation in the project under both an investor and non-investor scenario.

2.0 Background

The Authority underwent a Value Planning process to "right size" the project. To assess project costs without federal investment and more fully assess the affordability of the project should congressional appropriation not occur in a timely manner, the Value Planning Report did not include federal investment and did not include the resulting dedicated water storage account for Reclamation. Based on the Value Planning Report, the Authority, in working with Reclamation is now preparing a Draft Revised EIR / Supplemental EIS, expected to be released in July 2021.

3.0 Discussion

The Authority recognizes the benefit of Reclamation's participation in the project. The Draft Revised EIR / Supplemental EIS will include analysis both with Reclamation as a storage investor and Reclamation as an exchange partner only (no federal investment). Under both scenarios, collaboration between the Authority and Reclamation will be essential for the project's success as well as ensuring the project does not harm the Central Valley Project (CVP) or its contractors (including CVP preference power customers). These two options are described in more detail below.

Status: Working draft, pre-decisional
Filename: INT-TMS-SitesOpsBriefing-20200625
Notes:

Phase: 2 Revision:
Date: August 25, 2020
Page: 1 of 2

3.1 Reclamation as a Storage Investor

The current funding mechanism for the federal government to invest in the project is through the WIIN Act. While Reclamation's Final Feasibility Report includes a finding of federal interest and an assumption of federal funding of 25 percent - up to \$1.8 billion – the WIIN Act funding currently available is approximately \$600 million, which will need to be allocated among several projects in the seventeen Reclamation states. Because of the uncertainty of the future availability of WIIN Act funds, especially funds on the order of a full 25% investment, along with the risk associated with relying on congressional allocation of those funds to specific projects, the Authority is using more conservative assumptions for federal funding.

The Authority believes that a more reliable and achievable federal investment in the project is \$200 million. Under the Recommended Project in the Value Planning Report, a \$200 million federal investment would fund about 6.6% of the Project, resulting in a capacity share of approximately 15,000 AF representing average annual deliveries (i.e., new water) and total storage volume of approximately 91,000 AF in Sites Reservoir.

Water in Reclamation's allocated storage space in Sites Reservoir could be used at Reclamation's discretion in the manner generally described in Reclamation's Final Feasibility Report, subject to operating constraints, permitting requirements, and the terms of a contract with the Authority.

3.2 Reclamation as an Exchange Partner

The Authority is also considering the possibility of Reclamation as an exchange partner only (no federal investment and no storage allocated to Reclamation in Sites Reservoir) in the Revised EIR / Supplemental EIS analysis. Under the exchange, the Authority would initiate an exchange when pre-determined conditions are met and would provide Sites Reservoir stored water to CVP customers that would normally be supplied by releases from Shasta Lake. Releasing this water from Sites Reservoir reduces drawdown from Shasta Lake during the spring and summer, allowing Reclamation to preserve the cold-water pool into the later months. An equivalent amount of water that was provided to CVP customers in the spring and summer via Sites Reservoir would be released from Shasta Lake in the fall and flow south of the Delta to Sites participants (either Sites SWP or CVP participants). An agreement would be reached on an appropriate monitoring and reporting system to ensure proper accounting of the transaction.

This exchange benefits both the Authority and Reclamation as follows:

- ∞ For Reclamation, an exchange would provide measurably improved cold water available later in the year, which is essential to improve conditions for spawning salmon. Exchanges are most likely to take place during dry and critically dry year types, periods when small increments of additional cold water can be most effective and needed. Preliminary analysis of the exchange indicates an average of 60,000 AFY water available for exchange that can reduce winter-run Chinook salmon mortality of 4.5 to 5 percent in years an exchange occurs.
- ∞ For the Authority, the exchange serves to extend the delivery window of the project to meet participants' demands in dry years which is the peak demand of the project. The longer period of deliveries means project conveyance features can be smaller, thereby avoiding project capital costs.

4.0 Position of Interested Parties

The Authority is committed to continued collaboration with Reclamation with the goal of federal participation as a storage investor. However, whether Reclamation is an investor in the project or is participates solely as an exchange partner, the analysis performed by the Authority demonstrates that there are quantifiable benefits to Reclamation in either scenario.

Sites-Reclamation Operations Scenarios Briefing Memorandum



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Bureau of Reclamation

Date: August 25, 2020

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Status: Working draft, pre-decisional
Filename: INT-TMS-SitesOpsBriefing-20200825
Notes:

Phase: 2 Revision:
Date: [DATE @ "MMMM d, yyyy"]
Page: 1 of 2

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Page: 1 of 2

3.1 Reclamation as a Storage Investor

The current funding mechanism for the federal government to invest in the project is through the WIIN Act. While Reclamation's Final Feasibility Report includes a finding of federal interest and an assumption of federal funding of 25 percent - up to \$1.8 billion – the WIIN Act funding currently available is approximately \$600 million, which will need to be allocated among several projects in the seventeen Reclamation states. Because of the uncertainty of the future availability of WIIN Act funds, especially funds on the order of a full 25% investment, along with the risk associated with relying on congressional allocation of those funds to specific projects, the Authority is using more conservative assumptions for federal funding.

The Authority believes that a more reliable and achievable federal investment in the project is \$200 million. Under the Recommended Project in the Value Planning Report, a \$200 million federal investment would fund about 6.6% of the Project, resulting in a capacity share of approximately 15,000 AF representing average annual deliveries (i.e., new water) and total storage volume of approximately 91,000 AF in Sites Reservoir.

Water in Reclamation's allocated storage space in Sites Reservoir could be used at Reclamation's discretion in the manner generally described in Reclamation's Final Feasibility Report, subject to operating constraints, permitting requirements, and the terms of a contract with the Authority.

3.2 Reclamation as an Exchange Partner

The Authority is also considering the possibility of Reclamation as an exchange partner only (no federal investment and no storage allocated to Reclamation in Sites Reservoir) in the Revised EIR / Supplemental EIS analysis. Under the exchange, the Authority would initiate an exchange when pre-determined conditions are met and would provide Sites Reservoir stored water to CVP customers that would normally be supplied by releases from Shasta Lake. Releasing this water from Sites Reservoir reduces drawdown from Shasta Lake during the spring and summer, allowing Reclamation to preserve the cold-water pool into the later months. An equivalent amount of water that was provided to CVP customers in the spring and summer via Sites Reservoir would be released from Shasta Lake in the fall and flow south of the Delta to Sites participants (either Sites SWP or CVP participants). An agreement would be reached on an appropriate monitoring and reporting system to ensure proper accounting of the transaction.

This exchange benefits both the Authority and Reclamation as follows:

- For Reclamation, an exchange would provide measurably improved cold water available later in the year, which is essential to improve conditions for spawning salmon. Exchanges are most likely to take place during dry and critically dry year types, periods when small increments of additional cold water can be most effective and needed. Preliminary analysis of the exchange indicates an average of 60,000 AFY water available for exchange that can reduce winter-run Chinook salmon mortality of 4.5 to 5 percent in years an exchange occurs.
- For the Authority, the exchange serves to extend the delivery window of the project to meet participants' demands in dry years which is the peak demand of the project. The longer period of deliveries means project conveyance features can be smaller, thereby avoiding project capital costs.

4.0 Position of Interested Parties

The Authority is committed to continued collaboration with Reclamation with the goal of federal participation as a storage investor. However, whether Reclamation is an investor in the project or is participates solely as an exchange partner, the analysis performed by the Authority demonstrates that there are quantifiable benefits to Reclamation in either scenario.

From: Eric Leitnerman [ELeitnerman@valleywater.org]
Sent: 8/25/2020 10:34:22 AM
To: robert.tull@jacobs.com; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Katrina Jessop [KJessop@valleywater.org]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Rob and Ali,

Wanted to check in on the status of my request and wanted to give you a heads up that Cindy expressed an interest possibly setting up a phone call for sometime this week or next to better understand the modeling. The big thing on her mind right now is the ability to get our what out of Sites if DWR wont convey it in years when our SWP allocation greater than 50%.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitnerman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, August 20, 2020 5:17 PM
To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>; robert.tull@jacobs.com; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: FW: Sites - CalSIM Model Request for Scenario B

Eric – Thanks for the great questions. These are things that the CH2M team would be best answering.

I've included Rob Tull and team on this email and coordinated with Rob. He is working on responses to your questions and will circle back in the next few days.

Rob – Please work directly with Eric and keep Erin or I in the loop.

Thanks all!

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: Eric Leitnerman <ELeitnerman@valleywater.org>
Sent: Wednesday, August 19, 2020 1:03 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Katrina Jessop <KJessop@valleywater.org>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Thanks again for facilitating the delivery of the VP7 model to Santa Clara. I spent some time looking through the files and I have some follow up questions for the CH2M-Jacobs consultants that I was hoping you could relay.

Based on the attached schematic previously provided to me by Rob Leaf, it looks like model deliveries at Funks to the Sites Participants equals the combined flows of C30 + C30A + C30B + C30C + C31. Similarly the combined flows of C32 + C32B + C32C + C34D would be the public benefit share of releases. Is this correct?

If so then appears that the participant share of releases is only 129 TAF as opposed to the 203 TAF reported in the Value Planning Report. However, the combined total of all flows (C30 + C30A + C30B + C30C + C31 + C32 + C32B + C32C + C34D) is 242 TAF, about the same as is in the Value Planning Report. Does this have something to do with maintaining the old Reclamation exchange logic as a surrogate for a potential non-investment Reclamation exchange with no carry over storage? Does this mean that the 40 TAF/203 TAF split between public benefits and participating water agency benefits in the Value Planning Report is a post-processing split?

If all of the above is correct, does that make it inappropriate to calculate SOD participant share based a post-processing analysis of the change in total exports (D419_SWP + D419_CVP + D418).

Based on what I have said above does it sound like I received the correct copy of the model? I am pretty sure I did, but figured it couldn't hurt to double check.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitnerman@valleywater.org



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5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Eric Leitteman

Sent: Friday, July 31, 2020 11:12 AM

To: 'Whittington, Chad/SAC' <Chad.Whittington@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <Kjessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Thanks Chad. I was able to download the model successfully I have also saved a copy of the caveats to the same folder.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL

Imported Water Unit

Water Supply Division

Tel. (408) 630-2669 / Cell. (408) 784-4966

eleitteman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

5750 Almaden Expressway, San Jose CA 95118

www.valleywater.org

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From: Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Sent: Friday, July 31, 2020 11:02 AM

To: Eric Leitteman <Eleitteman@valleywater.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <Kjessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Eric,

I have sent you a file transfer of the Scenario B Value Planning CalSim model (VP7). Let me know if you got the email titled "VP7 CalSim Study". It should include the following link to the transfer:

<https://ifft.jacobs.com/download.aspx?ID=3710cae8-bb90-4e81-955a-4262653d15ab&RID=049459e0-3fc3-4697-b7ba-b4413c71acc5>

This CalSim study (DCR2015_merge_SitesON_WaterFixOFF_CALSIM_DRAFT_11-25-19_P2b_1_5_scnB_1kPipe.7z) was developed for preliminary sensitivity analysis that was included in the Sites Project Value Planning Report, which evaluated conveyance facility sizing. This model was developed to evaluate the volume released from Sites under varying storage and conveyance capacities. It assumes a 1.5 MAF storage capacity, 1,000 cfs release capacity, and diversion criteria from Scenario B. The model assumes old Reclamation exchange logic that was used as a surrogate for the potential non-investment Reclamation exchange with no carry over storage. Consequently, it is not appropriate for detailed analysis of member deliveries or Shasta exchange. Additionally, all Value Planning sensitivity studies are based on a DCR2015 baseline. Future studies will be updated to reflect actions in the 2019 BiOps and 2020 SWP ITP.

Please let me know if you have any questions or trouble accessing the contents of this package.

Best,

Chad Whittington
Jacobs
Water Resources Engineer | BIAF
916.286.0354
Chad.Whittington@jacobs.com

2485 Natomas Park Dr., Suite 600
Sacramento, CA 95833
USA
www.jacobs.com

From: Eric Leitnerman <ELeitnerman@valleywater.org>
Sent: Wednesday, July 29, 2020 3:56 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>
Subject: [EXTERNAL] RE: Sites - CalSIM Model Request for Scenario B

Thanks Ali.

Chad, when you send us the model can you put it on an online drive (sharepoint, dropbox, etc) so we can download. I have a had issue with receiving zip files through my work email.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitnerman@valleywater.org



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5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, July 29, 2020 3:06 PM
To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I've touched bases with CH2M and they can provide the Scenario B Calsim model this week. I've copied Chad Whittington from CH2M. Chad will be sending you the model. Along with the model, he will provide some of the underlying assumptions/caveats.

Please let us know if you have any questions on the model once you've received.

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: Alicia Forsythe

Sent: Tuesday, July 28, 2020 2:45 PM

To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <Kjessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I am checking with CH2M on this and will circle back to you shortly.

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: Eric Leitnerman <ELeitnerman@valleywater.org>

Sent: Tuesday, July 28, 2020 11:13 AM

To: Alicia Forsythe <aforsythe@sitesproject.org>

Cc: Katrina Jessop <Kjessop@valleywater.org>

Subject: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Valley Water would like a copy of the Scenario B Value Planning report CalSIM model so that we use it for inputs for our internal WEAP modeling of agency's operations. Is it possible to receive this information this week?

We recognize that summary results are available in the Value Planning Report but we need a greater level of detail for our WEAP inputs.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL

Imported Water Unit

Water Supply Division

Tel. (408) 630-2669 / Cell. (408) 784-4966

eleitnerman@valleywater.org



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www.valleywater.org

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/25/2020 12:00:14 PM
To: Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]; Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]
CC: Larson, Ryan T CIV USARMY CESPCK (USA) [Ryan.T.Larson2@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)
Attachments: Wetlands Delineation Fields Studies 2000.pdf; 15-Wetlands_SitesDraftEIR-EIS_August2017.pdf

Hi Matthew,

Truth be told, I am not sure there is a complete previous delineation. I have been working on this project since Jan 2019 and was an ex-parte advisor to the project's permitting manager for several years prior to that, and have not seen a delineation other than the attached "update report" that was completed in 2000 by DWR. This report is not very specific to the current project as it only covers the reservoir footprint. I have also included the 2017 Draft EIR/EIS section that discusses wetlands and waters for that particular project alternative that, besides being out of date based on the new project alternative, is in my opinion a bit light on details and figures.

The currently proposed locally preferred alternative is quite different than what was in the 2017 DEIR/EIS in that the reservoir is smaller and there is no Delavan diversion/outfall on the Sacramento River. That has been replaced by utilizing the existing Red Bluff and Hamilton City diversions to fill Sites, and then utilizing excess capacity in the Tehama Colusa Canal to move water south to the Dunnigan area where a new 1,000 cfs pipeline will be built that connects to the Colusa Basin Drain and potentially to the Sacramento River. We are working up some detailed figures and are about 1 week or so from having those ready for external distribution.

I have an email in to DWR asking if they have any additional information and/or the survey data that the update report discusses. I was scheduled to go up to Red Bluff in April to dig through the NODOS files but COVID has prevented that from happening.

I'm more than happy to chat about this.

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Roberts, Matthew J CIV USARMY CESPCK (USA) [mailto:Matthew.J.Roberts@usace.army.mil]
Sent: Monday, August 24, 2020 9:43 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)

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CLASSIFICATION: UNCLASSIFIED

John,

would you be able to send the previous delineation. I am currently working at home in response to the COVID pandemic and do not have the hard file. If you can email it to me so I could have a better understanding of it. I would really appreciate it. Thank you very much for your help.

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Monday, August 24, 2020 8:58 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Nancy,

Let me check with my team on this. Are you thinking this would be the "formal" pre-app or the initial meeting to review methods and approach for the delineation as discussed below?

Also, what date do you have on the delineation you were referencing?

Thanks.
John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Monday, August 24, 2020 8:49 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

Do you have an idea of when you will be ready for a pre-application meeting? Matthew is going to look at your old delineation to see how it compares to the new NWPR so we have some sort of idea what we are looking at for a PJD, AJD or AR verification.

Thanks - Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 11:13 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Reclamation will be releasing a supplemental EIS that will have all the changes included. Their alternatives that they have included in the final Feasibility Study that is due to be acted on by end of year bookends our "right-sized" locally preferred project. So, that will be how the S EIS gets updated and addresses the preferred project.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 9:19 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: Sites Project Permitting Update

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Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 9:14 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>

Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 8:41 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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Thanks John,

I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.

Nancy

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 8:27 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Hi Nancy,

We are planning to have ICF perform a delineation to support the permit application packet in 2021. I have Mike Vondergeest leading that up, and we are just waiting for our September 1 funding date to kick that off.

Our intention is to begin meeting with you and your staff in fall of 2020 to consult on the process and review the proposed methods and approach. We anticipate that we will not have access to the majority of the site so we are going to have to use significant imaging, LIDAR, selected surveys in areas where we do have access and groundtruthing.

Mike has a draft agenda already prepped, and soon after Sept 1 we will send that over for your review and comment and start scheduling the pre-app meetings.

We're looking forward to getting this started and will have our funding in place through 2021. Please let me know if you would like any background data on the project and we can share that with you and your staff.

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 7:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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Hi John,

We have not completed a Jurisdictional Determination on this project as of yet have we? Either way, we will need to see what exactly our jurisdiction would be for this project.

Thanks - Nancy

Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 7:12 AM
To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
Subject: [Non-DoD Source] Sites Project Permitting Update

Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- * Reservoir size will be reduced from 1.8 to 1.5 million acer-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- * Delevan diversion, pipeline and outfall has been removed.
- * Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- * Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- * Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- * Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- * Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
 - o Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - o Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans

* No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the Preliminary Revised Draft EIR/EIS Alternatives to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- * A joint Draft BA in May 2021
- * Two 2081 ITP applications by November 2021 (one operations and one construction)
- * Draft 404 and 401 permit packages for a December 2021 submittal
- * Draft 401 for a December 2021 submittal
- * Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- * Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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 <mailto:john.spranza@hdrinc.com>

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<BlockedBlockedBlockedBlockedBlockedhttps://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhdrinc.com%2Ffollow-us&data=02%7C01%7CJohn.Spranza%40hdrinc.com%7C5035779ea01a42d37c8a08d8484cc128%7C3667e201cbdc48b39b425d2d3f16e2a9%7C0%7C0%7C637338841794696969&sdata=U69n7QtmuB0RHbAayojE3Pg6qOK2L8IQOh%2BzrA1of%2Bs%3D&reserved=0>

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CLASSIFICATION: UNCLASSIFIED

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/25/2020 12:57:35 PM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: FW: CalMatters Commentary

Please hold on reaching out to him until after we talk tomorrow morning. thanks

From: Jerry Brown <jbrown@sitesproject.org>
Date: Tuesday, August 25, 2020 at 12:56 PM
To: "bbabbittaz@gmail.com" <bbabbittaz@gmail.com>
Subject: Re: CalMatters Commentary

Excellent Bruce, Marcia will be contacting you shortly at the email address you provided. Looking forward to catching up.

Thanks
Jerry

From: bruce babbitt <brucebabbitt2000@yahoo.com>
Date: Tuesday, August 25, 2020 at 12:10 PM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: Re: CalMatters Commentary

Jerry,

Really nice to hear from you- and to learn of your new assignment.

I recall our first visit when you came to the 13th floor-- and I heard, for the first time, a thoughtful suggestion of how a single tunnel might suffice.

Your offer to bring me up to speed is gratefully accepted. I should be available most any morning from September 2 onward into mid September and will look to hearing from Marcia.

Please note and use my PRIVATE EMAIL ADDRESS:

Regards,

Bruce

On Tuesday, August 25, 2020, 10:52:21 AM EDT, Jerry Brown <jbrown@sitesproject.org> wrote:

Good Morning Bruce,

I hope you and your family are doing well. I just read your commentary on CalMatters regarding Sites and the Delta Tunnel. I don't know if you heard but I left Contra Costa at the end of 2019 and was brought on as the Sites Project Authority Executive Director in March 2020. At about the time I came to the project, the Board was concluding a "value planning effort" culminating in a new direction for the Sites project which did exactly the things you are recommending in your article. We are preparing a revised EIR and supplemental EIS to reflect these changes and respond to other feedback which should be out mid next year. I'd like to sit down with you (virtually) and discuss the changes.

Can I have my assistant Marcia contact you to make scheduling arrangements?

Thanks
Jerry

Sent: 8/25/2020 12:58:41 PM
To: bbabbittaz@gmail.com
Subject: RE: CalMatters Commentary

Hi Bruce,

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

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Sent: Tuesday, August 25, 2020 12:57 PM
To: bbabbittaz@gmail.com
Subject: Re: CalMatters Commentary

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Can I have my assistant Marcia contact you to make scheduling arrangements?

Thanks

Jerry

From: Luu, Henry [Henry.Luu@hdrinc.com]
Sent: 8/26/2020 6:46:58 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites HC: TRR Alternatives suggested EIS/EIR survey area

Hi Ali,

Thank you for the suggestion, very much appreciate it. We'll adjust the "take" verbiage.

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Wednesday, August 26, 2020 4:50 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>
Subject: FW: Sites HC: TRR Alternatives suggested EIS/EIR survey area

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.

Hey Henry – Laurie forwarded this graphic onto me. I noticed this when I skimmed the TM last week prior to Friday's meeting and forgot to say something. But thought I would now.

We should be super careful with the word "Take" in relation to land acquisition. If a landowner saw this, they would likely think this implies we would "take" their land – like a Constitutional takings – without really working with them thru a mutually agreeable land acquisition process. From their perspective, "take" sounds very heavy handed and implies that we don't care a lot about them or their considerations. Which of course, isn't the truth and isn't the perception we want to give to landowners.

I would suggest we eliminate all use of "take" and label these areas as "Permanent Land Need" or "Permanent Land Footprint" or something that avoids the word take altogether. I realize these TMS are not for public distribution, but we never know where they will go and how the figure will be used. And I suspect our Work Group members would react to this (along with GCID) in a negative way, so we couldn't use these figures as is for these discussions either.

Just a suggestion for your consideration with the team.

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: Rude, Pete/RDD [mailto:Pete.Rude@jacobs.com]
Sent: Monday, August 24, 2020 10:32 AM
To: Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>

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

Subject: Sites HC: TRR Alternatives suggested EIS/EIR survey area

Hi Jelica and Laurie,

Per our discussions at the permitting/environmental call last Friday, attached is the suggested area for a desk top survey of environmental considerations for the TRR alternatives. It will also cover the potential areas of power transmission lines from PGE or WAPA. Let me know if you have any questions.

Peter H. Rude, PE (CA, HI, CO) /Jacobs/ Civil Engineer & Principal Project Manager
1-530-229-3396 (office)/ 1-530-917-4164 (mobile)/ 2525 Airpark Drive, Redding, CA 96001
pete.rude@jacobs.com / www.jacobs.com

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From: Jerry Brown [jbrown@sitesproject.org]
Sent: 8/26/2020 7:27:33 AM
To: Marcia Kivett [MKivett@sitesproject.org]
Subject: FW: WAPA Interconnection Application
Attachments: WAPA Interconnection Summary R1 DRAFT.PDF

Please paste my signature and send to henry tomorrow.

From: "Luu, Henry" <Henry.Luu@hdrinc.com>
Date: Thursday, August 20, 2020 at 12:35 PM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: FW: WAPA Interconnection Application

Jerry,

Would you mind signing the attached WAPA interconnection cover page after the Authority Board approves the Amendment 2 work next week?

Also, if you don't mind can you confirm receiving this email?

Thank you,
Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Luu, Henry
Sent: Thursday, August 20, 2020 9:01 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: WAPA Interconnection Application

Hi Jerry,

I'm working to line up the PG&E and WAPA applications for delivery after the AB approval, and there's one item I need clarification on. The attached WAPA interconnection package requires signature of an authorize representative...would you or Joe be the signatory?

Thank you,
Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

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**SITES Project
WAPA Interconnection Application**

Type of Interconnection (mark all that apply):

Transmission interconnection

Description of Requested Interconnection (include as much of the following information as possible on attached sheets; mark all that apply):

Single-line diagram(s) showing the proposed interconnection

Drawing(s) indicating physical arrangements of existing and proposed facilities

Geographic location of proposed interconnection and structure numbers, if available

Description of proposed routing and dimensions and configurations of new structures and facilities

Description and ratings of proposed transformers, circuit breakers, switches, metering, associated communications, and relaying and other equipment

Proposed transmission path(s) and service arrangements between resources and associated loads, where applicable

Appropriate revenue and telemetering equipment specifications

Copies of relevant planning or operational studies

Proposed construction schedule

Ten-year land plan and other land acquisition projections

Copies of relevant environmental impact assessments, reports, or projections; or description of anticipated scope of environmental review

Name and Title of Authorized Representative:

Signature of Authorized Representative:

Date: _____

Please send the completed Application for Interconnection to the appropriate WAPA office. A WAPA representative will contact you when the Application for Interconnection is received. Please allow up to 30 calendar days for processing after receipt by WAPA.

SITES PROJECT SUMMARY

The Proposed Project consists of two pumping/hydroelectric generators stations at Terminal Regulating Reservoir (TRR) and Funks Reservoir. A new 230 kilovolt (kV) transmission system would deliver power required for the Project. The Project will require the delivery of energy to the Project substations where it will convert it from 230 kV to 13.8 kV. At the Funks site the net pumping energy demand is estimated at 80 MVA and at the TRR site the net pumping demand is estimated to be 90 MVA, totaling 170 MVA of demand load.

Funks Reservoir is estimated to have a net generating capacity to the grid equal to 55.0 MVA and TRR a net generating capacity of 31 MVA. The Project's total net generating capacity to the grid is estimated to be 86 MVA.

The Project estimated pumping energy requirements and power generation are summarized are as follows:

Pumping Power Requirements					
	Net Pumping Power (MW)	Other Auxiliary Loads	Transformer and T Line Losses (MW)	Total Pumping Power (MW)	Total Pumping Power @ 0.85 PF (MVA)
Funks	67.1	1	0.1	68.2	80.2
TRR	75.4	1	0.1	76.5	90.0
Totals	142.4			144.7	170.2

Power Generation					
	Net Pumping Power (MW)	Other Auxiliary Loads (MW)	Transformer and T Line Losses (MW)	Total Power Generation to Grid (MW)	Total Power Generation to Grid @ 0.85 PF (MVA)
Funks	48.1	1	0.1	47.0	55.3
TRR	27.4	1	0.1	26.3	31.0
Totals	75.5			73.3	86.2

The proposed Point of Interconnection (POI) to a 230 kV transmission line is located approximately 1.7 miles to the West of the TRR site and 1.7 mile to the East of Funks. To minimize cost and land area requirements, the Preliminary 230 kV Schematic Plan SKS-01-S depicts the POI looping in and then back out of the new Funks substation. The Funks substation then connects to the new TRR substation. This allows the POI to be created without locating a third substation in the vicinity of the POI; though, the interconnection configuration is subject to approval by the Utility and CAISO.

To step the 230 kV down to the motor/generator operating voltage of 13.8 kV, each pumping site is proposed to be fed by two (2) 100 MVA transformers. Three winding transformers are proposed to reduce nominal current ratings below 3,000 amperes and minimize short circuit levels to comply with Arc Flash requirements in accordance with OSHA regulations. This configuration will allow two independent, double-ended 13.8 kV switchgear lineups to reliably connect the motors and generators to the Utility Grid.

Each new substation will contain the primary safety equipment, including breakers and utility grade relays, to disconnect interconnection facilities immediately when a fault is detected on the 230 kV Utility system and the 13.8kV pumping station systems, to minimize potential loss of life and property. As a generation facility, it will trip off-line (disconnect from the WAPA Power System automatically) when WAPA's power is disconnected from the line into which the unit is generating. Transmission line-protective equipment will perform one of the following, as agreed to with the utility:

1. Automatically clear a fault and restore power
2. Rapidly isolate only the faulted section so that the 230 kV system affected by any outage is minimized.

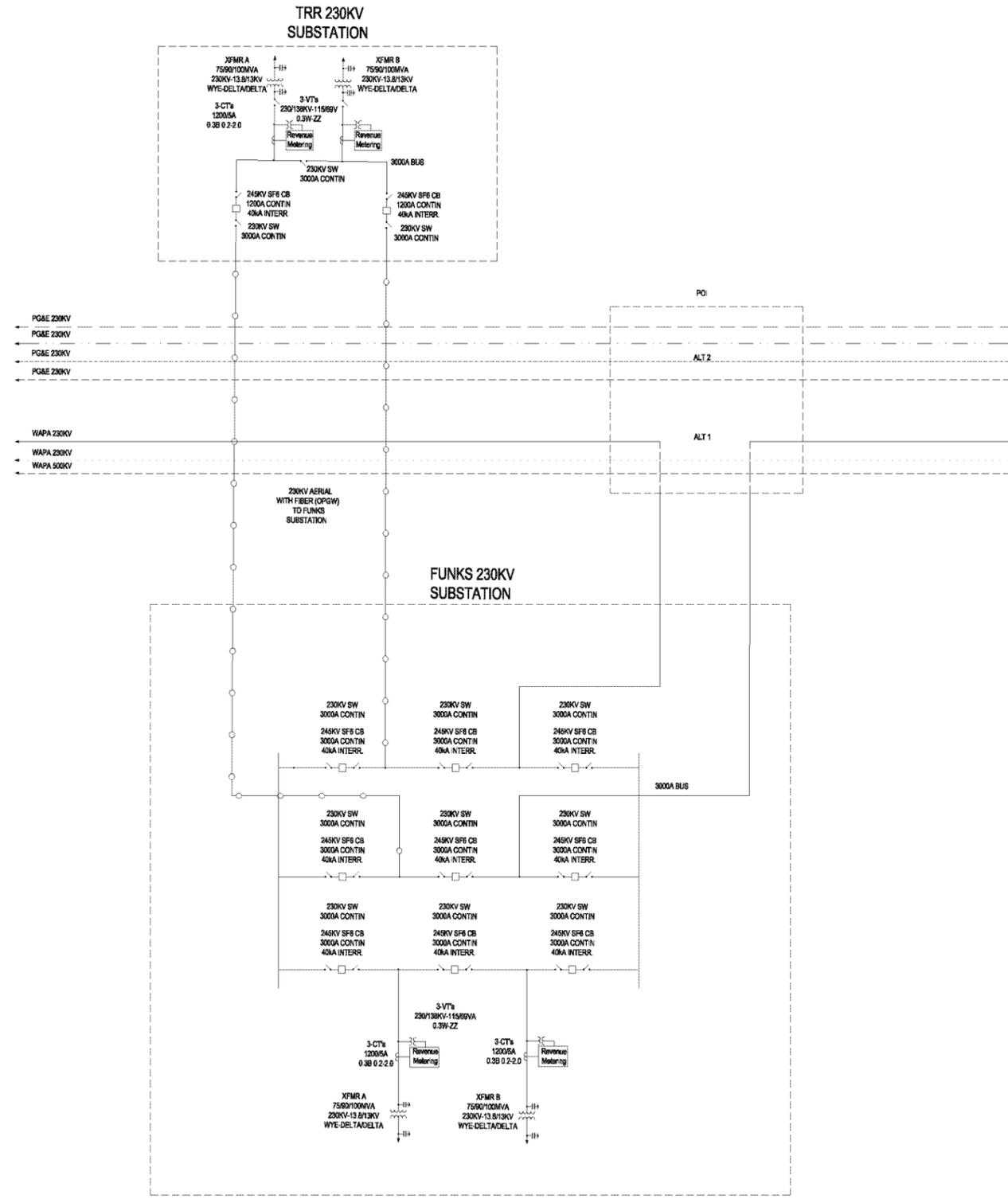
The protection system will be designed with enough redundancy that the failure of any one component will permit the Generation Entity's facility to be safely and reliably isolated from the WAPA Power System under a fault condition. Using fiber optic or leased circuit communication lines will enable communication based protection between each pumping station and the neighboring POI utility substations.

WAPA standardizes protection requirements as much as possible, however there are many system variables impacting protection requirements such as generator size and type, number of generators, fault duties, line characteristics (e.g. voltage, impedance and ampacity) and pre-existing protection schemes. Identical generators at different locations may have widely varying protection requirements and costs. For example, high-speed fault clearing may or may not be required to minimize equipment damage and potential impact to system stability.

ATTACHMENTS

1. Single-line diagram showing the proposed interconnection
2. Substation single line diagrams
3. Project Location

G
F
E
D
C
B
A



PLOTTED BY: HALASKA, DAVID - August 14, 2020 - 3:44:42 PM
 DRAWING: GEN-100-E-6002-D3380600.dwg
 JACOBS PROJECT # D3880600

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: S WEGEL
 DRAWN BY: A RASHEED
 CHECKED BY: S WEGEL
 IN CHARGE: P RUDE
 DATE: 08-14-2020

JACOBS
 2525 AIRPARK DR
 REDDING CA, 96001
 PHONE: (530) 243-5831

VANDERWEIL
 POWER GROUP
All Vanderweil Engineers, LLP
 4775324202 Tel.
 275-243-2400 Fax
 vanderweil.com

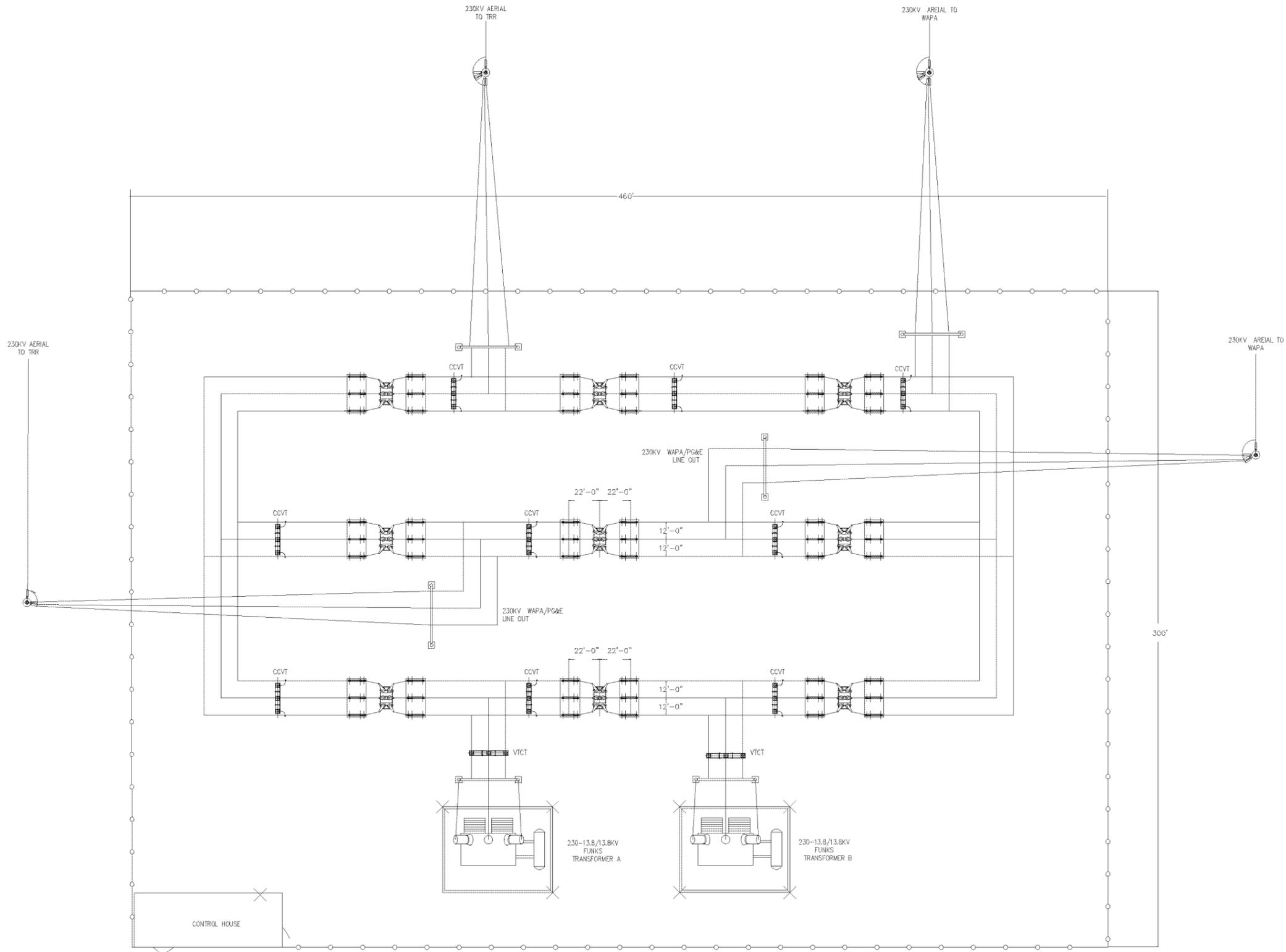


SITES RESERVOIR PROJECT
 GENERAL - ELECTRICAL
 WAPA POINT OF INTERCONNECTION
 OVERALL ONE LINE DIAGRAM

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL
 DRAWING. ADJUST SCALE FOR
 REDUCED PLOTS

DRAWING NO.
 GEN-100-E-6002

DRAFT - PROJECT FEASIBILITY STUDY - NOT FOR CONSTRUCTION



PLOTTED BY: HALASKA, DAVID - August 14, 2020 - 3:44:42 PM
 DRAWING: FNK-110-E-2202_D3380600.dwg
 JACOBS PROJECT # D3880600

I/R	DATE	BY	CHK	APPR	DESCRIPTION

DESIGNED BY: S WEGEL
 DRAWN BY: A RASHEED
 CHECKED BY: S WEGEL
 IN CHARGE: P RUDE
 DATE: 08-14-2020

JACOBS
 2525 AIRPARK DR
 REDDING CA, 96001
 PHONE: (530) 243-5831
VANDERWEIL
 POWER GROUP
214 Vanderweil Drive
 Redding, WA 98571
 509.225.2277



SITES RESERVOIR PROJECT
 FUNKS RESERVOIR
 WAPA
 SUBSTATION PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL
 DRAWING. ADJUST SCALE FOR
 REDUCED PLOTS

 DRAWING NO.
 FNK-110-E-2202

DRAFT - PROJECT FEASIBILITY STUDY - NOT FOR CONSTRUCTION

I/R	DATE	BY	CHK	APPR	DESCRIPTION
				PR	

DESIGNED BY: S WEGEL
DRAWN BY: A RASHEED
CHECKED BY: S WEGEL
IN CHARGE: P RUDE
DATE: 08-14-2020

JACOBS
2525 AIRPARK DR
REDDING CA, 96001
PHONE: (530) 243-5831

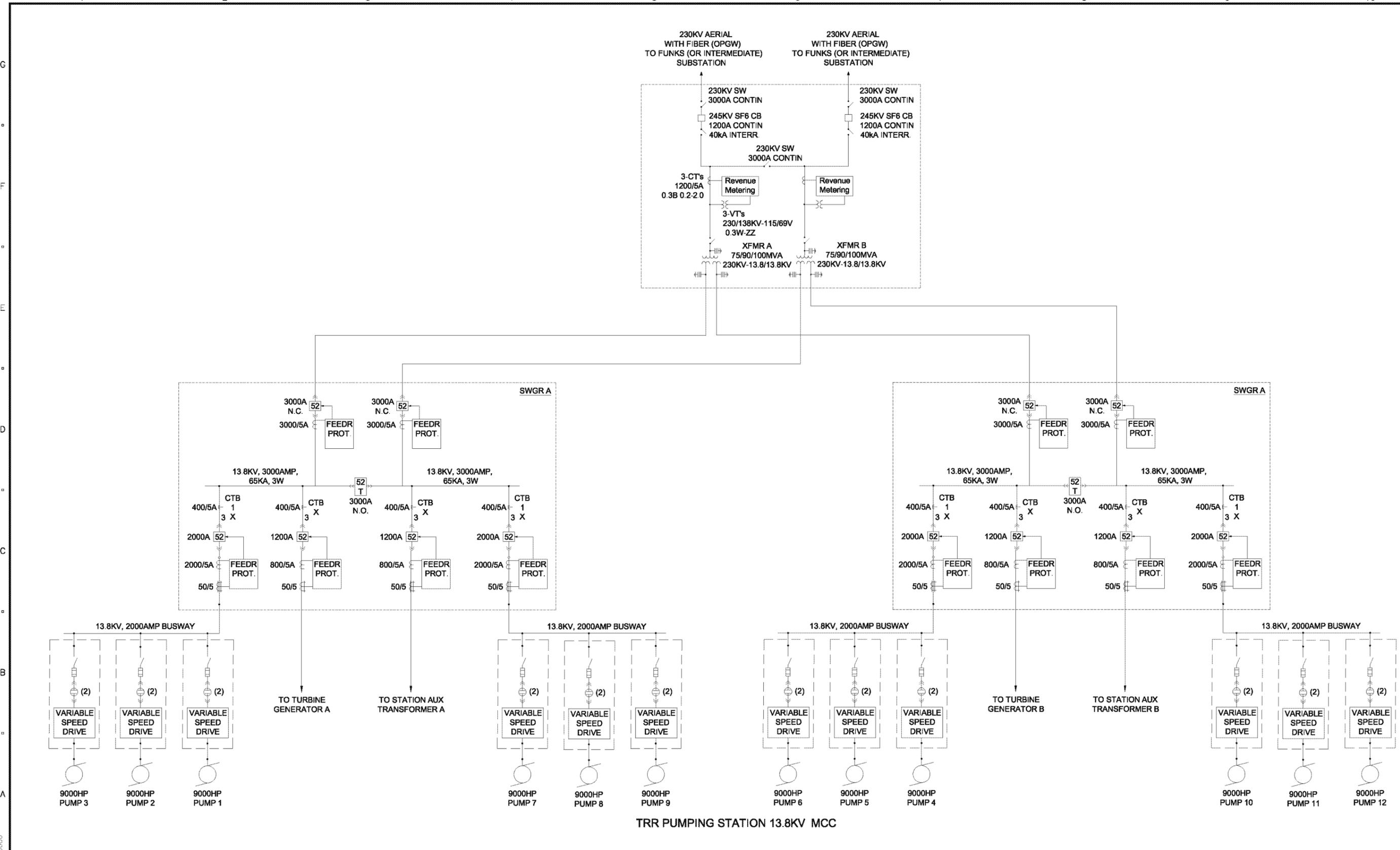
VANDERWEIL
POWER GROUP



SITES RESERVOIR PROJECT
TERMINAL REGULATING RESERVOIR
WAPA 230KV SCHEMATIC PLAN
SUBSTATION ONE LINE DIAGRAM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL
DRAWING. ADJUST SCALE FOR
REDUCED PLOTS

DRAWING NO.
TRR-110-E-6002



TRR PUMPING STATION 13.8KV MCC

SITES PROJECT AUTHORITY
P.O. Box 517
122 OLD HIGHWAY 99 WEST
MAXWELL, CALIFORNIA 95955
www.SitesProject.org

JERRY BROWN, EXECUTIVE DIRECTOR
925.260.7417

YOLANDA TIRADO, CLERK
530.438.2309
Boardclerk@SitesProject.org

Board of Directors

FRITZ DURST, RECLAMATION DISTRICT 108, CHAIR
JEFF SUTTON, TEHAMA-COLUSA CANAL AUTHORITY, VICE-CHAIR
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BRUCE HOUESHELDT, PLACER COUNTY WATER AGENCY/CITY OF ROSEVILLE
DOUG PARKER, WESTSIDE WATER DISTRICT
JOE MARSH, COLUSA COUNTY WATER DISTRICT
JEFF HARRIS, CITY OF SACRAMENTO/SACRAMENTO COUNTY WATER AGENCY
DON BADER, BUREAU OF RECLAMATION (COST-SHARE PARTNER, NON-VOTING)
ROB COOKE, CA DEPARTMENT OF WATER RESOURCES (EX-OFFICIO, NON-VOTING)

Associate Members (NON-VOTING)

GREG JOHNSON, WESTERN CANAL WATER DISTRICT
JAMIE TRAYNHAM, TC 4 DISTRICTS

Notice: Pursuant to Executive Orders N-25-20 & N-33-20, issued by Governor Newsom on March 12, 2020, and guidance by the California Department of Public Health dated March 11, 2020, this meeting will be conducted by teleconference. The public may attend the meeting and offer public comments by phone, using the call-in number provided below, or in person, at the address above. Members of the Committee will participate by teleconference from other locations.

August 26, 2020 1:30 p.m. Sites Project Authority Agenda

Teleconference: **1-408-418-9388**

Code: **146 870 6563**

[WebEx Link](#)

Welcome to a meeting of the Sites Joint Powers Authority. If you are scheduled to address the Board, please state your full name for the record. Regularly numbered items may be considered at any time during the meeting. All items are listed in accordance with the Ralph M. Brown Act. We invite all members of the public to attend.

CALL TO ORDER:

- Introductions.
- Pledge of Allegiance.
- Approval of August 26, 2020 Agenda.
- Period for Public Comment.

1. **Consent Agenda:**

Approximate start time 1:40 pm

The following items have been reviewed by the Executive Director. To his knowledge, there is no opposition to the action. The items can be acted on in one consolidated motion as recommended or may be removed from the Consent Calendar and separately considered at the request of any person.

-
- 1.1 Consider approval the July 22, 2020 Authority Board Meeting Minutes. **(Attachments A)**
 - 1.2 Consider accepting the Sites Project Authority Treasurer's Report as presented in Attachment 1.2A. **(Attachment A)**
 - 1.3 Consider approval of the Payment of Claims as presented in Attachment 1.3A with supporting details provided in Attachment 1.3B. **(Attachments A, B & C)**
 - 1.4 Consider approval of issuing two checks totaling \$110,000 to initiate applications with Pacific Gas & Electric (PG&E) and Western Area Power Administration (WAPA) to begin engineering consultation for progressing feasibility study of project electrical facilities.

2. Action Items: Approximate start time 1:45 pm

- 2.1 Consider approval the revised work plan (budget) with a period of performance of September 1, 2020 to December 31, 2021 (Amendment 2) and updated Exhibit B to the Second Amendment to 2019 Reservoir Project Agreement. **(Attachments A, B, & C)**
 - 2.1.1 Consider approval of a recommendation to the Sites Project Authority and approve HDR Engineers, Inc.'s (Project Integration) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$4,342,136 for the period of September 1, 2020 through December 31, 2021.
 - 2.1.2 Consider approval of a recommendation to the Sites Project Authority and approve Brown and Caldwell's (B&C) (Project Controls) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$2,505,736 for the period of September 1, 2020 through December 31, 2021.
 - 2.1.3 Consider approval of a recommendation to the Sites Project Authority and approve Katz and Associates' (Katz) (Communications) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$400,000 for the period of September 1, 2020 through December 31, 2021.
 - 2.1.4 Consider approval of a recommendation to the Sites Project Authority and approve CH2M Hill engineers, Inc.'s (CH2M) (Operations) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$2,094,564 for the period of September 1, 2020 through December 31, 2021.
 - 2.1.5 Consider approval of a recommendation to the Sites Project Authority and approve ICF Jones and Stokes, Inc's. (ICF) (Environmental Planning) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$3,010,759 for the period of September 1, 2020 through December 31, 2021.
 - 2.1.6 Consider approval of a recommendation to the Sites Project Authority and approve ICF Jones and Stokes, Inc's (ICF) (Permitting and Agreements) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract

-
- authority of \$4,400,995 for the period of September 1, 2020 through December 31, 2021.
- 2.1.7 Consider approval of a recommendation to the Sites Project Authority and approve CH2M Hill Engineers, Inc.'s (CH2M) (Engineering-Conveyance) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$3,356,849 for the period of September 1, 2020 through December 31, 2021.
- 2.1.8 Consider approval of a recommendation to the Sites Project Authority and approve AECOM (Engineering - Reservoir) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$1,765,758 for the period of September 1, 2020 through December 31, 2021.
- 2.1.9 Consider approval of a recommendation to the Sites Project Authority and approve Fugro USA Land, Inc.'s (Fugro) (Geologic/Geotechnical Services) Amendment 2 Task Order No. 3.0 scope of work with a not to exceed contract authority of \$2,079,804 for the period of September 1, 2020 through December 31, 2021.
- 2.2 Consider approval of updated Funding Credit and Reimbursement Policy. **(Attachment A)**
- 3. Discussion and Information Items:** Approximate start time 2:15 pm
- 3.1 Review and comment on the approach being taken to address comments from conservation organizations on the 2017 Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) in the development of the Revised EIR/Supplemental EIS. **(Attachment A)**
- 3.2 Review and comment on Permitting and Agreement List. **(Attachment A)**
- 3.3 Receive status update on preliminary participation levels, outreach efforts related to maintaining project subscription in Second Amendment to 2019 Reservoir Project Agreement (Amendment 2) and the process of rebalancing participation. **(Attachment A)**
- 3.4 Review and Comment on Engineering Feasibility Approach for Improved Cost Certainty.
- 3.5 Receive report by Legal Counsel reviewing provisions of the Ralph M. Brown Act related to closed sessions. **(Attachment A)**
- 4. Reports:** Approximate start time 3:15 pm
- 4.1 Member's Reports:**
- 4.1.1 Chairpersons' Report:
- This time is set aside to allow the Chair/Co-Chair an opportunity to disclose/discuss items related to the Sites Project.

Sent: 8/26/2020 7:46:03 AM
To: bbabbittaz@gmail.com
Subject: FW: CalMatters Commentary

Good Morning,

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: bruce babbitt <brucebabbitt2000@yahoo.com>
Date: Tuesday, August 25, 2020 at 12:10 PM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: Re: CalMatters Commentary

Jerry,

Really nice to hear from you- and to learn of your new assignment.

I recall our first visit when you came to the 13th floor-- and I heard, for the first time, a thoughtful suggestion of how a single tunnel might suffice.

Your offer to bring me up to speed is gratefully accepted. I should be available most any morning from September 2 onward into mid September and will look to hearing from Marcia.

Please note and use my PRIVATE EMAIL ADDRESS:

Regards,

Bruce

On Tuesday, August 25, 2020, 10:52:21 AM EDT, Jerry Brown <jbrown@sitesproject.org> wrote:

Good Morning Bruce,

I hope you and your family are doing well. I just read your commentary on CalMatters regarding Sites and the Delta Tunnel. I don't know if you heard but I left Contra Costa at the end of 2019 and was brought on as the Sites Project Authority Executive Director in March 2020. At about the time I came to the project, the Board was concluding a "value planning effort" culminating in a new direction for the Sites project which did exactly the things you are recommending in your article. We are preparing a revised EIR and supplemental EIS to reflect these changes and respond to other feedback which should be out mid next year. I'd like to sit down with you (virtually) and discuss the changes.

Can I have my assistant Marcia contact you to make scheduling arrangements?

Thanks
Jerry

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/26/2020 9:30:11 AM
To: Cordova, Daniel A [dcordova@usbr.gov]
CC: Jerry Brown [jbrown@sitesproject.org]
Subject: RE: [EXTERNAL] Sites Project Permitting Update
Attachments: R20AC00105 SITES PROJECT PLANNING signed agreement 8.11.2020.pdf

Dan,
I recall this coming up previously, and although we discussed the BA and the overall ESA consultation process in our July 31, 2020 meeting, apparently the issue was not resolved to your satisfaction. However, over the last several months Ryan, Erin and I discussed the project's permitting, and determined that and as a result of Reclamation's obligation to consult on actions in which there is discretionary Federal involvement or control, Reclamation will be the lead federal agency for the construction and operation of the Sites Project, and consultation on the entirety of the project would be via the Section 7 interagency consultation process outlined in 50 CFR § 402.03. I apologize if this information did not get passed along to you, still this consultation approach was agreed to with Ryan and included in the executed Financial Assistance Agreement (FAA) between Reclamation and the Authority.

To further expand on the link between the Project and 50 CFR § 402.03, once Reclamation has exercised its discretion and proposed a federal action, Reclamation is obligated to consider the "effects of that action" to ensure that the action is not likely to jeopardize the continued existence of a listed species. It must consider the "effects of the actions," which include all consequences of the action provided those consequences are reasonably certain to occur and would not occur but for the federal action. Reclamation may not truncate consideration of effects because its authority does not extend to the breath of the consequences of its action. NMFS and USFWS speak directly to this point in the preamble to their recent amendments to the 50 CFR § 402 regulations (84 FR 44976, August 27, 2019). As such, it is the Authority's understanding, as codified in the attached executed FAA, that Reclamation has the following discretionary actions on the project at a minimum, and that consultation for the project in its entirety is warranted under 50 CFR § 402.03:

- 1) Issuance of a Warren Act Contract to the Project.
- 2) Modifying federal conveyance facilities (TC Canal, Red Bluff Diversion Dam and Funks Reservoir) for the project.
- 3) Modifying the place of use and/or point of rediversion to Reclamation's existing CVP water rights for the rediversion of CVP water to, and use in/by Sites Reservoir.
- 4) Entering into a Cooperative Agreement with the CVO for operations of the Sites Project within the constraints of CVP/SWP operations.
- 5) Providing WIIN Act funding to the Project.

I understand that there is a meeting being scheduled with Reclamation's leadership and Sites to discuss this further and look forward to that discussion and a timely resolution of this item as it has a substantial effect on the schedule of the Sites Project.

Regards,
John

John Spranza

D 916.679.8858 M 818.640.2487

From: Cordova, Daniel A [mailto:dcordova@usbr.gov]
Sent: Thursday, August 20, 2020 9:18 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov; kristal.davis-

fadtke@wildlife.ca.gov; jonathan.williams <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil

Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

Subject: Re: [EXTERNAL] Sites Project Permitting Update

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Hi John,

Thanks for the update. One item that caught my attention was the mention of a joint BA for the project. During previous efforts regarding this project Reclamation pointed out that, aside from providing funding for the construction of the dam, it would retain no discretionary Federal involvement or control over operations of the reservoir. In light of this, Reclamation previously recommended section 10 coverage with FWS regarding operations. Is the plan to use one BA for the necessary section 7 consultations and also to support a section 10 consultation?

Thanks,

Dan

From: Spranza, John <John.Spranza@hdrinc.com>

Sent: Friday, August 14, 2020 7:12 AM

To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kenneth.Kundargi <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov <matt.johnson@wildlife.ca.gov>; kristal.davis-fadtke@wildlife.ca.gov <kristal.davis-fadtke@wildlife.ca.gov>; jonathan.williams <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov <duane.linander@wildlife.ca.gov>; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil <Nancy.A.Haley@usace.army.mil>; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil <Kevin.C.Lee@usace.army.mil>

Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel A <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com <CFitzer@esassoc.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com <jason.hassrick@icf.com>; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

Subject: [EXTERNAL] Sites Project Permitting Update

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Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- Reservoir size will be reduced from 1.8 to 1.5 million acre-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- Delevan diversion, pipeline and outfall has been removed.
- Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.
- Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
 - Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the *Preliminary Revised Draft EIR/EIS Alternatives* to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- A joint Draft BA in May 2021
- Two 2081 ITP applications by November 2021 (one operations and one construction)
- Draft 404 and 401 permit packages for a December 2021 submittal
- Draft 401 for a December 2021 submittal
- Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/26/2020 9:33:00 AM
To: Sullivan, Lauren R [lauren_sullivan@fws.gov]; Cordova, Daniel A [dcordova@usbr.gov]; Evan Sawyer - NOAA Federal [evan.sawyer@noaa.gov]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Kundargi, Kenneth@Wildlife [Kenneth.Kundargi@wildlife.ca.gov]; matt.johnson@wildlife.ca.gov; kristal.davis-fadtke@wildlife.ca.gov; jonathan.williams [jonathan.williams@wildlife.ca.gov]; duane.linander@wildlife.ca.gov; La Luz, Felipe@Wildlife [felipe.laluz@wildlife.ca.gov]; Boyd, Ian@Wildlife [Ian.Boyd@Wildlife.ca.gov]; Nancy.A.Haley@usace.army.mil; Michael S. Jewell (michael.s.jewell@usace.army.mil) [michael.s.jewell@usace.army.mil]; Kevin.C.Lee@usace.army.mil
CC: Jerry Brown [jbrown@sitesproject.org]; Berryman, Ellen (Ellen.Berryman@icf.com) [Ellen.Berryman@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Kevin Spesert [kspesert@sitesproject.org]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; CFitzer@esassoc.com; Lecky, Jim [Jim.Lecky@icf.com]; Hendrick, Mike [Mike.Hendrick@icf.com]; jason.hassrick@icf.com; Carper, Mark A [mcarper@usbr.gov]; Martin, Nathaniel J [nmartin@usbr.gov]; Lassell, Susan (Susan.Lassell@icf.com) [Susan.Lassell@icf.com]; Risse, Danielle [Danielle.Risse@hdrinc.com]
Subject: RE: [EXTERNAL] Sites Project Permitting Update

Hi Lauren,

We are aware of Dan's concerns and are working with Reclamation to address them. We will follow up in the next week or so once we have a resolution.

Regards,
John

John Spranza

D 916.679.8858 M 818.640.2487

From: Sullivan, Lauren R [mailto:lauren_sullivan@fws.gov]
Sent: Thursday, August 20, 2020 12:51 PM
To: Cordova, Daniel A <dcordova@usbr.gov>; Spranza, John <John.Spranza@hdrinc.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov; kristal.davis-fadtke@wildlife.ca.gov; jonathan.williams <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
Subject: Re: [EXTERNAL] Sites Project Permitting Update

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Draft_0003525

Hi John,

Adding to what Dan just sent, if Sites Authority does pursue Section 10 for take coverage for operations from FWS and/or NMFS, Site will need more than a BA. HCP's have to have their own NEPA (rarely is a project's EIS/EIR fully adequate for development of an HCP, unless the needs of the HCP NEPA are incorporated into the project NEPA). The FWS has some information online about Section 10 for HCPs: <https://www.fws.gov/endangered/what-we-do/hcp-overview.html>. Also, we can schedule a meeting with the people who handle HCPs for FWS (and NMFS, if there will be potential take of their species) if you want to learn more about how an HCP might work for the Sites Project. The Services cannot make the call on whether take from Sites operations should be permitted under Section 7 or Section 10. That is a discussion that has to happen between Reclamation and the Sites Authority.

Lauren Sullivan

Fish & Wildlife Biologist
Watershed Planning Division

San Francisco Bay-Delta Fish & Wildlife Office

U.S. Fish & Wildlife Service
650 Capitol Mall, Suite 8-300
Sacramento, CA 95814
(916) 930-5643 office*
lauren_sullivan@fws.gov

*I am working from home during the COVID-19 pandemic. All calls to my office phone are forwarding to my cellphone during this time.

From: Cordova, Daniel A <dcordova@usbr.gov>

Sent: Thursday, August 20, 2020 9:18 AM

To: Spranza, John <John.Spranza@hdrinc.com>; Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren R <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth@Wildlife <Kenneth.Kundargi@wildlife.ca.gov>; matt.johnson@wildlife.ca.gov <matt.johnson@wildlife.ca.gov>; kristal.davis-fadtke@wildlife.ca.gov <kristal.davis-fadtke@wildlife.ca.gov>; jonathan.williams <jonathan.williams@wildlife.ca.gov>; duane.linander@wildlife.ca.gov <duane.linander@wildlife.ca.gov>; La Luz, Felipe@Wildlife <felipe.laluz@wildlife.ca.gov>; Boyd, Ian@Wildlife <Ian.Boyd@Wildlife.ca.gov>; Nancy.A.Haley@usace.army.mil <Nancy.A.Haley@usace.army.mil>; Michael S. Jewell (michael.s.jewell@usace.army.mil) <michael.s.jewell@usace.army.mil>; Kevin.C.Lee@usace.army.mil <Kevin.C.Lee@usace.army.mil>

Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com <CFitzer@esassoc.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com <jason.hassrick@icf.com>; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

Subject: Re: [EXTERNAL] Sites Project Permitting Update

Hi John,

Thanks for the update. One item that caught my attention was the mention of a joint BA for the project. During previous efforts regarding this project Reclamation pointed out that, aside from providing funding for the construction of the dam, it would retain no discretionary Federal involvement or control over operations of the reservoir. In light of this, Reclamation previously recommended section 10 coverage with FWS regarding operations. Is the plan to use one BA for the necessary section 7 consultations and also to support a section 10 consultation?

Thanks,

Dan

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Sent: Friday, August 14, 2020 7:12 AM

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Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel A <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com <CFitzer@esassoc.com>; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; jason.hassrick@icf.com <jason.hassrick@icf.com>; Carper, Mark A <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

Subject: [EXTERNAL] Sites Project Permitting Update

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Greetings from the Sites Project Team,

Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

- Reservoir size will be reduced from 1.8 to 1.5 million acer-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.
- Delevan diversion, pipeline and outfall has been removed.
- Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.

- Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs
- Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.
- Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).
- Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:
 - Project's annualized acre-foot/year (AFY) release of approximately 250k AF
 - Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans
- No pump-back hydropower is anticipated.

As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the *Preliminary Revised Draft EIR/EIS Alternatives* to provide some details for the revised project.

We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

- A joint Draft BA in May 2021
- Two 2081 ITP applications by November 2021 (one operations and one construction)
- Draft 404 and 401 permit packages for a December 2021 submittal
- Draft 401 for a December 2021 submittal
- Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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

To: bbabbittaz@gmail.com
Subject: RE: CalMatters Commentary

Good Morning Bruce,

Date: _____

Please send the completed Application for Interconnection to the appropriate WAPA office. A WAPA representative will contact you when the Application for Interconnection is received. Please allow up to 30 calendar days for processing after receipt by WAPA.

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: Tuesday, August 25, 2020 12:57 PM
To: bbabbittaz@gmail.com
Subject: Re: CalMatters Commentary

Excellent Bruce, Marcia will be contacting you shortly at the email address you provided. Looking forward to catching up.

Thanks
Jerry

From: bruce babbitt <brucebabbitt2000@yahoo.com>
Date: Tuesday, August 25, 2020 at 12:10 PM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: Re: CalMatters Commentary

Jerry,

Really nice to hear from you- and to learn of your new assignment.

I recall our first visit when you came to the 13th floor-- and I heard, for the first time, a thoughtful suggestion of how a single tunnel might suffice.

Your offer to bring me up to speed is gratefully accepted. I should be available most any morning from September 2 onward into mid September and will look to hearing from Marcia.

Please note and use my PRIVATE EMAIL ADDRESS:

Regards,

Bruce

On Tuesday, August 25, 2020, 10:52:21 AM EDT, Jerry Brown <jbrown@sitesproject.org> wrote:

Good Morning Bruce,

I hope you and your family are doing well. I just read your commentary on CalMatters regarding Sites and the Delta Tunnel. I don't know if you heard but I left Contra Costa at the end of 2019 and was brought on as the Sites Project Authority Executive Director in March 2020. At about the time I came to the project, the Board was concluding a "value planning effort" culminating in a new direction for the Sites project which did exactly the things you are recommending in your article. We are preparing a revised EIR and supplemental EIS to reflect these changes and respond to other feedback which should be out mid next year. I'd like to sit down with you (virtually) and discuss the changes.

Can I have my assistant Marcia contact you to make scheduling arrangements?

Thanks

Jerry

From: Haley, Nancy A CIV USARMY CESPCK (USA) [Nancy.A.Haley@usace.army.mil]
Sent: 8/27/2020 1:14:46 PM
To: Spranza, John [John.Spranza@hdrinc.com]; Roberts, Matthew J CIV USARMY CESPCK (USA) [Matthew.J.Roberts@usace.army.mil]
CC: Larson, Ryan T CIV USARMY CESPCK (USA) [Ryan.T.Larson2@usace.army.mil]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)

John,

Let's schedule an informal preapp. That way we can talk about this. I don't think we are really sure where our jurisdiction is, or if we have any/much.

Let us know. Thanks! N

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Tuesday, August 25, 2020 12:00 PM
To: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update (UNCLASSIFIED)

Hi Matthew,

Truth be told, I am not sure there is a complete previous delineation. I have been working on this project since Jan 2019 and was an ex-parte advisor to the project's permitting manager for several years prior to that, and have not seen a delineation other than the attached "update report" that was completed in 2000 by DWR. This report is not very specific to the current project as it only covers the reservoir footprint. I have also included the 2017 Draft EIR/EIS section that discusses wetlands and waters for that particular project alternative that, besides being out of date based on the new project alternative, is in my opinion a bit light on details and figures.

The currently proposed locally preferred alternative is quite different than what was in the 2017 DEIR/EIS in that the reservoir is smaller and there is no Delavan diversion/outfall on the Sacramento River. That has been replaced by utilizing the existing Red Bluff and Hamilton City diversions to fill Sites, and then utilizing excess capacity in the Tehama Colusa Canal to move water south to the Dunnigan area where a new 1,000 cfs pipeline will be built that connects to the Colusa Basin Drain and potentially to the Sacramento River. We are working up some detailed figures and are about 1 week or so from having those ready for external distribution.

I have an email in to DWR asking if they have any additional information and/or the survey data that the update report discusses. I was scheduled to go up to Red Bluff in April to dig through the NODOS files but COVID has prevented that from happening.

I'm more than happy to chat about this.

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Roberts, Matthew J CIV USARMY CESPCK (USA) [mailto:Matthew.J.Roberts@usace.army.mil]
Sent: Monday, August 24, 2020 9:43 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)

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.

CLASSIFICATION: UNCLASSIFIED

John,

Draft_0003531

Would you be able to send the previous delineation. I am currently working at home in response to the COVID pandemic and do not have the hard file. If you can email it to me so I could have a better understanding of it. I would really appreciate it. Thank you very much for your help.

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Monday, August 24, 2020 8:58 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Nancy,
Let me check with my team on this. Are you thinking this would be the "formal" pre-app or the initial meeting to review methods and approach for the delineation as discussed below?

Also, what date do you have on the delineation you were referencing?

Thanks.

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Monday, August 24, 2020 8:49 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

Do you have an idea of when you will be ready for a pre-application meeting? Matthew is going to look at your old delineation to see how it compares to the new NWPR so we have some sort of idea what we are looking at for a PJD, AJD or AR verification.

Thanks - Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 11:13 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Reclamation will be releasing a Supplemental EIS that will have all the changes included. Their alternatives that they have included in the final Feasibility Study that is due to be acted on by end of year bookends our "right-sized" locally preferred project. So, that will be how the S EIS gets updated and addresses the preferred project.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 9:19 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

Subject: RE: Sites Project Permitting Update

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Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 9:14 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 8:41 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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Thanks John,

I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.

Nancy

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 8:27 AM
To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: [Non-DoD Source] RE: Sites Project Permitting Update

Hi Nancy,

We are planning to have ICF perform a delineation to support the permit application packet in 2021. I have Mike Vondergeest leading that up, and we are just waiting for our September 1 funding date to kick that off.

Our intention is to begin meeting with you and your staff in fall of 2020 to consult on the process and review the proposed methods and approach. We anticipate that we will not have access to the majority of the site so we are going to have to use significant imaging, LIDAR, selected surveys in areas where we do have access and groundtruthing.

Mike has a draft agenda already prepped, and soon after Sept 1 we will send that over for your review and comment and start scheduling the pre-app meetings.

We're looking forward to getting this started and will have our funding in place through 2021. Please let me know if you would like any background data on the project and we can share that with you and your staff.

John

John Spranza

-----Original Message-----

From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
Sent: Friday, August 14, 2020 7:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
Subject: RE: Sites Project Permitting Update

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,

We have not completed a Jurisdictional Determination on this project as of yet have we? Either way, we will need to see what exactly our jurisdiction would be for this project.

Thanks - Nancy

Nancy A Haley
Chief, CA North Section
Regulatory Division, USACE
916-557-7731

-----Original Message-----

From: Spranza, John [mailto:John.Spranza@hdrinc.com]
Sent: Friday, August 14, 2020 7:12 AM
To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.Williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova, Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>
Subject: [Non-DoD Source] Sites Project Permitting Update

Greetings from the Sites Project Team,

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- * Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021
- * Draft Section 106 package to SHPO in March 2021

I'd be happy to answer any questions so feel free to email or call me.

Regards,

John

Sites Project Environmental Permitting Integration Lead

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 <mailto:john.spranza@hdrinc.com>

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5d2d3f16e2a9%7C0%7C0%7C637338841794696969&sdata=U69n7QtmuB0RHbAayojE3Pg6q0K2L8IQOh%2BzrA1of%2Bs%3D&
p;reserved=0>

CLASSIFICATION: UNCLASSIFIED

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 8/27/2020 6:57:30 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: Re: Sites Project Permitting Update (UNCLASSIFIED)

Agreed. I was holding off until Monday when Monique gets back to check dates and I also wanted to see the PD as that is important for this meeting.
I will respond to Nancy tomorrow.

Sent from my iPhone

> On Aug 27, 2020, at 5:54 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

>
> 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.

>
> Hey John - Lets go ahead and get this on the calendar and work with ICF/ESA to prep for this. It might be interesting to see if they feel they have no or very limited jurisdiction.

> I am not recused from this and can participate.

> Ali

>
> -----
> Alicia Forsythe | Environmental Planning and Permitting Manager | Sites Reservoir Project |
916.880.0676 | aforsythe@sitesproject.org |
<https://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.sitesproject.org%2F&data=02%7C01%7Cjohn.spranza%40hdrinc.com%7C9e03da8d39c141b8826208d84aecde27%7C3667e201cbdc48b39b425d2d3f16e2a9%7C0%7C0%7C637341728488288626&data=fhMhTPVAgA%2B0yO7HJ87sFXw0AB8Q9NRH%2FR1Qkizw6cs%3D&reserved=0>

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> -----Original Message-----

> From: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
> Sent: Thursday, August 27, 2020 1:15 PM
> To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>
> Cc: Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; Alicia Forsythe <aforsythe@sitesproject.org>
> Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)

> John,

> Let's schedule an informal preapp. That way we can talk about this. I don't think we are really sure where our jurisdiction is, or if we have any/much.

> Let us know. Thanks! N

> -----Original Message-----

> From: Spranza, John [mailto:John.Spranza@hdrinc.com]
> Sent: Tuesday, August 25, 2020 12:00 PM
> To: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
> Cc: Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
> Subject: [Non-DoD Source] RE: Sites Project Permitting Update (UNCLASSIFIED)

> Hi Matthew,

> Truth be told, I am not sure there is a complete previous delineation. I have been working on this project since Jan 2019 and was an ex-parte advisor to the project's permitting manager for several years prior to that, and have not seen a delineation other than the attached "update report" that was completed in 2000 by DWR. This report is not very specific to the current project as it only covers the reservoir footprint. I have also included the 2017 Draft EIR/EIS section that discusses wetlands and waters for that particular project alternative that, besides being out of date based on the new project alternative, is in my opinion a bit light on details and figures.

> The currently proposed locally preferred alternative is quite different than what was in the 2017 DEIR/EIS in that the reservoir is smaller and there is no Delavan diversion/outfall on the Sacramento River. That has been replaced by utilizing the existing Red Bluff and Hamilton City diversions to fill Sites, and then utilizing excess capacity in the Tehama Colusa Canal to move water south to the Dunnigan area where a new 1,000 cfs pipeline will be built that connects to the Colusa Basin Drain and potentially to the Sacramento River. We are working up some detailed figures and are about 1 week or so from having those ready for external distribution.

>
> I have an email in to DWR asking if they have any additional information and/or the survey data that the update report discusses. I was scheduled to go up to Red Bluff in April to dig through the NODOS files but COVID has prevented that from happening.

>
> I'm more than happy to chat about this.

>
> John

>
> John Spranza

>
> D 916.679.8858 M 818.640.2487

>
> -----Original Message-----
> From: Roberts, Matthew J CIV USARMY CESPCK (USA) [mailto:Matthew.J.Roberts@usace.army.mil]
> Sent: Monday, August 24, 2020 9:43 AM
> To: Spranza, John <John.Spranza@hdrinc.com>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
> Cc: Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
> Subject: RE: Sites Project Permitting Update (UNCLASSIFIED)

>
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>
>
> CLASSIFICATION: UNCLASSIFIED

>
> John,
> Would you be able to send the previous delineation. I am currently working at home in response to the COVID pandemic and do not have the hard file. If you can email it to me so I could have a better understanding of it. I would really appreciate it. Thank you very much for your help.

>
> -----Original Message-----
> From: Spranza, John [mailto:John.Spranza@hdrinc.com]
> Sent: Monday, August 24, 2020 8:58 AM
> To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
> Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
> Subject: [Non-DoD Source] RE: Sites Project Permitting Update

>
> Nancy,
> Let me check with my team on this. Are you thinking this would be the "formal" pre-app or the initial meeting to review methods and approach for the delineation as discussed below?

>
> Also, what date do you have on the delineation you were referencing?

> Thanks.

> John

>
> John Spranza

>
> D 916.679.8858 M 818.640.2487

>
>
> -----Original Message-----
> From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
> Sent: Monday, August 24, 2020 8:49 AM
> To: Spranza, John <John.Spranza@hdrinc.com>
> Cc: Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>; Larson, Ryan T CIV USARMY CESPCK (USA) <Ryan.T.Larson2@usace.army.mil>
> Subject: RE: Sites Project Permitting Update

>
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>
>
> Hi John,

> Do you have an idea of when you will be ready for a pre-application meeting? Matthew is going to look at your old delineation to see how it compares to the new NWPR so we have some sort of idea what we are looking at for a PJD, AJD or AR verification.

> Thanks - Nanc

> -----Original Message-----

> From: Spranza, John [mailto:John.Spranza@hdrinc.com]

> Sent: Friday, August 14, 2020 11:13 AM

> To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>

> Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

> Subject: [Non-DoD Source] RE: Sites Project Permitting Update

> Reclamation will be releasing a supplemental EIS that will have all the changes included. Their alternatives that they have included in the final Feasibility Study that is due to be acted on by end of year bookends our "right-sized" locally preferred project. So, that will be how the S EIS gets updated and addresses the preferred project.

> John Spranza

> D 916.679.8858 M 818.640.2487

> -----Original Message-----

> From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]

> Sent: Friday, August 14, 2020 9:19 AM

> To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>

> Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

> Subject: RE: Sites Project Permitting Update

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> Or are you just using the old EIS? They are no longer involved correct? Let me know if you need to talk. Nanc

> -----Original Message-----

> From: Spranza, John [mailto:John.Spranza@hdrinc.com]

> Sent: Friday, August 14, 2020 9:14 AM

> To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>

> Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>

> Subject: [Non-DoD Source] RE: Sites Project Permitting Update

> We do understand that, and want to ensure a productive use of your time. We do think that it is important to make sure you are okay with the methodology and approach before we get too far along. So, before any formal pre-apps, we can hopefully get that discussed and agreed to in fall 2020.

> John Spranza

> D 916.679.8858 M 818.640.2487

> -----Original Message-----

> From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]

> Sent: Friday, August 14, 2020 8:41 AM

> To: Spranza, John <John.Spranza@hdrinc.com>; Roberts, Matthew J CIV USARMY CESPCK (USA) <Matthew.J.Roberts@usace.army.mil>

> Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>

> Subject: RE: Sites Project Permitting Update

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>
> Thanks John,
>
> I would be very helpful before any preapps to have the delineation. As I remember, we did not have much jurisdiction and with the NWPR we will need to look closely.
>
> Nancy
>
> -----Original Message-----
> From: Spranza, John [mailto:John.Spranza@hdrinc.com]
> Sent: Friday, August 14, 2020 8:27 AM
> To: Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>
> Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
> Subject: [Non-DoD Source] RE: Sites Project Permitting Update
>
> Hi Nancy,
> We are planning to have ICF perform a delineation to support the permit application packet in 2021. I have Mike Vondergeest leading that up, and we are just waiting for our September 1 funding date to kick that off.
>
> Our intention is to begin meeting with you and your staff in fall of 2020 to consult on the process and review the proposed methods and approach. We anticipate that we will not have access to the majority of the site so we are going to have to use significant imaging, LIDAR, selected surveys in areas where we do have access and groundtruthing.
>
> Mike has a draft agenda already prepped, and soon after Sept 1 we will send that over for your review and comment and start scheduling the pre-app meetings.
>
> We're looking forward to getting this started and will have our funding in place through 2021. Please let me know if you would like any background data on the project and we can share that with you and your staff.
>
> John
>
> John Spranza
>
> D 916.679.8858 M 818.640.2487
>
>
> -----Original Message-----
> From: Haley, Nancy A CIV USARMY CESPCK (USA) [mailto:Nancy.A.Haley@usace.army.mil]
> Sent: Friday, August 14, 2020 7:59 AM
> To: Spranza, John <John.Spranza@hdrinc.com>
> Cc: Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Nepstad, Michael G CIV USARMY CESPCK (USA) <Michael.G.Nepstad@usace.army.mil>
> Subject: RE: Sites Project Permitting Update
>
> 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,
>
> We have not completed a Jurisdictional Determination on this project as of yet have we? Either way, we will need to see what exactly our jurisdiction would be for this project.
>
> Thanks - Nancy
>
> Nancy A Haley
> Chief, CA North Section
> Regulatory Division, USACE
> 916-557-7731
>
> -----Original Message-----
> From: Spranza, John [mailto:John.Spranza@hdrinc.com]
> Sent: Friday, August 14, 2020 7:12 AM
> To: Evan Sawyer - NOAA Federal <evan.sawyer@noaa.gov>; Sullivan, Lauren <lauren_sullivan@fws.gov>; Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov) <Kenneth.Kundargi@wildlife.ca.gov>; Johnson, Matt@wildlife <Matt.Johnson@wildlife.ca.gov>; Davis-Fadtke, Kristal@wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Williams, Jonathan@wildlife <Jonathan.Williams@wildlife.ca.gov>; Duane Linander (Duane.Linander@wildlife.ca.gov) <Duane.Linander@wildlife.ca.gov>; La Luz, Felipe@wildlife <Felipe.LaLuz@wildlife.ca.gov>; Boyd, Ian@wildlife <Ian.Boyd@wildlife.ca.gov>; Haley, Nancy A CIV USARMY CESPCK (USA) <Nancy.A.Haley@usace.army.mil>; Jewell, Michael S CIV USARMY CESPCK (USA) <Michael.S.Jewell@usace.army.mil>; Lee, Kevin C CIV (USA) <Kevin.C.Lee@usace.army.mil>
> Cc: Jerry Brown <jbrown@sitesproject.org>; Berryman, Ellen (Ellen.Berryman@icf.com) <Ellen.Berryman@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>; Cordova,

Daniel (dcordova@usbr.gov) <dcordova@usbr.gov>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Kevin Spesert (kspesert@sitesproject.org) <kspesert@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; CFitzer@esassoc.com; Lecky, Jim <Jim.Lecky@icf.com>; Hendrick, Mike <Mike.Hendrick@icf.com>; Hassrick, Jason <Jason.Hassrick@icf.com>; Mark Carper <mcarper@usbr.gov>; Martin, Nathaniel J <nmartin@usbr.gov>; Lassell, Susan (Susan.Lassell@icf.com) <Susan.Lassell@icf.com>; Risse, Danielle <Danielle.Risse@hdrinc.com>

> Subject: [Non-DoD Source] Sites Project Permitting Update

> Greetings from the Sites Project Team,

> Much has happened since our last email update in March, and we wanted to provide another update on the project status and major activities. As discussed in the March 20th update, the Value Planning Workgroup provided a preferred alternative (VP-7) that was subsequently reviewed and approved by the Authority Board as a right-sized project that meets the current and future water needs of the project participants, including the California investment of water for the environment under the WISP program while also addressing many of the major comments received on the Authority's 2017 draft EIR/EIS. As a reminder, the following comprises the major changes to the 2017 project have been approved as part of the Value Planning Alternative 7 (VP-7), now the Proposed Project:

> * Reservoir size will be reduced from 1.8 to 1.5 million acer-feet. This reduces the number and size of the dams and saddle dams along with related gates, towers, tunnels, and pumping facilities needed to fill Sites Reservoir.

> * Delevan diversion, pipeline and outfall has been removed.

> * Diversions from the Sacramento River will be from the existing Red Bluff Diversion Facility and Glen Colusa Irrigation District's diversion at Hamilton City.

> * Release capacity to the Sacramento River will be reduced from 1,500 to 1,000 cfs

> * Water will be released from Sites Reservoir to the existing Tehama Colusa Canal which will be used to deliver water to the southern terminus of the canal. Releases would then be conveyed from the southern end of the T-C Canal to the Colusa Basin Drain for release into the Sacramento River via the Knight's Landing outfall gates or the Yolo Bypass. There is an Alternative that has a release on the Sacramento River at a new outfall near Tyndall Landing, above Knights Landing.

> * Both Alternatives include construction of a new 1,000 cfs pipeline near Dunnigan (See attached figure).

> * Our modeling team is working on providing new results on a range of operational/diversion criteria that are being developed around the following metrics:

> o Project's annualized acre-foot/year (AFY) release of approximately 250k AF

> o Project range for cost is \$650-\$710 per AF without WIFIA or \$600-660 with WIFIA loans

> * No pump-back hydropower is anticipated.

> As a result of the above changes, the Authority's has been working to update the project description and alternatives, the draft revised project description is expected in September 2020 and the alternatives will follow shortly thereafter. The Authority has also decided to recirculate a revised draft EIR for the project, and Reclamation will develop a Supplemental EIS; both of these documents are in the process of being prepared. We anticipate that the revised documents will be available for public review in July of 2021. I have attached a working draft of the Preliminary Revised Draft EIR/EIS Alternatives to provide some details for the revised project.

> We will be reaching out soon to schedule meetings and continue permitting coordination in support of the Project submitting multiple permit application packages in 2021. I will follow up with a detailed schedule for key permits once we have that finalized, but some key 2021 submittals and current schedule are:

> * A joint Draft BA in May 2021

> * Two 2081 ITP applications by November 2021 (one operations and one construction)

> * Draft 404 and 401 permit packages for a December 2021 submittal

> * Draft 401 for a December 2021 submittal

> * Draft CVFPB Encroachment Permit and Section 408 (if needed) permission documents in December 2021

>
> * Draft Section 106 package to SHPO in March 2021
>
> I'd be happy to answer any questions so feel free to email or call me.
>
>
>
> Regards,
>
>
>
> John
>
> Sites Project Environmental Permitting Integration Lead
>
>
>
> 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 <mailto:john.spranza@hdrinc.com>
>
> hdrinc.com/follow-us
<BlockedBlockedBlockedBlockedBlockedBlockedhttps://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhdrinc.com%2Ffollow-us&data=02%7C01%7Cjohn.spranza%40hdrinc.com%7C9e03da8d39c141b8826208d84aecde27%7C3667e201cbdc48b39b425d2d3f16e2a9%7C0%7C0%7C637341728488298622&sd=ewondn%2FCL1vUhiyMLqynR0%2BDAUguhiugRKkVGEHF31o%3D∓reserved=0>
>
> hdrinc.com/follow-us
<BlockedBlockedBlockedBlockedBlockedBlockedhttps://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fhdrinc.com%2Ffollow-us&data=02%7C01%7Cjohn.spranza%40hdrinc.com%7C9e03da8d39c141b8826208d84aecde27%7C3667e201cbdc48b39b425d2d3f16e2a9%7C0%7C0%7C637341728488298622&sd=ewondn%2FCL1vUhiyMLqynR0%2BDAUguhiugRKkVGEHF31o%3D∓reserved=0>
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> CLASSIFICATION: UNCLASSIFIED

From: Tull, Robert/SAC [Robert.Tull@jacobs.com]
Sent: 8/28/2020 2:25:26 PM
To: Eric Leitterman [ELeitterman@valleywater.org]
CC: Katrina Jessop [KJessop@valleywater.org]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]; Leaf, Rob/SAC [Rob.Leaf@jacobs.com]; Micko, Steve/SAC [Steve.Micko@jacobs.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Thayer, Reed/SAC [Reed.Thayer@jacobs.com]; Whittington, Chad/SAC [Chad.Whittington@jacobs.com]
Subject: RE: Sites - CalSIM Model Request for Scenario B

Eric,

Below are tables showing a post-processed approximation of **Alternative VP7 Sites Reservoir releases** to SCVWD. You will need account for conveyance and Delta carriage water losses in developing an estimate of deliveries to SCVWD.

The results in Table 1 and Table 2 are post-processed outputs of the CalSim study: DCR2015_merge_SitesON_WaterFixOFF_CALSIM_DRAFT_11-25-19_P2b_1_5_scnB_1kPipe. This CalSim study for alternative VP7 was developed as part of the preliminary sensitivity analysis that was included in the Sites Project Value Planning Report. This model was developed to evaluate the volume released from Sites under varying storage and conveyance capacities. Per the definition of Alternative VP7, it assumes a 1.5 MAF storage capacity, 1,000 cfs release capacity, and diversion criteria from Scenario B. Since this model was developed for preliminary sensitivity purposes, it is not appropriate for detailed analysis of member deliveries. The post-processing exercise used to develop these values is based on an average annual release from Sites Reservoir of 243 TAF, with members receiving 193 TAF and average annual release of 16 TAF to SCVWD.

We are currently developing modeling capability to more explicitly account for and track member reservoir releases and deliveries. Future studies will also use a new baseline that will include the 2019 BiOps and 2020 SWP ITP.

Let us know if you have any questions.

Thanks,
 Rob

Table 1. Average Annual Sites Releases to SCWVD.

Average Annual Sites Releases to Santa Clara Valley Water District - VP7 (TAF)	
Long-Term Average	16.0
Wet	2.8
Above Normal	5.8

Below Normal	18.1
Dry	34.9
Critical	23.2

Table 2. Annual Sites Releases to SCWVD.

Sites Releases to Santa Clara Valley Water District	
WY	Release (TAF)
1922	1.5
1923	25.4
1924	38.1
1925	10.5
1926	18.4
1927	0.0
1928	25.4
1929	49.3
1930	15.5
1931	0.2
1932	11.0
1933	3.6
1934	9.8
1935	1.5
1936	1.5
1937	24.4
1938	0.0
1939	49.3
1940	1.5
1941	0.0
1942	0.0
1943	12.0
1944	49.3
1945	14.9
1946	21.9
1947	28.7

1948	0.9
1949	21.8
1950	21.0
1951	1.5
1952	0.0
1953	0.0
1954	1.5
1955	49.3
1956	0.0
1957	25.4
1958	0.0
1959	25.4
1960	49.3
1961	23.0
1962	15.9
1963	0.0
1964	49.3
1965	12.0
1966	24.6
1967	0.0
1968	25.4
1969	0.0
1970	0.0
1971	0.0
1972	25.4
1973	1.5
1974	0.0
1975	0.0
1976	49.3
1977	47.8
1978	1.5
1979	25.4
1980	1.5
1981	49.3
1982	0.0

1983	0.0
1984	0.0
1985	49.3
1986	12.0
1987	49.3
1988	28.8
1989	5.9
1990	16.7
1991	4.4
1992	8.4
1993	0.6
1994	22.0
1995	0.0
1996	12.0
1997	12.0
1998	0.0
1999	12.0
2000	1.5
2001	49.3
2002	49.3

From: Tull, Robert/SAC

Sent: Tuesday, August 25, 2020 5:20 PM

To: Eric Leitterman <ELeitterman@valleywater.org>

Cc: Katrina Jessop <KJessop@valleywater.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Alicia Forsythe <aforseythe@sitesproject.org>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Eric,

Per our conversation, I talked with Rob and we will provide you with a time series of deliveries by Friday.

Let me know if you have any questions.

Thanks,
Rob

From: Eric Leitnerman <ELeitnerman@valleywater.org>

Sent: Tuesday, August 25, 2020 10:34 AM

To: Tull, Robert/SAC <Robert.Tull@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>

Cc: Katrina Jessop <KJessop@valleywater.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>

Subject: [EXTERNAL] RE: Sites - CalSIM Model Request for Scenario B

Hi Rob and Ali,

Wanted to check in on the status of my request and wanted to give you a heads up that Cindy expressed an interest possibly setting up a phone call for sometime this week or next to better understand the modeling. The big thing on her mind right now is the ability to get our what out of Sites if DWR wont convey it in years when our SWP allocation greater than 50%.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL

Imported Water Unit

Water Supply Division

Tel. (408) 630-2669 / Cell. (408) 784-4966

eleitnerman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

5750 Almaden Expressway, San Jose CA 95118

www.valleywater.org

Clean Water · Healthy Environment · Flood Protection

From: Alicia Forsythe <aforsythe@sitesproject.org>

Sent: Thursday, August 20, 2020 5:17 PM

To: Eric Leitteman <ELeitteman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>; robert.tull@jacobs.com; Leaf, Rob/SAC <Rob.Leaf@jacobs.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>

Subject: FW: Sites - CalSIM Model Request for Scenario B

Eric – Thanks for the great questions. These are things that the CH2M team would be best answering.

I've included Rob Tull and team on this email and coordinated with Rob. He is working on responses to your questions and will circle back in the next few days.

Rob – Please work directly with Eric and keep Erin or I in the loop.

Thanks all!

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: Eric Leitteman <ELeitteman@valleywater.org>

Sent: Wednesday, August 19, 2020 1:03 PM

To: Alicia Forsythe <aforsythe@sitesproject.org>

Cc: Katrina Jessop <KJessop@valleywater.org>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Thanks again for facilitating the delivery of the VP7 model to Santa Clara. I spent some time looking through the files and I have some follow up questions for the CH2M-Jacobs consultants that I was hoping you could relay.

Based on the attached schematic previously provided to me by Rob Leaf, it looks like model deliveries at Funks to the Sites Participants equals the combined flows of C30 + C30A + C30B + C30C + C31. Similarly the combined flows of C32 + C32B + C32C + C34D would be the public benefit share of releases. Is this correct?

If so then appears that the participant share of releases is only 129 TAF as opposed to the 203 TAF reported in the Value Planning Report. However, the combined total of all flows (C30 + C30A + C30B + C30C + C31 + C32 + C32B + C32C + C34D) is 242 TAF, about the same as is in the Value Planning Report. Does this have something to do with maintaining the old Reclamation exchange logic as a surrogate for a potential non-investment Reclamation exchange with no

carry over storage? Does this mean that the 40 TAF/203 TAF split between public benefits and participating water agency benefits in the Value Planning Report is a post-processing split?

If all of the above is correct, does that make it inappropriate to calculate SOD participant share based a post-processing analysis of the change in total exports (D419_SWP + D419_CVP + D418).

Based on what I have said above does it sound like I received the correct copy of the model? I am pretty sure I did, but figured it couldn't hurt to double check.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

Clean Water · Healthy Environment · Flood Protection

From: Eric Leitterman

Sent: Friday, July 31, 2020 11:12 AM

To: 'Whittington, Chad/SAC' <Chad.Whittington@jacobs.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Thanks Chad. I was able to download the model successfully I have also saved a copy of the caveats to the same folder.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

5750 Almaden Expressway, San Jose CA 95118

www.valleywater.org

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From: Whittington, Chad/SAC <Chad.Whittington@jacobs.com>

Sent: Friday, July 31, 2020 11:02 AM

To: Eric Leitnerman <ELeitnerman@valleywater.org>; Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <Kjessop@valleywater.org>

Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Tull, Robert/SAC <Robert.Tull@jacobs.com>

Subject: RE: Sites - CalSIM Model Request for Scenario B

Eric,

I have sent you a file transfer of the Scenario B Value Planning CalSim model (VP7). Let me know if you got the email titled "VP7 CalSim Study". It should include the following link to the transfer:

<https://iftt.jacobs.com/download.aspx?ID=3710cae8-bb90-4e81-955a-4262653d15ab&RID=049459e0-3fc3-4697-b7ba-b4413c71acc5>

This CalSim study (DCR2015_merge_SitesON_WaterFixOFF_CALSIM_DRAFT_11-25-19_P2b_1_5_scnB_1kPipe.7z) was developed for preliminary sensitivity analysis that was included in the Sites Project Value Planning Report, which evaluated conveyance facility sizing. This model was developed to evaluate the volume released from Sites under varying storage and conveyance capacities. It assumes a 1.5 MAF storage capacity, 1,000 cfs release capacity, and diversion criteria from Scenario B. The model assumes old Reclamation exchange logic that was used as a surrogate for the potential non-investment Reclamation exchange with no carry over storage. Consequently, it is not appropriate for detailed analysis of member deliveries or Shasta exchange. Additionally, all Value Planning sensitivity studies are based on a DCR2015 baseline. Future studies will be updated to reflect actions in the 2019 BiOps and 2020 SWP ITP.

Please let me know if you have any questions or trouble accessing the contents of this package.

Best,

Chad Whittington

Jacobs

Water Resources Engineer | BIAF

916.286.0354

Chad.Whittington@jacobs.com

2485 Natomas Park Dr., Suite 600
Sacramento, CA 95833
USA
www.jacobs.com

From: Eric Leitnerman <ELeitnerman@valleywater.org>
Sent: Wednesday, July 29, 2020 3:56 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>
Subject: [EXTERNAL] RE: Sites - CalSIM Model Request for Scenario B

Thanks Ali.

Chad, when you send us the model can you put it on an online drive (sharepoint, dropbox, etc) so we can download. I have a had issue with receiving zip files through my work email.

ERIC LEITNERMAN

ASSISTANT ENGINEER II - CIVIL
Imported Water Unit
Water Supply Division
Tel. (408) 630-2669 / Cell. (408) 784-4966
eleitnerman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, July 29, 2020 3:06 PM
To: Eric Leitnerman <ELeitnerman@valleywater.org>; Katrina Jessop <KJessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Micko, Steve/SAC <Steve.Micko@jacobs.com>; Whittington, Chad/SAC <Chad.Whittington@jacobs.com>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I've touched bases with CH2M and they can provide the Scenario B Calsim model this week. I've copied Chad Whittington from CH2M. Chad will be sending you the model. Along with the model, he will provide some of the underlying assumptions/caveats.

Please let us know if you have any questions on the model once you've received.

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: Alicia Forsythe
Sent: Tuesday, July 28, 2020 2:45 PM
To: Eric Leitnerman <Eleitnerman@valleywater.org>; Katrina Jessop <Kjessop@valleywater.org>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites - CalSIM Model Request for Scenario B

Hi Eric – I am checking with CH2M on this and will circle back to you shortly.

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: Eric Leitnerman <Eleitnerman@valleywater.org>
Sent: Tuesday, July 28, 2020 11:13 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Katrina Jessop <Kjessop@valleywater.org>
Subject: Sites - CalSIM Model Request for Scenario B

Hi Ali,

Valley Water would like a copy of the Scenario B Value Planning report CalSIM model so that we use it for inputs for our internal WEAP modeling of agency's operations. Is it possible to receive this information this week?

We recognize that summary results are available in the Value Planning Report but we need a greater level of detail for our WEAP inputs.

ERIC LEITTERMAN

ASSISTANT ENGINEER II - CIVIL

Imported Water Unit

Water Supply Division

Tel. (408) 630-2669 / Cell. (408) 784-4966

eleitterman@valleywater.org



SANTA CLARA VALLEY WATER DISTRICT

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www.valleywater.org

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North of the Delta
Offstream Storage Investigation

**Progress
Report
Appendix B:
Wetland Delineation
Field Studies Report**

April 2000

Integrated
Storage
Investigations

CALFED
BAY-DELTA
PROGRAM

North of the Delta
Offstream Storage Investigation

Progress Report Appendix B: Wetland Delineation Field Studies Report

**Report prepared by:
Joyce Lacey Rickert
Environmental Specialist IV**

**Graphics prepared by:
Mark Dombrowski
Junior Engineering Technician**

**California Department of Water Resources
Division of Planning and Local Assistance, Northern District**

April 2000

Integrated
Storage
Investigations

CALFED
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PROGRAM

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Wetland Delineation Field Studies Report

Introduction

Section 404 of the Clean Water Act requires the U.S. Army Corps of Engineers' authorization for projects involving the placement of "fill" material into any "waters of the United States." The decision to grant such a permit is based on a review of the project's impacts to a number of economic and environmental factors, including the quantity and types of wetlands. The Corps defines wetlands as "areas that are periodically or permanently inundated by surface or groundwater and support vegetation adapted for life in saturated soil."

This report summarizes the two-year survey of wetlands and other waters of the U.S. within the footprint of the four potential offstream storage reservoir locations: Sites Reservoir, Colusa Cell, Thomes-Newville Reservoir, and the Red Bank Project (Figure 1).

Methods

Stereo pairs of 1:12,000 and 1:6,000 scale color aerial photos were reviewed for wetland types prior to field studies. All aerial photography used in the wetland identifications were taken in late spring to differentiate seasonal wetlands from annual grassland cover. Wetland types were identified on the photographs, and representative types were selected throughout each reservoir for field verification. Selection of representative types was based on soil types and aerial photo wetland vegetation "signatures." Field visits were conducted during and after rainfall events in order to observe hydrology conditions. These representative sites and additional sites were revisited later in the season when wetland vegetation was identifiable to the species level. Wetland delineations were made using the "routine method," as described in the 1987 *Corps of Engineers Wetland Delineation Manual*. This method involves a field review of the hydrology conditions, plant species' composition, and hydric soil indicators. The Corps' regulatory specialists were also consulted for guidance on field sampling and data presentation.

Results of the wetland delineations and field verifications were used to produce a draft map of jurisdictional wetlands. Stereo pairs of aerial photos for the inundation areas of each reservoir were studied, and all areas that matched signatures of field-verified wetland types were mapped as jurisdictional wetlands. Questionable areas were also identified as wetlands and marked for future field verification. All wetland polygons were mapped and acreage was calculated.

Other waters of the U.S. were also identified on the aerial photos. These included stock ponds, small reservoirs, and tributaries. All drainages were identified as either main tributaries (i.e., width of streambed equal to or wider

than 15 feet and generally perennial) or tributaries (i.e., width of streambed less than 15 feet and drainages usually ephemeral, possibly perennial). Stream width measurements were made throughout the project sites. Drainages with wetlands or jurisdictional riparian areas were classified as wetlands.

All waters of the U.S. were mapped using the procedure outlined above. The acreages for all waters of the U.S. and linear distances (miles) of all drainages were then calculated. Attachment A shows the stream width measurement data for drainages within the proposed reservoir sites.

The Corps' regulatory specialists have not verified these maps. Field verification of these maps will involve site visits to each wetland delineation site by the Corps' regulatory specialist.

Results

Areas identified as jurisdictional wetlands represent approximately 2 percent of the surface area of each reservoir footprint. The acreage and wetland types within each reservoir area are presented in Tables 1 through 4. Information on other waters of the U.S. is also included in these tables. The waters of the U.S. acreage for all reservoir locations are summarized in Table 5. Throughout this report, all data are presented with the most southern reservoir location first (i.e., Sites Reservoir) and the northern reservoir last (i.e., Red Bank Project).

Discussion

The wetland type, quality, and quantity within a given location are dependent on a number of factors, including soil types, site geology (evidence of faulting and springs), and land management. The three southern reservoir locations were similar in dominant wetland types and distribution patterns. The Red Bank Project is dominated by steep, well-drained slopes, which supported few seasonal or emergent wetland areas. Wetland types will be addressed in general terms and site-specific information given for each reservoir area.

Sites Reservoir and Colusa Cell

Seasonal wetlands account for over 75 percent of the jurisdictional wetlands identified within the Sites Reservoir footprint and 84 percent of the Colusa Cell jurisdictional wetlands (Tables 1 and 2). This very common wetland type is inundated by surface water or saturated by groundwater during the winter and spring months. Most of these seasonal wetlands were dry by early summer and are strongly associated with low-lying areas of clay or clay loam soils (Tables 6 and 7). Many of the plants found in these wetlands are dry and brown during the summer months, making the wetlands almost indistinguishable from the surrounding annual grasslands. Dominant plant species include *Eleocharis*

macrostachya (spike rush), *Hordeum marinum* ssp, *Gussoneanum* (Mediterranean baryle), and *Rumes* spp (dock).

Table 1. Sites Reservoir Waters of the U.S.

Wetlands and Other Waters	Acres	Linear Distance (Miles)
Wetlands	201	
Other Waters	175	
Total Waters of the U.S.	376	
Total Reservoir Area	14,162	
Wetland Types		
Alkaline	19	
Emergent	2	
Riparian	22	
Seasonal	153	
Vernal Pools	5	
Total	201	
Other Waters		
Major Tributaries	82	25
Tributaries	77	123
Ponds/Small Reservoirs	16	
Total	175	148

Table 2. Colusa Cell Waters of the U.S.

Wetlands and Other Waters	Acres	Linear Distance (Miles)
Wetlands	312	
Other Waters	135	
Total Waters of the U.S.	447	
Total Reservoir Area	13,664	
Wetland Types		
Alkaline	35	
Emergent	0	
Riparian	11	
Seasonal	263	
Vernal Pools	3	
Total	312	
Other Waters		
Major Tributaries	30	15
Tributaries	81	143
Ponds/Small Reservoirs	24	
Total	135	158

Table 3. Newville Reservoir Waters of the U.S.

Wetlands and Other Waters	Acres	Linear Distance (Miles)
Wetlands	413	
Other Waters	231	
Total Waters of the U.S.	644	
Total Reservoir Area	17,073	
Wetland Types		
Alkaline	3	
Emergent	6	
Riparian	77	
Seasonal	304	
Vernal Pools	23	
Total	413	
Other Waters		
Major Tributaries	59	17
Tributaries	106	223
Ponds/Small Reservoirs	66	
Total	231	148

Table 4. Red Bank Project Waters of the U.S.

Wetlands and Other Waters	Acres	Linear Distance (Miles)
Wetlands	83	
Other Waters	152	
Total Waters of the U.S.	235	
Total Reservoir Area	4,905	
Wetland Types		
Emergent/Seasonal	7	
Riparian	76	
Total	83	
Other Waters		
Major Tributaries	71	17
Tributaries	47	110
Ponds/Small Reservoirs	34	
Total	152	127

Table 5. Offstream Storage Waters of the U.S.

Reservoir Site	Reservoir Size (Acres)	Waters of the U.S. (Acres)	Wetlands (Acres)
Sites	14,162	376	201
Colusa Cell	13,664	447	312
Newville	17,073	644	413
Red Bank Project	4,905	235	83

Table 6. Sites Reservoir Seasonal Wetlands Soil Type

Pool Number	Date Pool Visited	Soil Name	Soil Sample Color
S-1	4/14/98	Altamont-Contra Costa clay loam	
S-2	5/8/98	Altamont-Contra Costa clay loam, slightly eroded, hilly, 16-30% slopes	5Y 3/1
S-3	5/8/98	Altamont clay loam, slightly eroded; hilly	5Y 4/1
S-3	5/8/98	Altamont clay loam, slightly eroded; hilly	5Y 3/1
S-4	5/26/98	Contra Costa clay loam, slightly eroded, very steep	
S-5	5/26/98	Forgeus clay, undulating	5Y 3/1
S-5	5/26/98	Forgeus clay, undulating	5Y 4/1
S-6	6/5/98	Myers clay, 0-3% slopes	5Y 4/1
S-6	6/5/98	Myers clay, 0-3% slopes	10YR 3/3
S-6	6/5/98	Myers clay, 0-3% slopes	10YR 6/6
S-6	6/5/98	Myers clay, 0-3% slopes	5Y 4/1
S-6	6/5/98	Myers clay, 0-3% slopes	5Y 4/1
S-7	6/5/98	Antone clay loam, strong alkali	2.5Y 4/0
S-7	6/5/98	Antone clay loam, strong alkali	5Y 4/1
S-7	6/5/98	Antone clay loam, strong alkali	10YR 5/8
S-8	6/5/98	Antone clay loam, strong alkali	10YR 5/8
S-8	6/5/98	Antone clay loam, strong alkali	10YR 4/1
S-8	6/5/98	Antone clay loam, strong alkali	10YR 3/3
S-9	6/9/98	Myers clay loam, 0-3% slopes	
S-10	6/9/98	Altamont-Contra Costa clays, 15-30% slopes	
S-11	6/9/98	Zamora silty clay loam, 0-2% slopes	10 YR 4/2
S-11	6/9/98	Zamora silty clay loam, 0-2% slopes	10 YR 3/2
S-11	6/9/98	Zamora silty clay loam, 0-2% slopes	10 YR 5/6
S-12	10/15/98	Altamont clay loam, slightly eroded; undulating to rolling	10 YR 3/2+3
S-13	10/15/98	Altamont clay loam, slightly eroded; undulating to rolling	10 YR 3/2
S-13	10/15/98	Altamont clay loam, slightly eroded; undulating to rolling	10 YR 2/2
S-13	10/15/98	Altamont clay loam, slightly eroded; undulating to rolling	5 YR 5/8
S-14	10/15/98	Altamont-Contra Costa clay loam, slightly eroded, hilly, 16-30% slopes	5 Y 4/2
S-14	10/15/98	Altamont-Contra Costa clay loam, slightly eroded, hilly, 16-30% slopes	5 YR 5/8
S-15	10/15/98	Myers clay loam, gently undulating, 0-2% slopes	10 YR 3/2
S-15	10/15/98	Myers clay loam, gently undulating, 0-2% slopes	10 Y 5/8
S-16	3/4/99	Altamont clay loam, slightly eroded; undulating to rolling	2.5 Y 4/2
S-17	3/4/99	Contra Costa clay loam, slightly eroded, steep	2.5 YR 4/2
S-18	3/5/99	Altamont clay loam, slightly eroded; hilly	10 YR 3/2
S-18	3/5/99	Altamont clay loam, slightly eroded; hilly	10 YR 6/8
S-18	3/5/99	Altamont clay loam, slightly eroded; hilly	10 YR 4/2
S-18	3/5/99	Altamont clay loam, slightly eroded; hilly	5 YR 5/8
S-18	3/5/99	Altamont clay loam, slightly eroded; hilly	10 YR 3/2
S-19	3/5/99	Contra Costa clay loam, slightly eroded, steep	10 YR 3/1
S-20	3/25/99	Myers clay, gently undulating, 0-2% slopes	10 YR 4/1
S-20	3/25/99	Myers clay, gently undulating, 0-2% slopes	10 YR 4/2
S-20	3/25/99	Myers clay, gently undulating, 0-2% slopes	10 YR 7/6

Table 7. Colusa Reservoir Seasonal Wetlands Soil Type

Pool Number	Date Pool Visited	Soil Name	Soil Sample Color
C-1	4/22/98	Myers clay, 0-3% slopes	
C-2	4/22/98	Kimball gravelly loam, 2-10% slopes	10YR 5/2
C-2	4/22/98	Kimball gravelly loam, 2-10% slopes	10YR 4/1
C-3	6/9/98	Altamont soils, 30-65% slopes	
C-4	6/9/98	Capay clay, 0-2% slopes	2.5 Y 4/2
C-4	6/9/98	Capay clay, 0-2% slopes	2.5Y 6/4
C-4	6/9/98	Capay clay, 0-2% slopes	5Y 4/1
C-4	6/9/98	Capay clay, 0-2% slopes	2.5 Y 3/2
C-4	6/9/98	Capay clay, 0-2% slopes	5Y 4/1
C-5	6/15/98	Yolo clay loam, shallow over clay	5 YR 2.5/1
C-5	6/15/98	Yolo clay loam, shallow over clay	10 YR 6/8
C-5	6/15/98	Yolo clay loam, shallow over clay	10 YR 3/2
C-5	6/15/98	Yolo clay loam, shallow over clay	10 YR 6/8
C-6	6/15/98	Zamora silty clay loam, 2-8% slopes	10 YR 3/3
C-6	6/15/98	Zamora silty clay loam, 2-8% slopes	10 YR 3/1
C-6	6/15/98	Zamora silty clay loam, 2-8% slopes	10 YR 3/1
C-6	6/15/98	Zamora silty clay loam, 2-8% slopes	10 YR 3/3
C-7	6/23/98	Myers clay, 0-3% slopes	5Y 4/1
C-7	6/23/98	Myers clay, 0-3% slopes	5Y 4/2
C-8	4/1/99	Nacimiento soils, 30-50% slopes	
C-9	4/1/99	Nacimiento soils, 30-50% slopes	
C-10	4/1/99	Nacimiento-Contra Costa association, 15-30% slopes	

Most of the alkaline wetlands are also seasonal but are vastly different in plant species composition. The annual and perennial species in these areas are tolerant of alkali conditions. The majority of these wetlands are dominated by *Distichlis spicata* (salt grass), with a variety of other species including *Parapholis incurva* (sickle grass), *Frankenia salina* (alkali heath), *Cressa truxillensis* (alkali weed), and *Scirpus maritimus* (slat marsh bulrush). The alkaline wetlands within the Sites Reservoir and Colusa Cell are along a linear zone of deformation potentially associated with the Salt Lake fault.

Impacts to the alkaline wetlands may be considered significant by regulatory agencies during the environmental review of these projects. These alkaline areas could provide habitat for a number of sensitive plant and animal species, although no sensitive species were identified during the current field studies. The Colusa Cell alkaline wetlands could serve as potential mitigation for the alkaline wetlands inundated by the Sites Reservoir. These wetlands could be enhanced using various land management methods.

A very small quantity (2 acres) of emergent wetlands was identified within the Sites Reservoir; this wetland type was present within the Colusa Cell in several small areas, but these were not measurable using aerial photo

interpretation. Emergent wetlands have typical wetland species, such as *Scirpus acutus* (hard-stemmed tule), *Scirpus californicus* (California bulrush) and *Typha angustifolia* (cattails), and are associated with existing reservoir shorelines and drainages. Drainages with emergent wetlands were often protected from grazing animals by fences.

The riparian areas found within these two reservoir alternatives are rarely well developed or large in size. Many of the drainages are downcut and do not support wetland species along the banks. Small strands of *Populus fremintii* (cottonwood), *Quercus lobata* (valley oak), and *Salix* spp (willows) occur as isolated units throughout the area. The largest concentration of riparian habitat is within the southern portion of the Sites Reservoir. Potential riparian creation sites occur throughout the surrounding area.

Many of the vernal pools found within these reservoir alternatives are “manmade” (e.g., drainages blocked by roads or disturbed areas within heavy clay soils) and have very low plant species diversities. Pools occurring along the northeastern edge of the Sites Reservoir tended to be larger in size and higher in plant species diversity. One similar area also occurs within the Colusa Cell. Typical species include *Eryngium castrense* (coyote thistle), *Plagiobothrys* spp (popcorn flower), and *Lythrum hussopifolium* (loosestrife).

Newville Reservoir

Seasonal wetlands also dominate the wetlands of the Newville Reservoir inundation area (Table 3). Some of the wetland areas are very large in size and may form complexes with other types of wetlands, including riparian. This area also has significant quantities of other wetland types. The seasonal wetlands are closely associated with clay soils (Table 8). The seasonal wetlands within this area tended to be more diverse in both subtypes and plant species composition. Common species included those listed under the Sites/Colusa discussion, as well as *Trifolium* spp (clovers), *Juncus* spp (rushes), *Mimulus guttatus* (monkeyflower), and *Rorippa nasturium-aquaticum* (watercress).

Riparian areas account for over 18 percent of the reservoir area’s wetlands. Well-developed riparian habitat occurs along a number of the main tributaries, although patches of the invasive non-native *Ailanthus altissima* (tree of heaven) occur within some of these strands. Riparian wetlands in this reservoir area cover about 77 acres, which may be considered significant by regulatory agencies.

One small area of alkaline wetland was identified within the Salt Creek drainage. Other areas adjacent to Salt Creek and some of its tributaries supported alkaline species, but were too narrow to map. The areas identified as alkaline are within a zone, which was identified as an inferred fault area during a 1980 geological study of the area (*Seismic and Fault Activity Study, Proposed Glenn Reservoir Complex*. Prepared for DWR by Earth Sciences Associates). The alkaline wetlands of this area have not been site checked.

Table 8. Newville Reservoir Seasonal Wetlands Soil Type

Pool Number	Date Pool Visited	Soil Name	Soil Sample Color
N-1	3/4/98	Altamont clay, 3-15% slopes	
N-2	3/17/98	Altamont clay, 3-15% slopes	
N-3	3/19/98	Lodo-Millsholm complex, 30-50% slopes	
N-4	3/19/98	Zamora loam, 0-3% slopes	
N-5	3/19/98	Lodo-Millsholm complex, 10-30% slopes	
N-6	3/20/98	Lodo-Gullied land complex, 10-30% slopes	
N-7	3/20/98	Tehama clay loam, 2-10% slopes	
N-8	3/26/98	Terrace escarpments	
N-9	4/7/99	Zamora loam, 0-3% slopes	
N-10	4/7/99	Hillgate loam, 0-3% slopes	
N-11	4/7/99	Hillgate loam, 0-3% slopes	
N-12	4/7/99	Lodo-Millsholm complex, 10-30% slopes	
N-13	4/20/98	Zamora loam, 0-3% slopes	5Y 4/1
N-14	4/20/98	Zamora loam, 0-3% slopes	5Y 4/1
N-15	4/20/98	Lodo-Millsholm complex, 10-30% slopes	
N-16	4/20/98	Lodo-Millsholm complex, 10-30% slopes	
N-17	4/20/98	Hillgate loam, 0-3% slopes	5Y 4/1, 5Y 3/2
N-18	4/20/98	Lodo-Millsholm complex, 10-30% slopes	5Y 4/1
N-19	4/20/98	Pleasanton gravelly loam, 1-10% slopes	5Y 4/1
N-20	4/20/98	Tehama loam, 3-8% slopes	
N-21	4/20/98	Pleasanton gravelly loam, 1-10% slopes	
N-22	4/28/98	Hillgate-Millsholm complex, 3-30% slopes	5Y 4/1
N-23	4/28/98	Lodo-Milsholm complex, 30-50% slopes	5Y 4/1
N-24	4/28/98	Clear Lake clay	N4/
N-25	4/28/98	Clear Lake clay	5Y 4/1
N-26	4/29/98	Hillgate-Gullied land complex, 2-10% slopes	
N-27	4/29/98	Corning gravelly loam, 0-2% slopes	
N-28	4/29/98	Clear Lake clay	5Y 4/1
N-29	4/29/98	Millsholm clay loam-Gullied land complex, 10-30% slopes	5Y 4/1
N-30	5/19/98	Hillgate-Millsholm complex, 3-30% slopes	
N-31	5/19/98	Hillgate-Millsholm complex, 3-30% slopes	
N-32	6/1/98	Zamora loam, 0-3% slopes	5Y 3/2
N-33	6/2/98	Zamora loam, 0-3% slopes	5Y 4/1
N-34	6/2/98	Zamora loam, 0-3% slopes	5Y 2.5/1-2
N-35	6/2/98	Zamora loam, 0-3% slopes	10YR 3/2
N-36	6/2/98	Zamora loam, 0-3% slopes	5Y 3/2
N-36	6/2/98	Zamora loam, 0-3% slopes	5Y 3/1
N-36	6/2/98	Zamora loam, 0-3% slopes	5Y 6/2-3
N-37	6/11/98	Lodo-Tehama-Gullied land complex, 10-30% slopes	5Y 4/1
N-38	6/12/98	Terrace escarpments	
N-39	6/12/98	Lodo-Tehama-Gullied land complex, 10-30% slopes	5Y 4/1
N-40	6/12/98	Lodo-Tehama-Gullied land complex, 30-50% slopes	5Y 4/1
N-40	6/12/98	Lodo-Tehama-Gullied land complex, 30-50% slopes	10YR 5/8

Vernal pool complexes, areas of concentrated pools and connecting swales, were found in several locations within the reservoir area. They were usually associated with terrace deposits occurring between streambeds. The pools of this reservoir alternative were of an overall higher quality than those of the Sites/Colusa Cell location.

Red Bank Project

Seasonal and emergent wetlands make up less than 9 percent of the wetland total for the Red Bank Project (Table 4). Many of these wetlands are located within or adjacent to small stockponds or are associated with saturated spring-fed areas. Clay soils are relatively rare within the steep terrain that dominates both the Schoenfield and Dippingvat Reservoirs (Table 9).

Table 9. Red Bank Project Seasonal Wetlands Soil Type

Pool Number	Date Pool Visited	Soil Name	Soil Sample Color
R-1	4/1/98	Hillgate loam, shaly substrate, 0-8% slopes	Soil saturated
R-2	4/1/98	Hillgate loam, shaly substrate, 0-8% slopes	
R-3	5/21/98	Zamora clay loam, 0-3% slopes	
R-4	5/21/98	Riverwash	
R-5	5/21/98	Zamora clay loam, 0-3% slopes	
R-6	7/2/98	Lodo and Maymen shaly loams, 10-30% slopes, eroded	10 YR 3/2
R-7	7/2/98	Lodo and Maymen shaly loams, 10-30% slopes, eroded	
R-8	7/3/98	Cortina gravelly fine sandy loam	
R-9	7/3/98	Cortina gravelly fine sandy loam	

Riparian areas dominate the wetlands of this area. Riparian areas can be found throughout the larger reservoirs of the project but are best developed along the South Fork of Cottonwood and Red Bank Creeks. The typical species are similar to the species outlined in the Sites/Colusa discussion, except many of the riparian stands are dominated by *Alnus rhombifolia* (white alder).

State of California, Gray Davis, Governor
The Resources Agency, Mary D. Nichols, Secretary for Resources
Department of Water Resources, Thomas M. Hannigan, Director

Steve Macaulay, Chief Deputy Director

Raymond D. Hart, Deputy Director

Stephen L. Kashiwada, Deputy Director

L. Lucinda Chipponeri, Assistant Director for Legislation

Susan N. Weber, Chief Counsel

Division of Planning and Local Assistance, William J. Bennett, Chief

This bulletin was prepared under the direction of
Integrated Storage Investigation, Naser J. Bateni, Chief
Offstream Storage Investigation, Glen S. Pearson, Chief

by
David J. Bogener, Environmental Specialist IV

assisted by
Michael Serna, Senior Delineator
Mark Dombrowski, Junior Engineering Technician
Don Schroeder, Fish Wildlife Scientific Aide

State of California
The Resources Agency
Department of Water Resources
Division of Planning and Local Assistance

From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 8/31/2020 11:47:07 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]; Williams, Nicole [Nicole.Williams@icf.com]
Subject: RE: Sites - Discussion of Modeling "Alternatives" and EIR/EIS Alternatives

Hi Ali,

I can be available any of those dates/times.

Laurie

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Monday, August 31, 2020 11:17 AM
To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Williams, Nicole <Nicole.Williams@icf.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites - Discussion of Modeling "Alternatives" and EIR/EIS Alternatives

Hi all – I think we maybe have all talked about this but separately. I'd like to chat as a small group to chart our path forward.

CH2M is completing 3 "alternatives" for the modeling effort –
1.5 MAF reservoir without Reclamation investment;
1.5 MAF reservoir with Reclamation investment; and
1.3 MAF reservoir without Reclamation investment.

They are currently not planning on modeling the 1.3 MAF reservoir with Reclamation investment. This is obviously different than how we have set up our alternatives. I'd like to quickly chat about this to make sure we are okay with this or if we need to provide different direction to CH2M.

Below are some dates / times for a discussion. Please let me know what works for you.

Tuesday, 9/1 anytime from 9 to 11 AM
Wednesday, 9/2 anytime from 8:30 to 9:30 AM
Friday, 9/3 anytime from 8:30 AM to noon

I am thinking 30 minutes only for the discussion, so please come prepared with your thoughts / concerns.

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: Williams, Nicole [Nicole.Williams@icf.com]
Sent: 8/31/2020 12:06:05 PM
To: Heydinger, Erin [Erin.Heydinger@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites - Discussion of Modeling "Alternatives" and EIR/EIS Alternatives
Flag: Follow up

Hi All, Below is my availability.

- Tuesday, 9/1 anytime from 10 to 11 AM – Nicole available
- Wednesday, 9/2 anytime from 8:30 to 9:30 AM – Nicole NOT available
- Friday, 9/3 anytime from 8:30 AM to noon – Nicole available 8:30 to 10am or 11 to 12:00

Cheers, Nicole

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

From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Monday, August 31, 2020 12:00 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Williams, Nicole <Nicole.Williams@icf.com>
Subject: RE: Sites - Discussion of Modeling "Alternatives" and EIR/EIS Alternatives

I'm available at all of those times except 9-10 am tomorrow.

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

hdrinc.com/follow-us

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Monday, August 31, 2020 11:47 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Williams, Nicole <Nicole.Williams@icf.com>
Subject: RE: Sites - Discussion of Modeling "Alternatives" and EIR/EIS Alternatives

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Hi Ali,

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Laurie

From: Alicia Forsythe [<mailto:aforsythe@sitesproject.org>]

Sent: Monday, August 31, 2020 11:17 AM

To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Williams, Nicole <Nicole.Williams@icf.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>

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Friday, 9/3 anytime from 8:30 AM to noon

I am thinking 30 minutes only for the discussion, so please come prepared with your thoughts / concerns.

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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