Species	Federally Listed	State Listed	2021 Acres Permanent*	2021 Acres Temporary*	2021 Total Impacts	2019 Total Impacts
Keck's checker-mallow	X		10,094	700	10,794	10,180
Palmate-bracted bird's beak	X	X	21	8	29	28
Vernal pool crustaceans	X		330	37	367	57
Valley elderberry longhorn beetle	X		13,535	983	14,518	16
California red-legged frog	X		513 Aquatic/6,826 Upland	22 Aquatic/426 Upland	532 Aquatic/7,252 upland	483 aquatic/5,265 upland
Giant garter snake	X	X	2 Aquatic/26 Upland	21 Aquatic/19 Upland	23 Aquatic/45 Upland	413 aquatic/75 upland
Tricolored blackbird		X	13,487 Foraging/42 Nesting	1,043 Foraging/19 Nesting	14,530 Foraging/61 Nesting	unknown
Swainson's hawk		X	14,170 Foraging/1,083 Nesting	1,035 Foraging/50 Nesting	15,205 Foraging/1,133 Nesting	unknown
Western yellow-billed cuckoo	X	X	0	0	0	unknown
Bank swallow		X	0	0	0	0

From: Herrin, Jeff [jeff.herrin@aecom.com]
Sent: 5/3/2021 3:06:04 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Luu, Henry [Henry.Luu@hdrinc.com]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: RE: Sites Project - Follow Up on Flood Control Question

Ali,

Wednesday (except 11-12), Thursday, or Friday work best.

Thank you,

Jeff

From: Herrin, Jeff
Sent: Thursday, April 29, 2021 7:12 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Luu, Henry <Henry.Luu@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

Ali,

It will either be Joe Barnes and Mike Forrest or Joe Barnes and myself. I am checking on their availability for next week.

Jeff

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, April 29, 2021 6:36 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>; Luu, Henry <Henry.Luu@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: [EXTERNAL] FW: Sites Project - Follow Up on Flood Control Question

This is great! Thanks Jeff.

I do think it would be best to have a call with Ron Stork to explain all of this. He will likely have a few more questions and I read through the memo, but feel like someone from AECOM would be better to answer these.

Jeff, can you ID who from your team would be best to do this and get a few dates/times next week for this? I can coordinate with Ron on his availability.

Ali

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

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, April 28, 2021 8:54 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>; Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Alicia Forsythe <ali@forsythe-group.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

Thanks Jeff !

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Wednesday, April 28, 2021 8:50 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <ali@forsythe-group.com>
Subject: FW: Sites Project - Follow Up on Flood Control Question

You probably want this for the administrative record.

From: Barnes, Joseph <joseph.barnes@aecom.com>
Sent: Wednesday, April 28, 2021 8:36 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

Jeff – Attached is the August 2004 DWR Memorandum that documents the PMF study that was performed for Sites Reservoir.

The study uses Hydrometeorological Reports (HMR) 58 and 59 to develop rainfall over the basin for the PMF. This rainfall is then applied to the basin and runoff to the reservoir is estimated using HEC-HMS program. Runoff is estimated by breaking the basin into sub areas and determining soil related runoff characteristics using Soil Conservation Service curves to estimate infiltration and vegetation retention. Runoff lag time is estimated as described in the report. All of this is input to HEC-HMS to develop the runoff actually reaching the reservoir as a function of time. Runoff is estimated assuming the PMF is a 72-hour event.

The overall approach and use of HMR 58 and 59 is reasonable practice that is used by FERC. HMR 58 and 59 were adopted around 2000 to replace a previous method. It caused a lot of grief at the time for dam owners on the western slope of the Sierra because it significantly increased the runoff. Just about all dams under FERC jurisdiction had to be reevaluated by the owners leading to a lot of repair work to expand spillway capacities or elevate crest elevations for the higher flood events to preserve freeboard. For example, Indian Valley Dam to the west of Sites had to be raised 3 feet due to the new analysis and a lot of engineering was needed to show that the spillway was still adequate. Spillway flows from routing the PMF went from about 28,000 cfs to about 38,000 cfs as I remember. Collings Reservoir and Camp Far West Reservoir were also impacted. I mention this to indicate that the method is still used and, in my judgment, is conservative and provides results that are applicable. The alternative is a site specific storm development and storm centering study (not cheap). This has been considered on other projects, but as a method to reduce the rainfall/runoff to minimize required repairs/upgrades for spillways. In our case, the storm is small, and more expensive study options are not warranted.

For our recent studies or alternative reservoir sizes, the total reservoir inflow (78,422 AF), peak inflow (68,500 cfs) and the inflow hydrograph from the attached report (Figure 5) were preserved and applied. For full PMF storage, simply take the starting reservoir elevation, add 78,400 AF, and get the new elevation from the area capacity curve. Where there is a spillway passing water during the PMF in some of our cases, the inflow hydrograph was routed through the reservoir with the spillway rating curve to determine max spillway outflow and max associated reservoir water levels. These are the numbers that appear in the project description.

Hope this helps.

Joseph H. Barnes, P.E
Principal Civil Engineer
D 1-916-679-2329
joseph.barnes@aecom.com

AECOM
2020 L Street, Suite 400
Sacramento, CA 95811
aecom.com

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Wednesday, April 28, 2021 7:29 AM
To: Barnes, Joseph <joseph.barnes@aecom.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

Thank you.

From: Barnes, Joseph <joseph.barnes@aecom.com>
Sent: Wednesday, April 28, 2021 7:25 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Subject: Re: Sites Project - Follow Up on Flood Control Question

Yes. I have a copy on my machines as well.

Get Outlook for iOS

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Wednesday, April 28, 2021 7:20:36 AM
To: Barnes, Joseph <joseph.barnes@aecom.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

Joe,

Can you track down the memo? I don't recall that file.

Jeff

From: Barnes, Joseph <joseph.barnes@aecom.com>
Sent: Tuesday, April 27, 2021 8:00 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>; Zarchi, Idit <Idit.Zarchi@aecom.com>; Smith, Michael (orange) <michael.g.smith@aecom.com>
Subject: Re: Sites Project - Follow Up on Flood Control Question

PMF development is well documented in a DWR Memorandum. There is a copy in the file that includes model input and output. It is based on HMR 58 and HMR 59 that are still applicable today fo estimating PMF.

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From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Tuesday, April 27, 2021 5:59:58 PM
To: Barnes, Joseph <joseph.barnes@aecom.com>; Zarchi, Idit <Idit.Zarchi@aecom.com>; Smith, Michael (orange) <michael.g.smith@aecom.com>
Subject: FW: Sites Project - Follow Up on Flood Control Question

All,

We have a question on the publicly released Project Description regarding how the PMF was established for the reservoir and the Authority is trying to set up a call to respond to the question. Who on our team is most knowledgeable regarding how this is addressed in the current design?

Thank you,

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

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T +1-916-414-5800
aecom.com

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, April 27, 2021 3:05 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>
Subject: [EXTERNAL] FW: Sites Project - Follow Up on Flood Control Question

Hi Jeff,

See email chain below. Am I correct in assuming Joe Barnes is the person most suited to participate in a meeting with Mr. Stork? Maybe you, Joe, Laurie, myself, and Ali?

Thanks,
Henry N. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, April 27, 2021 2:50 PM
To: Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: FW: Sites Project - Follow Up on Flood Control Question

Henry – I am wondering if it would be best to have a call with whomever is our flood expert and Ron to answer these questions. I suspect our answers may result in more questions, so a call might be the best to just answer them all. What do you think on this? Would this be someone from AECOM?

Ali

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

From: Ron Stork <RStork@friendsoftheriver.org>
Sent: Tuesday, April 27, 2021 10:19 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Luu, Henry <Henry.Luu@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

With regard to normal operating level and full pool in the PMF discussion. Is there a difference? What is the difference? Is full pool defined by the elevation of the lip of the emergency spillway? Will the emergency spillway have operational gates?

Ron

From: Ron Stork
Sent: Tuesday, April 27, 2021 9:58 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Luu, Henry <Henry.Luu@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Project - Follow Up on Flood Control Question

Thank, Alicia. Do you have modeled PMF inflows from local creeks? In peak cfs and critical-period volumes?

With regard to floodwater management inflows (not the same as above), don't you need some kind of operating criteria? Or are you just relying on the statistical chance that the reservoir will have freeboard when it is needed? The statistical argument may be a nice one in annual flood-risk world, but it doesn't wash all that well when it's not just mother nature but operational decisions that would keep inflows from matching outflows.

Ron

From: Alicia Forsythe [mailto:aforsythe@sitesproject.org]
Sent: Tuesday, April 27, 2021 9:10 AM
To: Ron Stork <RStork@friendsoftheriver.org>
Cc: Luu, Henry <Henry.Luu@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Project - Follow Up on Flood Control Question

Hi Ron – I wanted to follow up on one of your questions on spillways. My apologies for the delay in getting back to you on this.

We have spillways described in the Preliminary Draft Project Description that we released in February (attached). See page 2-79 for a discussion of emergency releases. The Project will include emergency releases into Funks and Stone Corral Creeks through low-level releases in both Sites and Golden Gate Dams in addition to the spillway structure described below.

All of the alternatives will have a spillway in Saddle Dam 8B. Here's the description from the Project Description for this facility (see the file for the schematic).

Saddle Dam 8B would contain the reservoir spillway (see Figure 2-31). The crest width for the dam would be designed to accommodate a 16-foot-wide crest road with suitable concrete or metal guardrails on both sides. The length of the spillway crest section would be based on flood routing analyses, and the crest elevation would be based on the size of the reservoir and normal operating water surface elevation. This elevation would allow storage of the PMF without spilling and have sufficient capacity to pass the volume of over-pumping water in the unlikely event that over-pumping occurred for more than 10 days; it would also enable emergency releases to the local receiving drainage, Hunters Creek. See Figure 2-31, Saddle Dam 8B Spillway, for a schematic of the spillway.

In the attached Project Description, we also included emergency release structures on Saddle Dams 3 and 5 under Alternative 1 and 3. Upon further analysis, we don't believe that these structures will be needed to meet DSOD's emergency release criteria and we plan to eliminate them from the Project.

Hopefully this helps. Let me know if there is more information you would like on spillways and flood control and we can set up a discussion with our engineering team.

Ali

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

From: Alicia Forsythe [ali@forsythe-group.com]
Sent: 5/3/2021 3:57:33 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: FW: Sites Reservoir: Water Quality & Agriculture

Alicia Forsythe | Forsythe Group | 916.880.0676 | ali@forsythe-group.com

From: Williams, Nicole <Nicole.Williams@icf.com>
Sent: Monday, May 3, 2021 3:55 PM
To: John Spranza <John.Spranza@hdrinc.com>; Alicia Forsythe <ali@forsythe-group.com>
Cc: Huber, Anne <Anne.Huber@icf.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Reservoir: Water Quality & Agriculture

Much appreciated.

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

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Monday, May 3, 2021 3:54 PM
To: Williams, Nicole <Nicole.Williams@icf.com>; Alicia Forsythe <ali@forsythe-group.com>
Cc: Huber, Anne <Anne.Huber@icf.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Reservoir: Water Quality & Agriculture

Hi Nicole,

We had a meeting last Thursday with Bruce Houdesheldt with NCWA and did not get many answers but are following up with some additional folks that he recommended. More to come.

John Spranza

D 916.679.8858 M 818.640.2487

From: Williams, Nicole <Nicole.Williams@icf.com>
Sent: Monday, April 26, 2021 11:10 AM
To: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <ali@forsythe-group.com>
Cc: Huber, Anne <Anne.Huber@icf.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir: Water Quality & Agriculture

Hello John and Ali,

Thank you for sending the information associated with TC water quality.

I understanding you may be following up with others regarding temperature and other water quality constituents (e.g., arsenic) as it relates to rice/potential agricultural effects.

Would it be possible for you to obtain the following type of information to assist with our analysis and interpretation of the temperature results that Jacobs provided:

- Do rice growers currently test water quality/(rice?) for temperature/arsenic? I didn't see this in the results for the TC, but maybe I missed it?
- What are actual in-field requirements/standards for temperature/arsenic (presumably requirements/standards would be based on production)?
- What are the current in-field/off-field best management practices used to control temperature/arsenic related to rice cultivation?
- Describe temporal concerns/realities for rice related to water temperature (e.g., what times of the year and part of the growing cycle are most important to maintain temperature standards/requirements).

Many thanks for your help and please let me know if you have questions.

Cheers, Nicole

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

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, April 22, 2021 3:50 PM
To: John Spranza <John.Spranza@hdrinc.com>; Huber, Anne <Anne.Huber@icf.com>
Subject: FW: Water Samples

Water quality info from Jeff Sutton. See his message below.

John – This brings back up the question to me of whether we would want to put a temperature probe (or a few probes) in the TC Canal and CBD this year. We should talk about this again.

Ali

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

---

From: jsutton@tccanal.com <jsutton@tccanal.com>
Sent: Thursday, April 22, 2021 3:38 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: FW: Water Samples

Ali,

See attached, four years (2017-2020) of data with a spectrum of water quality testing results of TC water quality that was diverted at Red Bluff. This testing is conducted twice a year, early spring and early fall, at one location near the headworks and at another location south of Funks Reservoir.

Hope this is helpful to you. We will be doing our early spring testing soon, will share those results once received.

Jeffrey P. Sutton
General Manager
Tehama-Colusa Canal Authority
5513 State Highway 162
PO Box 1025
Willows, CA 95988
Office (530) 934-2125
Mobile (530) 301-1030
jsutton@tccanal.com

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/5/2021 9:56:27 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: List of Species and Effects Table and Model Assumptions
Attachments: Preliminary Impacts on State and Federally Listed Species_ Models and Assumptions_20210505.docx

Hi,
Last email ☺

Attached is a document that has the updated table of species and effects. I also took the species models and assumptions from the EIR/S and boiled it down to somewhat quick reference size.

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

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john.spranza@hdrinc.com

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hdrinc.com/follow-us

From: Lecky, Jim [Jim.Lecky@icf.com]
Sent: 5/5/2021 10:42:15 AM
To: Spranza, John [john.spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Review of workshop email.

John, I was thinking something like this:
Hi, We appreciated receiving your comments on the project description (chapter 2) and think they provide an opportunity for a focused discuss regarding proposed project operations and relationship of the Sites Reservoir Project to senior water rights holders. We think striving for a common understanding in these areas will facilitate discussion of other important issues we expect to address in future workshops, e.g. effects on rearing habitat. I would appreciate your help in prioritizing CDFW's comments with respect to project operations and water-rights so we may be sure to get through the most important ones in the time allotted. Would you please take a look at your comments on Chapter 2 and let me know what your to ten are by COB Friday? We will use your prioritized list to prepare materials for discussion at our work shop on May ??. Thank you.

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Wednesday, May 5, 2021 10:28 AM
To: Lecky, Jim <Jim.Lecky@icf.com>; aforsythe (aforsythe@sitesproject.org) <aforsythe@sitesproject.org>
Subject: Review of workshop email.

Thoughts?

Greetings,
In preparation for the upcoming joint agency workshop the Sites team would like to ask this group for some input. We have reviewed the comments on Chapter 2 that were provided by this group and see that there are a number of common themes around operations, diversion criteria and water rights. As the entirety of the next workshop will be spent addressing these comments and questions we would appreciate it if you could send us your top 10 comments or questions so we can compile a prioritized list for discussion. Although we may not have time to discuss all of the comments or questions during the workshop on the 14th, we will add them to the agenda for the following workshop and address them then.

If you could send us your top 10 by next Monday morning we will be able to include them with all others received and get them prioritized.

We appreciate your efforts on this, please let me know if you have any questions.

John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

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Sites Reservoir Project - Yocha Dehe Meeting Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity

Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 21, 2021	**Location:**	
Start Time:	2:00 p.m.	**Finish Time:**	3:00 p.m.
Purpose:	Ongoing AB 52 Consultation with Representatives of the Yocha Dehe Wintun Nation		

Meeting Participants:

Laverne Bill, Yocha Dehe	Kevin Spesert, Sites Authority	Janis Offermann, Horizon
Rebekah Canavesio, Yocha Dehe		Laurie Warner Herson, Sites Integration

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Introductions/Purpose of Meeting	Kevin	5 mins
2. RDEIR/SDEIS Status Update a. Current Status of Project b. RDEIR/SDEIS Release Date	Laurie	10 min
3. Tribal Cultural Resources a. Current Status of Cultural Research b. Need to Identify TCRs	Janis	15 min
4. Yocha Dehe Questions and Concerns	Laverne	20 mins
5. Next Steps	All	10 min

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 5/5/2021 7:03:19 PM
To: Sara M. Katz [SKatz@katzandassociates.com]; Kevin Spesert [kspesert@sitesproject.org]; Jeff Sutton [jsutton@tccanal.com]; Ann Newton [anewton@katzandassociates.com]; Sarah Rossetto [srossetto@katzandassociates.com]; kim@floydcommunications.com
Subject: FW: InSITES: If Sites Reservoir Was Operational in 2021
Attachments: image001.jpg; image002.jpg; image003.jpg; image004.jpg; image005.jpg; image006.jpg; image007.jpg

FYI

From: Jerry Brown <jbrown@sitesproject.org>
Date: Wednesday, May 5, 2021 at 6:48 PM
To: Doug Obegi <dobegi@nrdc.org>, Alicia Forsythe <ali@forsythe-group.com>
Cc: Ron Stork <RStork@friendsoftheriver.org>, Greg Reis <reis@bayecotarium.org>, "brandon.dawson@sierraclub.org" <brandon.dawson@sierraclub.org>, Chris Shutes <blancapaloma@msn.com>, "jon@baykeeper.org" <jon@baykeeper.org>, "Bobker, Gary (Mail Contact)" <bobker@sbcglobal.net>, Barry Nelson <barry@westernwaterstrategies.com>, "john@goldenstatesalmon.org" <john@goldenstatesalmon.org>, "Zwillinger, Rachel (Mail Contact)" <rzwillinger@defenders.org>
Subject: Re: InSITES: If Sites Reservoir Was Operational in 2021

Hi Doug – I appreciate hearing from you. The estimate of nearly 1MAF of water available in Sites Reservoir in a year like the one we're having is not propaganda as you suggested in your email. We have had many folks asking us this question as the dry conditions have manifested this year. As you know we are involved in preparing our CalSim 2 modeling results for the RDEIR/SDEIS analysis. We used correlations and mass balance calculations to extrapolate values from those model runs for the years of 2004-2020. I feel very confident the 1MAF is a sound and justified estimate in response to the question.

I would be happy to convene a meeting with our technical folks and whomever would be interested so that we can review our calculations, assumptions, and results. Let me know if that's something you would like to do and we'll get it set up ASAP.

Thanks again for reaching out and don't hesitate to do so in the future for any reason. The Sites Reservoir Project can significantly improve California water management in our changing climate and we continue to invite you and any other interested party to work with us to make the project a reality.

Jerry

From: Doug Obegi <dobegi@nrdc.org>
Date: Wednesday, May 5, 2021 at 12:07 PM
To: Alicia Forsythe <ali@forsythe-group.com>, Jerry Brown jbrown@sitesproject.org
Cc: Ron Stork <RStork@friendsoftheriver.org>, Greg Reis <reis@bayecotarium.org>, "brandon.dawson@sierraclub.org" <brandon.dawson@sierraclub.org>, Chris Shutes <blancapaloma@msn.com>, "jon@baykeeper.org" <jon@baykeeper.org>, "Bobker, Gary (Mail

Contact)" <bobker@sbcglobal.net>, Barry Nelson <barry@westernwaterstrategies.com>, "john@goldenstatesalmon.org" <john@goldenstatesalmon.org>, "Zwillinger, Rachel (Mail Contact)" <rzwillinger@defenders.org>
Subject: FW: InSITES: If Sites Reservoir Was Operational in 2021

Dear Ali and Jerry,

I wanted to express my frustration and deep disappointment with this propaganda piece about Sites, which materially misleads the public about the project by claiming that "If Sites Reservoir were operational today, California would have nearly 1,000,000-acre feet more water available to them to help get through challenging drought conditions."
https://3hm5en24txyp2e4cxyxaklbs-wpengine.netdna-ssl.com/wp-content/uploads/2021/04/If-Sites-Was-Operational-in-2021-Fact-Sheet.pdf

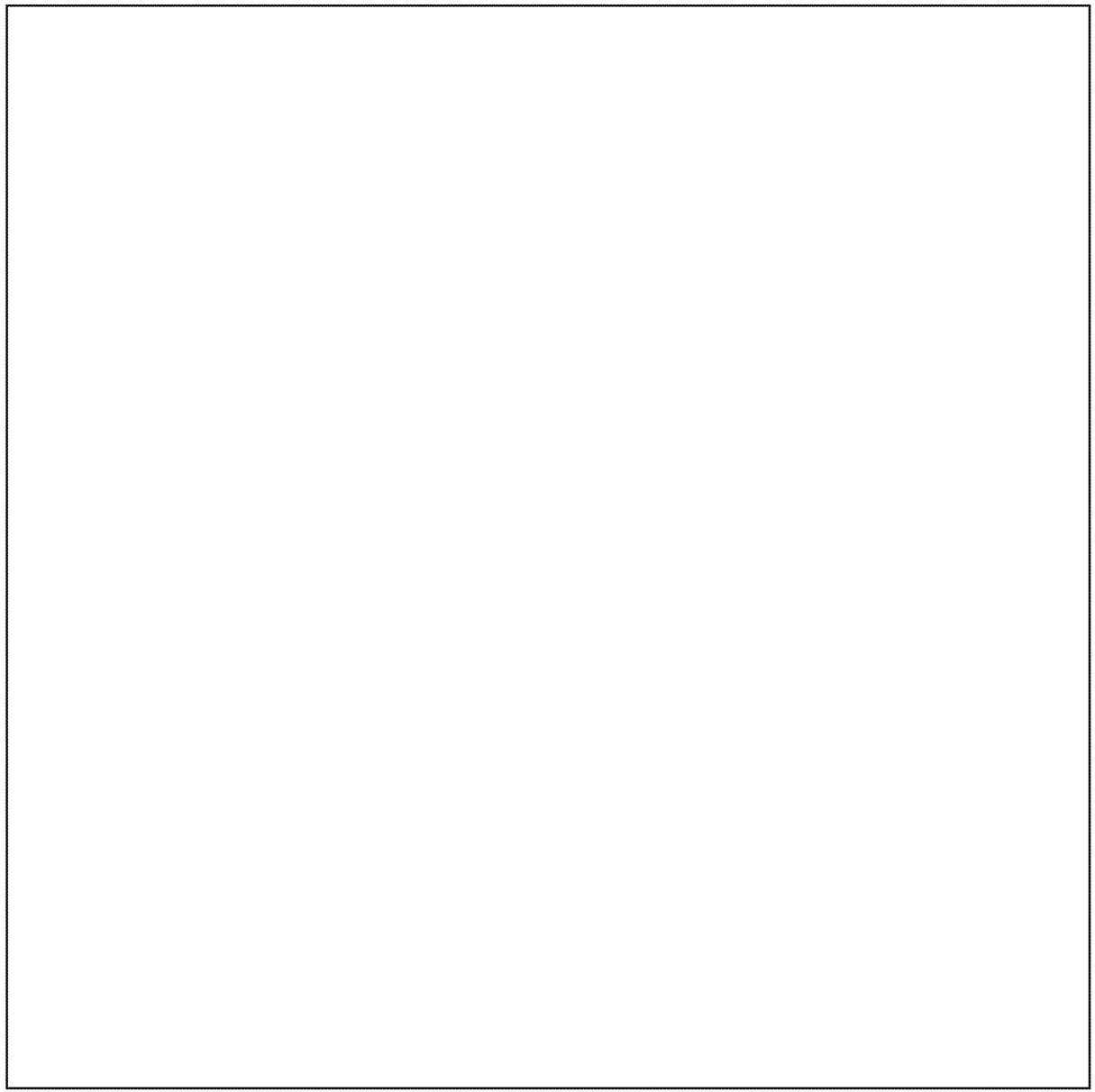
I'd love to see the numbers that support that statement, because it sure doesn't seem right to me. For instance:
1) First, according to materials from the JPA, average reservoir releases is ~240,000 acre feet, and reservoir releases in a critically dry year like 2021 would be 210-240,000 acre feet. https://yourscvwater.com/wp-content/uploads/2020/05/Item-3-WRW-051320-PowerPoint-Sites-Reservoir.pdf. So while there might be more water in storage, there would not be a million acre feet to be used in 2021.
2) Second, it's not clear what assumptions you made to come up with this 1 million acre foot number, but it seems very unlikely. At a minimum, it would assume that:
a. Sites reservoir would have been filled or nearly filled in 2019. That seems extremely unlikely, given rules on diverting from the Sacramento River and 3,900 cfs diversion capacity. Even assuming maximum diversions (3,900 cfs) for 150 days, that would be less than 1.2 million acre feet. Would Sites really have been diverting water at maximum capacity every day for 5 months in 2019?? And/or would Sites have been diverting a lot of water in 2020, despite it being such extremely dry hydrology?
b. Water was not released from Sites in 2020 for water supply. That also seems unlikely, as the long history of building new storage shows that it induces demand, like building more freeways.
3) The vast majority of the water supply from the project goes to Southern California urban agencies, with very little going to agricultural water users. So there wouldn't be a lot of water for California – there would be water for specific users, many of whom (like MWD) are in good shape.

Grrrrr… This kind of #$@%@ is really disappointing.

Thanks,
Doug

From: Sites Project Authority <info@sitesproject.org>
Sent: Tuesday, May 4, 2021 3:05 PM
To: Obegi, Doug <dobegi@nrdc.org>
Subject: InSITES: If Sites Reservoir Was Operational in 2021

View this email in your browser



FROM THE BLOG:
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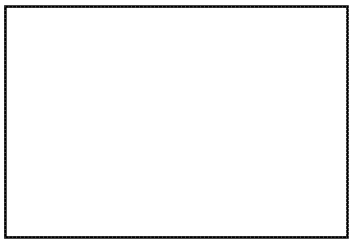

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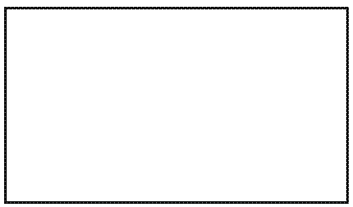

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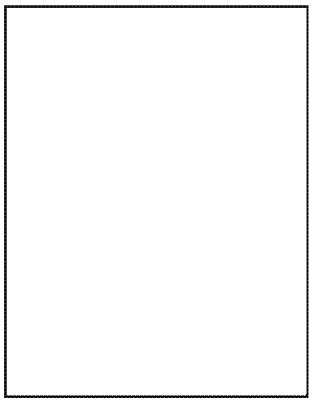

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From: Alicia Forsythe [ali@forsythe-group.com]
Sent: 5/6/2021 6:12:04 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: FW: CR MM and location of known cemeteries

Alicia Forsythe | Forsythe Group | 916.880.0676 | ali@forsythe-group.com

From: Briard, Monique <Monique.Briard@icf.com>
Sent: Wednesday, May 5, 2021 3:51 PM
To: Alicia Forsythe <ali@forsythe-group.com>; John Spranza <John.Spranza@hdrinc.com>; Oakes, Harry <Harry.Oakes@icf.com>
Subject: CR MM and location of known cemeteries

During our Mitigation call yesterday, the question was asked if the known cemeteries were within the inundation area. Below is the excerpt on their location from the Cultural Resource chapter.

Alternatives 1, 2, and 3

Construction

Two cemeteries are known to exist within the inundation area of the Sites Reservoir Complex area for Alternatives 1, 2, and 3. Evidence also indicates that there are likely unmarked cemeteries or burial places associated with Native American sites (prehistoric, ethnohistoric, and post contact) within the reservoir area (White et al. 2009). Preparation and implementation of the CRMP prior to construction would include a cemetery relocation procedure describing standard methods to exhume and relocate graves within the two known dedicated cemeteries. The CRMP would also include Native American burial treatment procedures describing methods to exhume and relocate Native American burials. No marked or dedicated cemeteries are located within the footprint of any of the other elements in the Sites Reservoir Complex area. It is possible, however, that currently unknown buried human remains are present.

Operations

Operations-related activities that could impact human remains for Alternatives 1, 2, and 3 consist of fluctuating water levels within the reservoir inundation area. Fluctuating water levels can cause erosion, which would impact buried human remains that occur within the inundation area.

Thanks,
Monique

Monique Briard | Sr. Managing Director, Environmental Planning | +1.916.231.9551 direct | monique.briard@icf.com | icf.com
ICF | 980 9th Street, Suite 1200, Sacramento, CA 95814 USA | +1.916.842.0894 mobile

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Sent: 5/6/2021 12:10:55 PM
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Alicia Forsythe | Forsythe Group | 916.880.0676 | ali@forsythe-group.com

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Sent: Thursday, May 6, 2021 9:36 AM
To: Greg Reis <reis@bayecotarium.org>; Jerry Brown <jbrown@sitesproject.org>; Obegi, Doug <dobegi@nrdc.org>; Alicia Forsythe <ali@forsythe-group.com>
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Hello Mr. Brown,

Please include me in any technical discussion as well. I am particularly interested in how much water would be available, to whom, on what timeframe, and for what purpose. I am also particularly interested in your assumptions about how Reclamation would operate its Shasta-Trinity division knowing that such water would be available, for whatever purpose.

Thanks,

Chris Shutes

Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance
(510) 421-2405

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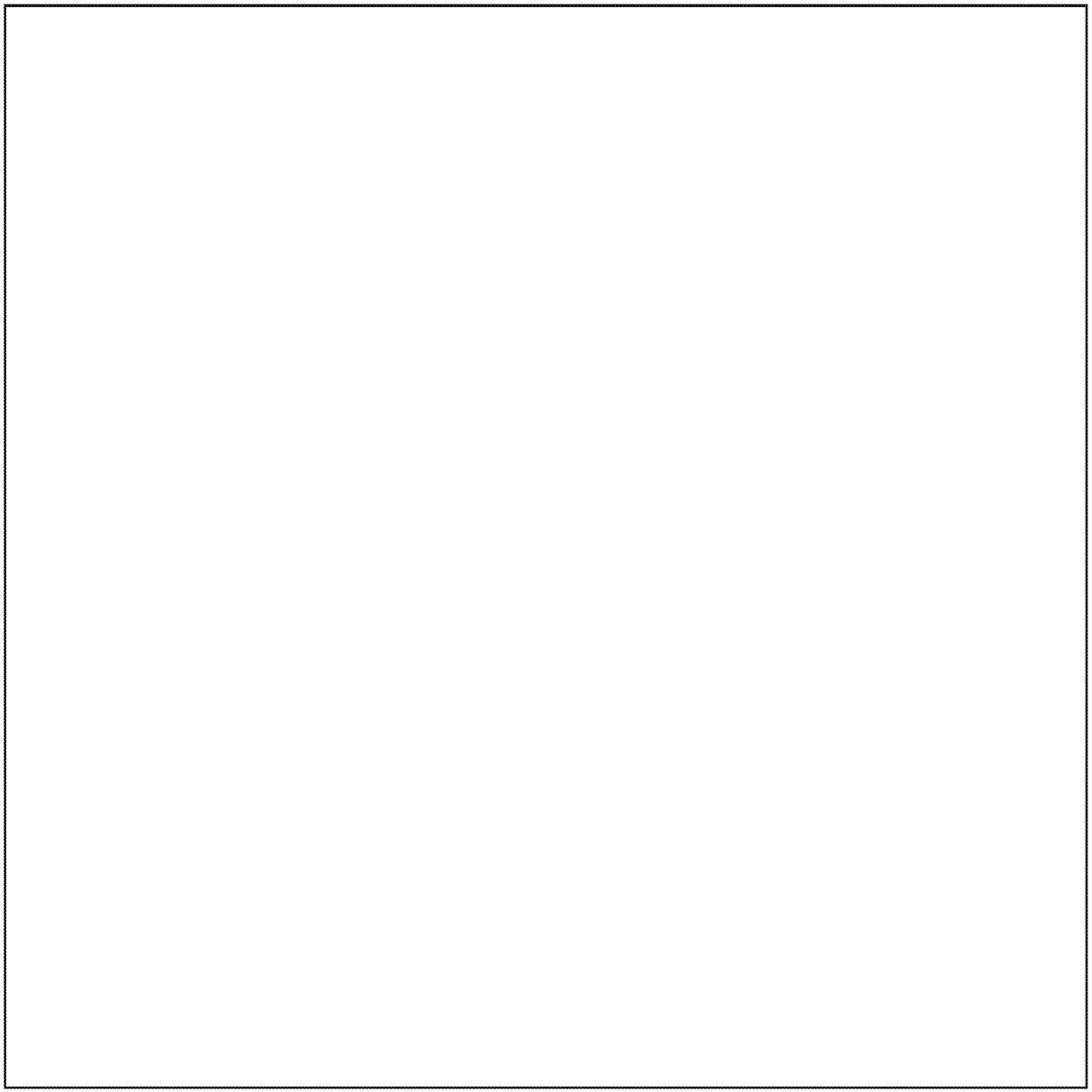

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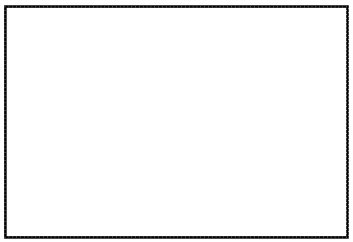

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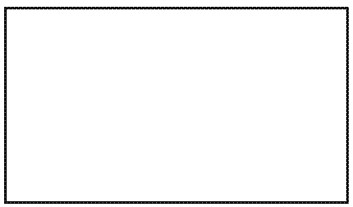

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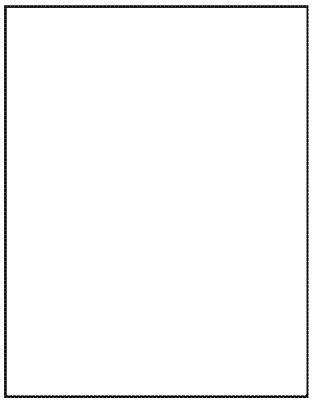

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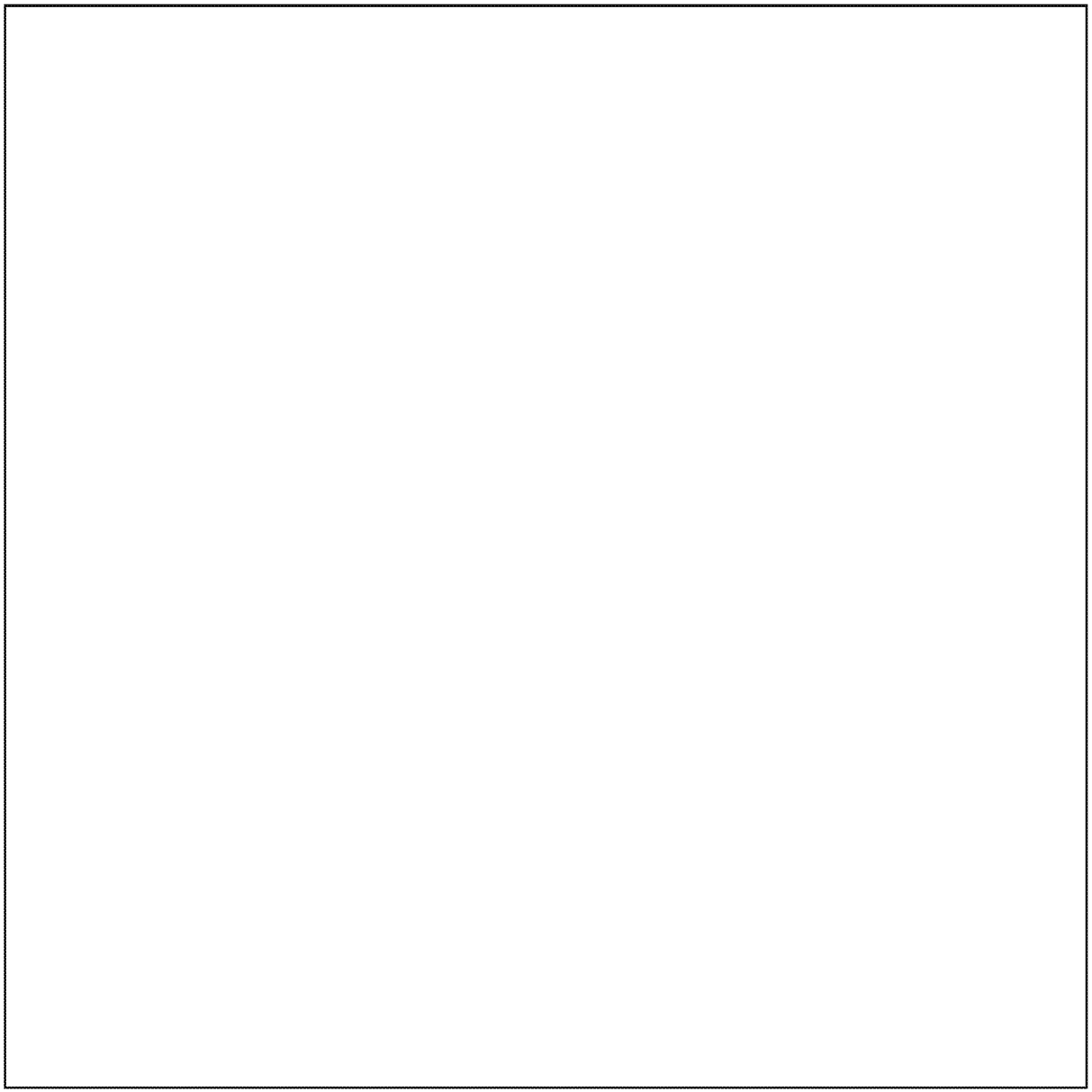

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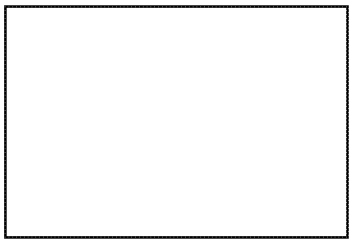

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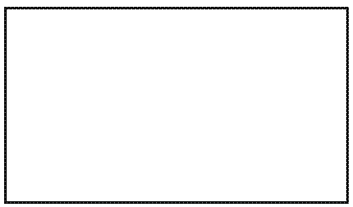

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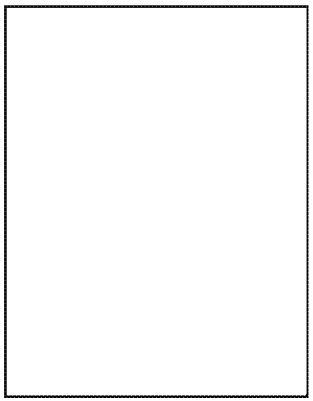
SITES RESERVOIR AS PART OF THE SOLUTION:

2021 IS THE TYPE OF YEAR SITES RESERVOIR IS DESIGNED FOR



Today almost all of California is experiencing drought, with some areas already facing extreme drought conditions. After a dry winter, many water agencies, farmers, and resource managers will need additional water supplies to get through the even drier summer months ahead. If Sites Reservoir were operational today, California would have nearly **1 million acre-feet more water available** to them to help get through challenging drought conditions.

Learn more about if Sites was operational in 2021

SITES IN THE NEWS

April 26, 2021:

Guest Opinion: Understanding the Tri-Valley's water supply

April 5, 2021:

Column: Drought is upon us. California's Senate leader has a plan to keep it from becoming a crisis

March 19, 2021:

Op-ed: Protecting Santa Clara County's water future in the face of climate change

March 3, 2021:

Barring 'Miracle,' Farm Water Will Be in Short Supply

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/6/2021 2:31:23 PM
To: Cam Irvine [cam@robertson-bryan.com]; tstokely@att.net; jimb@aqualliance.net; dobegi@nrdc.org; reis@bayecotarium.org; rzwillinger@defenders.org; DLucero@ButteCounty.net; rebeccadawnwu@yahoo.com; chicojerry@yahoo.com; regina@californiasalmon.org; Huber, Anne [Anne.Huber@icf.com]; Williams, Nicole (Nicole.Williams@icf.com) [Nicole.Williams@icf.com]; steve.micko@jacobs.com; David Zelinsky [zelinsky.david@gmail.com]; asanchez@calwild.org; Ron Stork [RStork@friendsoftheriver.org]; Gratreak, Leesa [Leesa.Gratreak@hdrinc.com]; Julie.zimmerman@tnc.org; anthony@asaracino.com; Jay_Ziegler@tnc.org
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Davis, Ryan A [rdavis@usbr.gov]; Dekar, Melissa D [mdekar@usbr.gov]; King, Vanessa M [vking@usbr.gov]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Morgan, Joseph [Morgan.Joseph@epa.gov]; Gordon, Stephanie (Skophammer) [GORDON.STEPHANIES@EPA.GOV]; Wolder, Natalie L [nwolder@usbr.gov]; Deeds, Daniel A [ddeeds@usbr.gov]
Subject: RE: Sites Water Quality Discussion Group Meeting No.2: In Reservoir Topics
Attachments: 20210413_Water Quality Group discussion_AGN.pdf; Sites WQ metals data summary tables 20210506.pdf

Hello,
Attached is the agenda for our upcoming water quality discussion. Also attached is a table that provides the additional metals information requested by participants in the first water quality group discussion. It shows location, timing, number of data points, and minimum, mean, and maximum values for metals (excluding mercury).

Talk with you on the 13th

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----
From: Spranza, John
Sent: Thursday, April 29, 2021 8:13 AM
To: Spranza, John; Cam Irvine; tstokely@att.net; jimb@aqualliance.net; dobegi@nrdc.org; reis@bayecotarium.org; rzwillinger@defenders.org; DLucero@ButteCounty.net; rebeccadawnwu@yahoo.com; chicojerry@yahoo.com; regina@californiasalmon.org; Huber, Anne; Williams, Nicole (Nicole.Williams@icf.com); Micko, Steve/SAC (Steve.Micko@jacobs.com); David Zelinsky; asanchez@calwild.org; Ron Stork; Gratreak, Leesa; Julie.zimmerman@tnc.org; anthony@asaracino.com; Jay_Ziegler@tnc.org
Cc: aforsythe (aforsythe@sitesproject.org); Davis, Ryan A; Melissa Dekar (mdekar@usbr.gov); King, Vanessa M; Laurie Warner Herson; Erin Heydinger (Erin.Heydinger@hdrinc.com); Morgan, Joseph; Gordon, Stephanie (Skophammer); Wolder, Natalie L; Deeds, Daniel A
Subject: Sites Water Quality Discussion Group Meeting No.2: In Reservoir Topics
When: Thursday, May 13, 2021 1:00 PM-2:30 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

The second meeting of our water quality discussion group that will focus on in reservoir topics.

Agenda to follow.

Microsoft Teams meeting

Join on your computer or mobile app

Click here to join the meeting

Or call in (audio only)

+1 213-514-6883,,808172876# United States, Los Angeles

(833) 255-2803,,808172876# United States (Toll-free)

Phone Conference ID: 808 172 876#

Find a local number | Reset PIN

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Water Quality Group Discussion Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 13, 2021	**Location:**	Microsoft Teams Or call in (audio only) (833) 255-2803,,808172876#
Start Time:	1:00 p.m.	**Finish Time:**	1:30 p.m.
Purpose:	Overview and discussion of the Sites Project's in-lake water quality modeling and EIR/S analysis approach		

Meeting Participants:

André Sanchez	Julie Zimmerman	Cam Irvine
Anthony Saracino	Rachel Zwillinger	Erin Heydinger
Dave Zelinski	Rebecca Wu	John Spranza
Debra Lucero	Regina Chichizola	Laurie Warner Herson
Doug Obegi	Ron Stork	Lesa Erecius
Greg Reis	Stephanie Gordon	Melissa Dekar
Jerry Boles	Tom Stokely	Nicole Williams
Jay Ziegler	Ali Forsythe	Steve Micko
Jim Brobeck	Anne Huber	Vanessa King

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Introductions	John	5 mins
2. Group Norms a. Approach to Meetings	John	5 mins
3. Action Item follow-up	John	5 min
4. Key Concepts a. Reservoir Management Plan b. Temperature Model c. Evapoconcentration	Ali, Steve, Anne	15 min

5. In Lake Analyses a. Mercury b. Metals (non-Hg) c. HABs d. Other Topics i. Salt Pond ii. Bank Erosion iii. Metal Leaching	Cam, Anne, Lesa	50 mins
6. Action Items and Future Topics	All	10 mins

Metal Concentrations (µg/L) Reported in the DWR Water Data Library for the Sacramento River below Red Bluff (Station A0275890)

Data collected May 2003 through November 2017. Data search was for 2000 - 2020.

Metal/Metalloid	Count	Minimum	Average	Maximum
Dissolved Aluminum	68	1.4	47.6	1081
Total Aluminum	70	11.9	267.4	3630
Dissolved Arsenic	68	0.41	1.21	1.93
Total Arsenic	70	0.70	1.32	2.03
Dissolved Cadmium	68	0.0025	0.0403	0.0500
Total Cadmium	70	0.0025	0.0421	0.0810
Dissolved Chromium	68	0.1	0.6	2.5
Total Chromium	70	0.2	1.2	10.3
Dissolved Copper	68	0.58	1.42	6.99
Total Copper	70	0.65	2.20	14.70
Dissolved Iron	68	0.8	40.3	811
Total Iron	70	22.3	312.7	4160
Dissolved Lead	68	0.002	0.029	0.575
Total Lead	70	0.014	0.185	3.14
Dissolved Manganese	68	0.1	1.1	10.7
Total Manganese	70	1.3	12.7	144
Dissolved Nickel	68	0.4	1.2	13.2
Total Nickel	70	0.5	1.8	15.7
Dissolved Selenium	68	0.05	2.48	160
Total Selenium	70	0.07	0.18	0.88
Dissolved Silver	68	0.0005	0.0128	0.04
Total Silver	70	0.0005	0.0183	0.1255
Dissolved Zinc	68	0.09	1.02	7.63
Total Zinc	70	0.58	3.50	26

Note: Values less than detection limits were assumed to equal half the detection limit.

Metal Concentrations (µg/L) Reported in the DWR Water Data Library for the Sacramento River at Hamilton City (station A0263000)

Data collected November 2003 through November 2017. Data search was for 2000 - 2020.

Metal/Metalloid	Count	Minimum	Average	Maximum
Dissolved Aluminum	77	0.2	134.6	2887
Total Aluminum	80	6.0	438.5	6686
Dissolved Arsenic	77	0.86	1.66	2.70
Total Arsenic	80	1.15	1.87	4.07
Dissolved Cadmium	77	0.0025	0.0399	0.0500
Total Cadmium	80	0.0025	0.0426	0.0920
Dissolved Chromium	77	0.1	0.7	5.0
Total Chromium	80	0.2	1.7	18.9
Dissolved Copper	77	0.50	1.26	4.26
Total Copper	80	0.73	2.33	18.70
Dissolved Iron	77	0.1	90.0	1773
Total Iron	80	7.8	520.6	10052
Dissolved Lead	77	0.002	0.038	0.648
Total Lead	80	0.011	0.222	3.24
Dissolved Manganese	77	0.1	2.0	23.2
Total Manganese	80	1.6	17.6	272
Dissolved Nickel	77	0.4	1.1	4.69
Total Nickel	80	0.6	2.5	30.7
Dissolved Selenium	77	0.07	0.13	0.36
Total Selenium	80	0.03	0.17	0.49
Dissolved Silver	77	0.0005	0.0125	0.0385
Total Silver	80	0.0005	0.0419	2.11
Dissolved Zinc	77	0.05	0.80	5.79
Total Zinc	80	0.05	4.02	35

Note: Values less than detection limits were assumed to equal half the detection limit.

Metal Concentrations (µg/L) Reported in the DWR Water Data Library for the Sacramento River above Colusa Basin Drain (station A0223002)

Data collected November 2003 through November 2017. Data search was for 2000 - 2020.

Metal/Metalloid	Count	Minimum	Average	Maximum
Dissolved Aluminum	52	0.2	57.4	560
Total Aluminum	55	24.2	343.0	2750
Dissolved Arsenic	52	1.29	1.92	3.30
Total Arsenic	55	1.31	2.09	3.32
Dissolved Cadmium	52	0.0040	0.0463	0.0500
Total Cadmium	55	0.0035	0.0466	0.1080
Dissolved Chromium	52	0.0	0.5	1.8
Total Chromium	55	0.0	1.3	5.5
Dissolved Copper	52	0.79	1.37	2.64
Total Copper	55	1.04	2.42	7.47
Dissolved Iron	52	0.1	57.8	503
Total Iron	55	36.3	425.0	2776
Dissolved Lead	52	0.002	0.041	0.3
Total Lead	55	0.020	0.221	1.47
Dissolved Manganese	52	0.1	1.7	17.9
Total Manganese	55	4.6	19.4	83.8
Dissolved Nickel	52	0.3	1.0	2.84
Total Nickel	55	0.6	2.0	8.12
Dissolved Selenium	52	0.09	0.16	0.64
Total Selenium	55	0.09	0.19	0.95
Dissolved Silver	52	0.0005	0.0141	0.02
Total Silver	55	0.0005	0.0159	0.0725
Dissolved Zinc	52	0.05	0.46	1.93
Total Zinc	55	0.32	2.95	12.5

Note: Values less than detection limits were assumed to equal half the detection limit.

Metal Concentrations (µg/L) Reported in the DWR Water Data Library for Colusa Basin Drain near Knights Landing (station A0294710)

Data collected November 2003 through November 2017. Data search was for 2000 - 2020.

Metal/Metalloid	Count	Minimum	Average	Maximum
Dissolved Aluminum	48	0.3	66.2	743
Total Aluminum	51	125.0	1021.6	3444
Dissolved Arsenic	48	2.26	4.24	7.40
Total Arsenic	51	3.03	4.75	7.77
Dissolved Cadmium	48	0.0040	0.0585	0.6760
Total Cadmium	51	0.0035	0.0570	0.6870
Dissolved Chromium	48	0.0	0.7	4.1
Total Chromium	51	0.2	3.7	9.4
Dissolved Copper	48	1.60	2.94	4.33
Total Copper	51	2.61	5.72	10.30
Dissolved Iron	48	2.4	104.3	767
Total Iron	51	265.0	1544.8	3762
Dissolved Lead	48	0.002	0.061	0.356
Total Lead	51	0.184	0.775	1.41
Dissolved Manganese	48	0.2	14.1	269
Total Manganese	51	69.4	168.4	438
Dissolved Nickel	48	1.4	3.2	5.45
Total Nickel	51	3.4	7.6	14.5
Dissolved Selenium	48	0.10	0.43	0.92
Total Selenium	51	0.10	0.53	1.25
Dissolved Silver	48	0.0005	0.0164	0.092
Total Silver	51	0.0005	0.0190	0.111
Dissolved Zinc	48	0.16	0.80	2.82
Total Zinc	51	2.09	6.45	14

Note: Values less than detection limits were assumed to equal half the detection limit.

Metal Concentrations (µg/L) Reported in the DWR Water Data Library for Stone Corral Creek near Sites (WDL station A0043500)

Data collected May 2003 through January 2011. Searched for all data available.

Metal/Metalloid	Count	Minimum	Average	Maximum
Dissolved Aluminum	40	0.66	149.49	1991
Total Aluminum	40	1.46	562.07	6149
Dissolved Arsenic	40	0.682	2.76	8.84
Total Arsenic	40	0.774	3.10	9.96
Dissolved Cadmium	40	0.001	0.05	0.187
Total Cadmium	40	0.001	0.06	0.524
Dissolved Chromium	40	0.21	2.92	8.1
Total Chromium	40	0.47	4.05	11
Dissolved Copper	40	0.69	2.78	5.45
Total Copper	40	0.83	3.93	14.9
Dissolved Iron	40	0.7	122.52	1370
Total Iron	40	1.79	512.06	7420
Dissolved Lead	40	0.006	0.08	0.782
Total Lead	40	0.008	0.31	2.91
Dissolved Manganese	40	0.14	12.36	63.4
Total Manganese	40	1.34	36.60	203
Dissolved Nickel	40	1.2	2.83	8
Total Nickel	40	1.38	4.02	15.8
Dissolved Selenium	40	0.26	6.15	30
Total Selenium	40	0.38	6.74	30.4
Dissolved Silver	40	0.0005	0.03	0.131
Total Silver	40	0.0025	0.05	0.347
Dissolved Zinc	40	0.46	1.40	6.47
Total Zinc	40	0.64	3.70	24.9

Note: Values less than detection limits were assumed to equal half the detection limit.

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/6/2021 3:02:49 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: RE: [EXTERNAL] Sites Reservoir WQ sampling

Maybe, but my staff's labor to sample and write it up is just over $24k. It's just really high for 2 sampling efforts from one reservoir with a simple write-up.

if you are okay with it I'll use my numbers, I can back those.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 6, 2021 2:52 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: [EXTERNAL] Sites Reservoir WQ sampling

I think they are including staff time and reporting??

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

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Thursday, May 6, 2021 2:38 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: [EXTERNAL] Sites Reservoir WQ sampling

Wow, they are REALLY overpaying. I sample 10 analytes monthly, in triplicate from Ellis Lake and it costs me $2,760 a month from a state certified lab.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 6, 2021 2:00 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: FW: [EXTERNAL] Sites Reservoir WQ sampling

Thanks Laurie. This is helpful.

John – see below for our eventual O&M cost estimate.

Ali

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

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Thursday, April 29, 2021 7:50 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: FW: [EXTERNAL] Sites Reservoir WQ sampling

FYI – info from Reclamation regarding WQ sampling for metals.

From: Dekar, Melissa D <mdekar@usbr.gov>
Sent: Thursday, April 29, 2021 7:47 AM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: FW: [EXTERNAL] Sites Reservoir WQ sampling

Good morning, Laurie,

Here is some info on sampling costs that might be helpful. Let me know if you have more questions or needs that I can look into.

Melissa

From: Dodgen, Laurel K <ldodgen@usbr.gov>
Sent: Wednesday, April 28, 2021 3:56 PM
To: Dekar, Melissa D <mdekar@usbr.gov>
Subject: Re: [EXTERNAL] Sites Reservoir WQ sampling

Hi Melissa,

CGB-157 doesn't have many investigations that look at metals in reservoirs (more commonly we measure temperature profiles). We do have several investigations that measure metals in wildlife refuges. Among Reclamation generally, I know that Lower Colorado collects a variety of water samples (mostly physical analytes and nutrients) and that Mary Suppiger at Shasta has some water monitoring investigations as well.

I can give you some round numbers for our cost, with the caveat that actual budget will vary depending on 1) shoreline samples (cheaper) vs boat samples (more expensive) 2) number of sites 3) number of analytes 4) frequency of collection 5) what rigor of QC/QA is included 6) what level of reporting is included (just data vs simple report vs water quality assessment).

At a minimum (just for having a lab measure the analytes), it'll cost about $30/analyte per sample.

For one of our investigations, we measure 10 metal and physical analytes twice a year at 9 shoreline locations. We include QC samples and do QA assessment and write a simple report. This investigation costs $25,000 per year.

Let me know if you need more info. Regards,

From: Dekar, Melissa D <mdekar@usbr.gov>
Sent: Wednesday, April 28, 2021 2:09 PM
To: Dodgen, Laurel K <ldodgen@usbr.gov>
Subject: FW: [EXTERNAL] Sites Reservoir WQ sampling

Hi Laurel,

Another monitoring question for you. 😊 Do you know if Reclamation has any metal monitoring plans or programs on reservoirs? If so, could you share anything that might be helpful Sites' request below?

Thank you,
Melissa

Melissa Dekar
Natural Resources Specialist
Environmental Compliance and Conservation Branch, CGB-152
2800 Cottage Way, Sacramento, CA, 95825
Interior Region 10, Bureau of Reclamation
916-978-6153 mdekar@usbr.gov

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, April 28, 2021 1:36 PM
To: Dekar, Melissa D <mdekar@usbr.gov>
Subject: [EXTERNAL] Sites Reservoir WQ sampling

Hi Melissa,

ICF is suggesting that there will need to be monthly testing for metals in the reservoir in the initial years. This would include grab samples at various depths. Does Reclamation have similar programs at reservoirs that we could use as an example for scope and associated costs?

Thanks,

Laurie

Laurie Warner Herson
Principal/Owner

Phenix
Environmental Planning

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

http://phenixenv.com/

From: Huber, Anne [Anne.Huber@icf.com]
Sent: 5/6/2021 4:01:24 PM
To: Spranza, John [john.spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Water Samples

I've used other hobos, but not tidbits. It's fun to be able to say that hobos are collecting your data.
When assessing water temperature, it's good to also know flow. Do you know if TCCA can provide that info for TC Canal? I'm guessing they know flow at a few locations. CBD has some flow measurement stations – although I'm not recalling if they are still active.

-Anne

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Thursday, May 6, 2021 3:53 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Huber, Anne <Anne.Huber@icf.com>
Subject: RE: Water Samples

I'd like to drop some tidbits in the canal to compare to our models. I used them on the Owens and they are beasts at taking abuse and staying accurate. Super small too.

https://microdaq.com/onset-hobo-tidbit-temperature-data-logger.php

Anne, if you think something else would work better please let us know.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, April 22, 2021 3:50 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Huber, Anne <Anne.Huber@icf.com>
Subject: FW: Water Samples

Water quality info from Jeff Sutton. See his message below.

John – This brings back up the question to me of whether we would want to put a temperature probe (or a few probes) in the TC Canal and CBD this year. We should talk about this again.

Ali

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

From: jsutton@tccanal.com <jsutton@tccanal.com>
Sent: Thursday, April 22, 2021 3:38 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: FW: Water Samples

Ali,

See attached, four years (2017-2020) of data with a spectrum of water quality testing results of TC water quality that was diverted at Red Bluff. This testing is conducted twice a year, early spring and early fall, at one location near the headworks and at another location south of Funks Reservoir.

Hope this is helpful to you. We will be doing our early spring testing soon, will share those results once received.

Jeffrey P. Sutton
General Manager
Tehama-Colusa Canal Authority
5513 State Highway 162
PO Box 1025
Willows, CA 95988
Office (530) 934-2125
Mobile (530) 301-1030
jsutton@tccanal.com

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/6/2021 4:22:27 PM
To: Huber, Anne [Anne.Huber@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Water Samples

Based on my conversations with Jeff Sutton, they have 26 automated check structures run by SCADA along the TC canal. Flows have to be a part of some of those.

John Spranza

D 916.679.8858 M 818.640.2487

From: Huber, Anne <Anne.Huber@icf.com>
Sent: Thursday, May 6, 2021 4:01 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Water Samples

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John Spranza

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Sent: Thursday, April 22, 2021 3:50 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Huber, Anne <Anne.Huber@icf.com>
Subject: FW: Water Samples

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Ali

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

From: jsutton@tccanal.com <jsutton@tccanal.com>
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Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: FW: Water Samples

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Jeffrey P. Sutton
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5513 State Highway 162
PO Box 1025
Willows, CA 95988
Office (530) 934-2125
Mobile (530) 301-1030
jsutton@tccanal.com

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 5/6/2021 5:11:41 PM
To: Jeff Davis [h2oman235@gmail.com]; Heather Dyer [heatherd@sbvmwd.com]
CC: Fritz Durst [fritz.durst@gmail.com]
Subject: Recent NGO Reaction to Blog
Attachments: RE: FW: InSITES: If Sites Reservoir Was Operational in 2021; Untitled Attachment; Untitled Attachment; Untitled Attachment

Just wanted to make you aware of email communication on Sites/Jeff Sutton 4/28/21 blog regarding "how much water would Sites have for this year" which I understand we may be asking one or both of you to author a similar piece.

Please call with any questions or comments.

From: Alicia Forsythe [aforsythe@sitesproject.org]
Sent: 5/7/2021 10:04:58 AM
To: Jerry Brown [jbrown@sitesproject.org]
Subject: Fwd: Funks Reservoir and CRLF

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: Friday, May 7, 2021 9:32:13 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: FW: Funks Reservoir and CRLF

Well, this is interesting.

John Spranza

D 916.679.8858 M 818.640.2487

From: Berryman, Ellen <Ellen.Berryman@icf.com>
Sent: Friday, May 7, 2021 9:31 AM
To: Briard, Monique <Monique.Briard@icf.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: RE: Funks Reservoir and CRLF

FYI – only the first bullet is related to the whole frog/modeled habitat thing. The other is part of our ongoing discussions about the programmatic/stepwise approach.

From: Berryman, Ellen
Sent: Friday, May 7, 2021 9:28 AM
To: Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; 'Spranza, John' <John.Spranza@hdrinc.com>
Subject: FW: Funks Reservoir and CRLF

Email I sent to Dan this morning after our conversation.
I can't tell you why I was unsuccessful with this in the past and now he's agreeing. Sorry it had to happen *after* things blew up.

From: Berryman, Ellen
Sent: Friday, May 7, 2021 9:26 AM
To: Cordova, Daniel A <dcordova@usbr.gov>
Subject: Funks Reservoir and CRLF

Hi Dan,
Thank you again for agreeing to chat with me during your vacation.

As we discussed on the phone, this email is to remind you about a couple of things you were going to discuss with Steve Schoenberg at USFWS:

- Funks Reservoir is not suitable habitat for California red-legged frog
- The possibility of using a true hybrid programmatic approach for Sites. That is (if Sites Authority wishes) they can only commit to mitigation for suitable habitat most likely to support frogs, and then they would get take authorization for that habitat through the Biological Opinion. For areas FWS is concerned there *may* be frogs but not likely, we'd like to have the option of *not* covering take in the Biological Opinion. In these cases, it could be a programmatic approach where Sites Authority is required to survey those areas later and if frogs are found, consultation would be re-initiated to authorize that take (with additional mitigation obligations). I'm not sure yet if Sites wants to go that route, but it would be good to know it's an option.

Ellen

File Provided Natively

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 5/11/2021 11:32:31 AM
To: Cheyanne Harris [CHarris@BrwnCald.com]
CC: JP Robinette [jrobinette@brwncald.com]; Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Subject: FW: Alternative 3 Storage Allocation

This information below is in response to an action item from the value planning workgroup meeting. Can you distribute this with the next batch of follow-up materials that goes out to the group?

Thanks

From: "Heydinger, Erin" <Erin.Heydinger@hdrinc.com>
Date: Tuesday, May 11, 2021 at 9:41 AM
To: Jerry Brown <jbrown@sitesproject.org>
Subject: Alternative 3 Storage Allocation

Hi Jerry,

Below is a description of storage allocation as it relates to Alternative 3. Please let me know if this gets at the question or if you have any proposed edits.

The approved storage allocation results in presumed federal storage of 91 TAF. If additional federal funding became available, it is assumed that Reclamation would seek a share of storage proportionate to their level of investment. So, if federal funding was available at a level of 15% cost-share, the comparable level of storage would be 207 TAF, or 116 TAF of additional storage above the current assumption. Existing participants would be notified of the additional funding, and would be asked to **voluntarily** reduce their storage allocation. If, for example, Metropolitan volunteered to reduce their storage allocation to accommodate Reclamation, their storage allocation would be reduced by 116 TAF. They would now have ~196 TAF of storage, and all of their project costs would be proportionate to their revised level of storage. All other participants' storage allocation would remain unchanged. The voluntary reduction in participation could come from multiple participants, or the RC/AB could opt out altogether and the federal funding could be declined.

Erin

Erin Heydinger, PE, PMP
Project Manager
Water/Wastewater

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

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From: Jerry Brown [jbrown@sitesproject.org]
Sent: 5/11/2021 3:38:32 PM
To: scott.schwartz@rwe.com
CC: matt.stucky@rwe.com; max.friedman@rwe.com; bill.thomas@rwe.com
Subject: Re: RWE Renewables: Follow-up
Attachments: image001.jpg; image002.png; Appendix B - Hourly Pumping Profile by Month.pdf

Scott – Please find attached hourly load profiles by month for the Sites project. Our team thinks this is what you need to provide us with a renewable power service concept proposal. Can you confirm this will suffice?

Thanks
Jerry

From: jerry brown <jerry@waterologyconsulting.com>
Date: Tuesday, May 4, 2021 at 7:10 PM
To: "scott.schwartz@rwe.com" <scott.schwartz@rwe.com>
Cc: "matt.stucky@rwe.com" <matt.stucky@rwe.com>, "max.friedman@rwe.com" <max.friedman@rwe.com>, "bill.thomas@rwe.com" <bill.thomas@rwe.com>
Subject: Re: RWE Renewables: Follow-up

Scott – Thanks for the information. I will get back to you shortly with direction on the ICF contact.

Regarding the other follow-up item involving the Sites project load profiles, I have received the information "hourly pumping profiles by month". Is that what you need to put together a concept proposal for providing renewable power service to the project? Let me know.

Jerry

From: "scott.schwartz@rwe.com" <scott.schwartz@rwe.com>
Date: Tuesday, May 4, 2021 at 10:56 AM
To: jerry brown <jerry@waterologyconsulting.com>
Cc: "matt.stucky@rwe.com" <matt.stucky@rwe.com>, "max.friedman@rwe.com" <max.friedman@rwe.com>
Subject: RE: RWE Renewables: Follow-up

Hi Jerry,

We are happy to connect ICF directly with the consultant working on behalf of RWE to prepare its EIR, Tetra Tech.

Please let us know how you would like to proceed with introductions and next steps.

Best,

Scott

From: Schwartz, Scott
Sent: Monday, April 12, 2021 10:26 AM
To: jerry brown <jerry@waterologyconsulting.com>
Subject: RE: RWE Renewables: Follow-up

Hi Jerry and thank you for the update. Yes, we spoke with both internal and external counsel last week and received endorsement/approval. The last step is to run it by Colusa County and make sure they are ok with it. I intend to reach out to Kent Johanns, our main Colusa County Planning POC, later today. Assuming that goes well, I think we can set up a call between Tetra Tech and ICF later this week.

From: jerry brown <jerry@waterologyconsulting.com>
Sent: Monday, April 12, 2021 10:23 AM
To: Schwartz, Scott <scott.schwartz@rwe.com>
Subject: Re: RWE Renewables: Follow-up

Hi Scott – Just wanted to give you an update on our load profile information. Probably is going to be another week before I can get that over to you.

Any luck getting attorney okay to send over the EIR information. I would like to get a conference call set between Tetra Tech and ICF personnel very soon. Let me know on both fronts.

Thanks
Jerry

From: jerry brown <jerry@waterologyconsulting.com>
Date: Tuesday, March 30, 2021 at 6:57 AM
To: "scott.schwartz@rwe.com" <scott.schwartz@rwe.com>
Subject: Re: RWE Renewables: Follow-up

Scott – Thanks for the map. Very helpful. Fortunately I don't see any Williamson Act contracts within the footprint of the reservoir. Our folks are working on a description of our load profile and we should have that for you next week. Please pass along any EIR information allowed by your legal counsel. We would be particularly interested in your findings related to the California red legged frog.

Thanks
Jerry

From: "scott.schwartz@rwe.com" <scott.schwartz@rwe.com>
Date: Tuesday, March 23, 2021 at 12:36 PM
To: jerry brown <jerry@waterologyconsulting.com>
Cc: "bill.thomas@rwe.com" <bill.thomas@rwe.com>, "matt.stucky@rwe.com" <matt.stucky@rwe.com>
Subject: RWE Renewables: Follow-up

Hi Jerry,

Thanks again for speaking with us yesterday. I spoke with my boss and will loop in our internal counsel regarding sharing information for our respective EIRs. Below please find a screenshot showing TRS and what appears on our map for active Williamson Act contracts. Our project site is outlined in the southernmost portion of the screenshot; the Cortina substation is approx. three miles northeast and is highlighted by a green dot.

Best,

Scott

RWE

Our energy for a sustainable life

Scott Schwartz

Solar Development
M: +1 415-361-1455
scott.schwartz@rwe.com

RWE Renewables Americas, LLC
americas.rwe.com

From: Jerry Brown [jbrown@sitesproject.org]
Sent: 5/12/2021 10:34:24 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: Audobon California

Has this group been engaged in our NGO workshops?

Specifically Samantha Arthur is a Commissioner on the CWC and Micheal Lynes is their Leg Director. They recently made statements about how they are uncertain about taking a position on Sites because they are not sure it can deliver all of the benefits it promises. They also mentioned how they are working to protect the golden eagle so there may be a little bit of waiting to see our effects before taking a position on our benefits.

Let me know. thanks

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 5/12/2021 5:00:32 PM
To: Jagruti.Maroney@water.ca.gov; Sergent, Maureen@DWR [Maureen.Sergent@water.ca.gov]; Cooke, Robert@DWR [robert.cooke@water.ca.gov]; Jerry Brown [jbrown@sitesproject.org]; Okita, David@DWR [david.okita@water.ca.gov]; 'Rob Kunde (rkunde@wrmwsd.com)' [rkunde@wrmwsd.com]; Randal Neudeck [RNeudeck@mwdh2o.com]; Spranza, John [john.spranza@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]
CC: Marcia Kivett [MKivett@sitesproject.org]
Subject: RE: DWR Water Rights Technical Discussion
Attachments: 20210513_DWR-Sites Water Rights Annex_AGN.docx; DRAFT Water Rights Annex-20210512.docx

Good evening,

Attached is the agenda for tomorrow's water right discussion. I also attached a draft "annex" to the Operations Term Sheet that outlines the proposed parameters of the Sites project water right application. We will be spending the majority of the time tomorrow discussing this document.

Thanks!
Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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-----Original Appointment-----
From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Friday, April 30, 2021 8:45 AM
To: Marcia Kivett; Jagruti.Maroney@water.ca.gov; Sergent, Maureen@DWR; Cooke, Robert@DWR; Jerry Brown; Erin Heydinger; Okita, David@DWR; 'Rob Kunde (rkunde@wrmwsd.com)'; Randal Neudeck; John Spranza; Ali Forsythe
Subject: DWR Water Rights Technical Discussion
When: Thursday, May 13, 2021 3:00 PM-5:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

David, can you forward this to any additional team members from DWR.

Erin, can you review the list as well.

Microsoft Teams meeting

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(888) 404-2493,,921988924# United States (Toll-free)
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A Brown and Caldwell Teams meeting has been created for this event.

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Sites-DWR Operating Agreement Term Sheet Water Rights Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 13, 2021	**Location:**	Click here to join the meeting +1 213-379-5743,,921988924#
Start Time:	3:00 p.m.	**Finish Time:**	5:00 p.m.
Purpose:	Discuss Sites Reservoir Project water right application as it relates to the Sites-DWR Operating Agreement Term Sheet.		

Meeting Participants:

Rob Kunde	Jagruti Maroney	Aaron Miller
Randall Neudeck	Maureen Sergent	John Leahigh
Jerry Brown	Rob Cooke	
Ali Forsythe	David Okita	
Erin Heydinger		

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Overview a. Introductions and Assign Scribe b. Objectives	Brown	10 min
2. Review of historic filing and process for Sites Authority water right application	Forsythe	15 min
3. Discuss Sites water rights parameters and annex draft, identify areas where additional information is needed a. Coordination and Considerations b. Points of Diversion c. Diversion Criteria d. Points of Delivery e. Points of Rediversion f. Place of Use g. Purposes of Use	Forsythe/Heydinger	60 min

4.	Identify topics of future discussion	All	15 min
5.	Action items and next meeting	Scribe	5 min

DRAFT – Water Rights Annex
Sites-DWR Operating Agreement Term Sheet
May 12, 2021

OVERARCHING WATER RIGHTS COORDINATION AND CONSIDERATIONS

The Sites Authority intends to submit a water rights application to the State Water Resources Control Board (SWRCB) for the diversion of water from the Sacramento River into Sites Reservoir and for the beneficial use of that water. Depending on operational components and operational flexibility negotiated by the Parties, some modification to the place of use and/or point of rediversion to the existing water rights held by Reclamation may be required to realize full Project benefits tied to beneficial uses.

DWR and the Sites Authority will need to coordinate to be sure the application submitted by the Authority does not harm the operations of the SWP. The Parties will also coordinate in the event that DWR determines change petitions to its water rights are necessary. Similarly, the Sites Authority is discussing the Project with Reclamation and is expecting reach an understanding for their cooperation and support in regard to water rights for the Project. No consolidation of water rights is anticipated, and water rights (modified) will continue to be held individually by Reclamation, DWR, and the Authority. Reclamation, DWR, and the Sites Authority will partner on water rights hearings before the SWRCB as appropriate, while recognizing the need for Reclamation to ensure, through the application and hearing process, that the SWRCB include mutually agreeable terms and conditions in the Sites water right permit(s) that are necessary for implementation of the coordinated operations principles that are under development.

RELATIONSHIP OF THIS WATER RIGHT ANNEX TO COORDINATED OPERATIONS TERM SHEET

DWR, Reclamation and the Sites Authority have reached understandings regarding the coordinated operations of the Sites Reservoir Project with Reclamation's operations of the CVP and DWR'S operations of the SWP which are described in the Coordinated Operations Term Sheet. The Coordinated Operations term sheet serves as the base document for a series of issue specific "annexes", like this one. The reference to the "season" within each section of this document is intended to provide a tie back to the Coordinated Operations Term Sheet since that document is organized based on a seasonal analysis.

The purpose of this water right annex is to identify the parameters of the Sites Project water right application to ensure they are mutually agreeable to the Sites Authority, DWR, and Reclamation. The intention is to reach an understanding through discussions that are documented in the Operations Term Sheet and this Water Right Annex whereby Reclamation and DWR will be supportive of the Sites Authority's water rights actions that are expected to be initiated with an application in December 2021. The water right will identify all diversions and beneficial uses of water under the Sites Project, including that water which will be provided to Reclamation and the Central Valley Project as an investor in the Sites Project.

The following sections review the major areas of Sites Authority water rights application:

POINTS OF DIVERSION

CONFIDENTIAL Working draft, subject to change

Season: Excess Conditions, Near Excess (spring)

The Sites Authority will apply for the points of diversion listed in Table 1. The table also identifies existing water rights relevant to the facilities.

Table 1. Points of Diversion

Points of Diversion	Reference
GCID Main Canal	GCID's License 7208
TCCA Main Canal	June 30, 2011 SWRCB Order Approving Change in Point of Diversion and/or Rediversion and Amending Permit 12721, Application 5626 and others of the U.S. Bureau of Reclamation
Sites Dam	New facility
Golden Gate Dam	New Facility

DIVERSION CRITERIA

Season: Excess Conditions, Near Excess (spring)

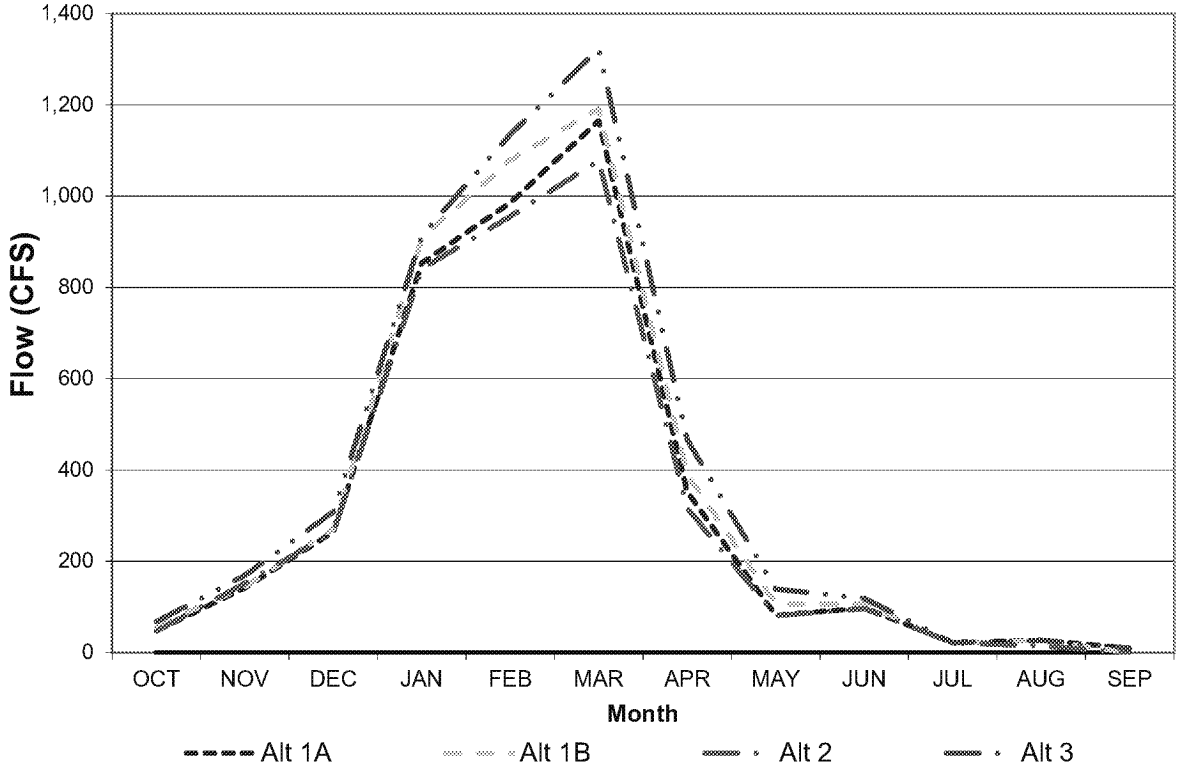
The Sites Project will divert water only when all of the following conditions are met:

- The Delta is in "excess" conditions as determined by Reclamation and DWR;
- Senior downstream water rights, existing CVP and SWP and other water rights diversions including CVP 215 water and Article 3F water and SWP Article 21 (interruptible supply), and other more senior flow priorities (such as diversions associated with Freeport Regional Water Project and existing Los Vaqueros Reservoir) have been satisfied;
- Flows are available for diversion above flows needed to meet all applicable laws, regulations, biological opinions and incidental take permits, and court orders in place at the time that diversion occurs. This would include, but is not limited to any flow requirements in Water Right Decision 1641, the 2019 ROC on LTO Biological Opinions (including spring pulse flow actions) and the SWP ITP;
- There is available capacity at the RBPP and the TC Canal and GCID facilities to divert and convey water to Sites Reservoir, above the capacity needed for deliveries to existing TC Canal users and within the GCID service area; and
- Flows in the Sacramento River exceed the minimum diversion criteria as required by State and Federal permits for the protection of aquatic species. See Attachment A for a description of the current conditions being discussed with resource agencies.

Sites will coordinate diversions with Reclamation and DWR in "near excess" conditions, as identified in the Operating Agreement Term Sheet.

When diversion criteria are met, the Sites Project will divert up to 2,100 cfs plus losses at the Red Bluff Pumping Plant and up to 1,800 cfs plus canal/seepage losses from the GCID Hamilton City Pump Station. The actual rate of diversions will depend on the available capacity of the canals, fish screen operations, and permitting conditions. The expected pattern of diversions throughout the year is shown in Figure 1.

Figure 1. Total Sites Diversion to Fill - Long-Term Average



DELIVERIES: POINTS OF DELIVERY

Season: Balanced Conditions, Near Excess (fall)

Sites will release water to Storage Partners (as defined in the Sites Storage Policy) as requested and as feasible based on conveyance, permitting, and storage constraints. The Point of Delivery for all Sites Project water will be the Terminal Regulating Reservoir on the GCID Main Canal or Funks Reservoir on the TCCA Canal. The Authority will assist Storage Partners in the conveyance of water beyond the Points of Delivery as requested, including coordinating with Reclamation and DWR on the conveyance of water to the Delta pumping plants.

DELIVERIES: POINTS OF REDIVERSION

Season: Balanced Conditions, Near Excess (fall)

The Points of Rediversion are determined based on expected operations and needs as they relate to operating objectives, including improving water supply reliability and providing supply towards environmental benefits funded by Proposition 1. Table 2 identifies the points of rediversion to be included in the Sites water right application.

Table 2 - Points of Rediversion

Points of Rediversion	**Reference**
North Bay Aqueduct	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
CCWD Old River Intake	August 25, 2010 SWRCB Amended Order Superseding and Replacing July 18, 1994 Order Amending Permit 12721 to Conform with Decision 1629
CCWD Victoria Canal Intake	August 25, 2010 SWRCB Amended Order Superseding and Replacing July 18, 1994 Order Amending Permit 12721 to Conform with Decision 1629
Reclamation's Rock Slough	Need description reference
CVP Jones Pumping Plant	CVP Permit 12721, Application 5626
SWP Banks Pumping Plant	SWP Permit 016478 Application 5630
California Aqueduct Intake	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
Clifton Court Forebay	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
Tracy Pumping Plant	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
Del Valle Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
San Luis Forebay Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
San Luis Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009

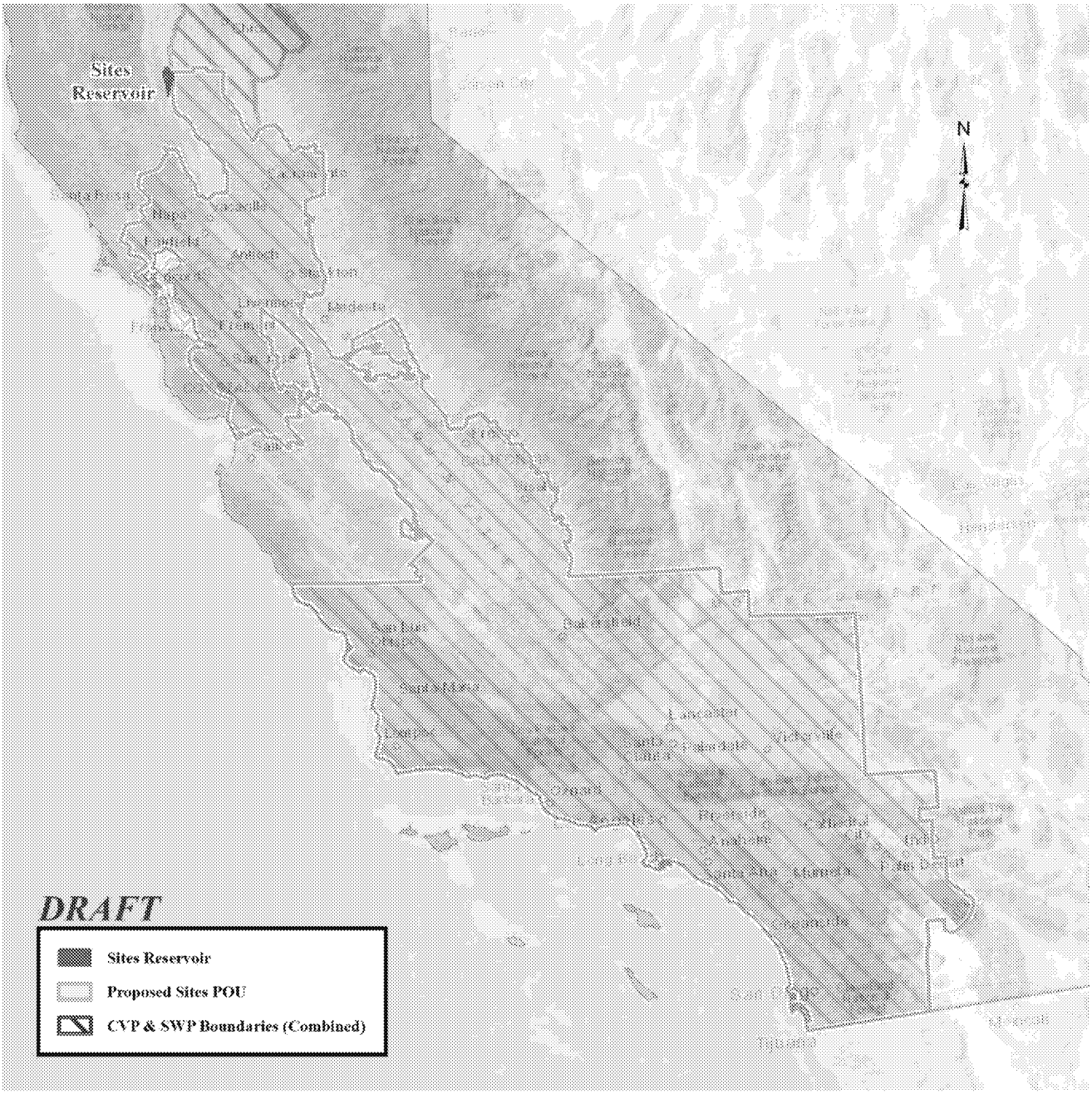
Cedar Springs Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
Pyramid Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
Perris Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009
Castaic Dam	SWP Amended Permit 16478, Application 5630, dated September 14, 2009

DELIVERIES: PLACE OF USE

Season: Balanced Conditions, Near Excess (fall). Could occur at other times for Storage Partners with additional storage capability.

The Sites Project intends to apply for a Place of Use consistent to the areas where Sites water is expected to be able to physically reach. Upstream of the Delta, the Place of Use will include the Central Valley Place of Use where water can physically reach and the Yolo Bypass. It is anticipated that use of Sites water within the place of use could lead to transfers of CVP and/or SWP water that would otherwise be received by Sites water users to other CVP and/or SWP water users that are not participating in Sites. In the Delta and downstream of the Delta, Sites will apply for a Place of Use consistent with the Central Valley Project's and State Water Project's Places of Use. Figure 2 depicts the approximate boundary of the Sites Project Place of Use.

Figure 2. Sites Project Proposed Place of Use.



DELIVERIES: PURPOSE OF USE

Season: Balanced Conditions, Near Excess (fall)

The purposes of use to be included in the water rights application are as follows:

- Irrigation
- Domestic
- Municipal
- Industrial
- Water quality
- Recreational
- Fish and wildlife preservation and enhancement
- Incidental power generation
- Stock watering

The Authority is coordinating with the SWRCB on the appropriate way to characterize groundwater storage in the water right application.

CVP AND SWP WATER RIGHTS MODIFICATIONS

At this time, the Sites Project is not requesting modifications to the CVP or SWP's existing water rights, nor are changes to those rights expected to be required for Sites operations. This does not preclude Sites participants to request modifications to such rights to accommodate their proposed use of their Sites storage allocation.

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 5/12/2021 5:21:03 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Flores, Amparo [aflores@zone7water.com]
Subject: RE: April actions
Attachments: Sites_2035CT_Description_20200924 (2).docx

Hi Amparo,

Attached is a brief memo that describes the climate change modeling, comparing the hydrology we are using for the EIR/EIS (2035 CT) and the 2030 WSIP hydrology which will be used for the Water Commission Feasibility Study. We will also be running a 2070 WSIP scenario for the Water Commission Feasibility as well. This memo does not directly mention the assumed sea level rise but it is 15 cm for the 2035 CT and the 2030 WSIP hydrology. It is 45 cm for the 2070 WSIP hydrology. Generally yes, Sites is able to divert more water under climate change scenarios due to an increase in large rainfall events. Please let me know if you need any further information on the specific assumptions beyond what is included here and in the memo.

Thanks!
Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

hdrinc.com/follow-us

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Monday, May 10, 2021 1:28 PM
To: Flores, Amparo <aflores@zone7water.com>
Cc: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: April actions

Erin – Can you help us out with this question? I think we might need to check in with the modeling team on the specific assumptions in the model.

Ali

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

From: Flores, Amparo <aflores@zone7water.com>
Sent: Monday, May 10, 2021 11:46 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Heydinger, Erin <erin.heydinger@hdrinc.com>
Subject: RE: April actions

Ali,

Is this statement correct? "Sites Reservoir performs well under the greater rainfall expected under climate change."

What are the assumptions regarding climate change precip patterns we are using for Sites? I have received some questions about our local rainfall patterns under climate change and assumptions we have previously made that they would be lower. I'm curious to hear what our consultants are assuming for Sites.

Thanks,
Amparo

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 6, 2021 11:25 AM
To: Flores, Amparo <aflores@zone7water.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>
Subject: RE: April actions

Hi Amparo – you are correct. Both were approved.

Ali

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

---

From: Flores, Amparo <aflores@zone7water.com>
Sent: Tuesday, May 4, 2021 9:35 PM
To: Heydinger, Erin <erin.heydinger@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: April actions

Erin and Ali,

I apparently didn't take good notes—I believe we approved the "Principles for the Storage, Delivery, and Sale of Sites Reservoir Project Water" and methodology for allocating storage space in Sites Reservoir. Correct? I'm preparing a Board report.

Thanks,
Amparo

2035 Central Tendency Climate Hydrology

The Sites Project Authority is preparing operations models for effects analysis in NEPA and CEQA documents. A climate change sensitivity analysis will be included these documents. For the climate change sensitivity analysis, the operations modeling team recommends the use of 2035 Central Tendency (2035 CT) near-term climate hydrology. This document describes development of the 2035 Central Tendency (2035 CT) climate hydrology in comparison to the WSIP 2030 climate hydrology.

Similar to WSIP 2030, 2035 CT projections indicate a warmer and wetter future. Average temperatures would increase by at least 1.5 degrees Celsius in all major watersheds. Precipitation is also projected increase by at least 2 percent in all major watersheds. Precipitation increases are higher in Northern California watersheds than in Southern California watersheds.

2035 Central Tendency (CT) boundary conditions were developed for the SWP LTO (DWR, 2020). This hydrology was also utilized in a sensitivity analysis in the ROC on LTO FEIS (Reclamation, 2019). It is expected that Reclamation will develop their updated baseline model with 2035 CT hydrology.

Aside from a slight variation in climate horizon, approach for developing 2035 CT differs from the WSIP 2030 approach. Table 1 summarizes general assumptions for development of the WSIP 2030 and 2035 CT climate hydrologies.

Table 1. General Assumptions for Development of WSIP 2030 and 2035 CT Climate Hydrologies

	WSIP 2030	**2035 CT**
Climate Horizon	Representative of a period centered in 2030, based on a reference period centered on 1995	Representative of a period centered on 2035, based on a reference period centered on 1995
General Circulation Model (GCM) and Projection Selection	20 CMIP5 GCM projections selected by California Climate Technical Advisory Group (CCTAF)	Same as WSIP 2030
Baseline Hydrologic Data	Temperature Detrended DCR 2015 Hydrology	DCR 2017 Hydrology (very similar to DCR 2015)
Incorporation of Dataset into CalSim II	Major watersheds: Obtained from VIC model Smaller watersheds: Fractional changes in VIC hydrology were applied to baseline hydrologic data	Fractional changes in VIC hydrology were applied to baseline hydrology data

Temperature detrending and direct incorporation of flow estimated with the Variable Infiltration Capacity (VIC) model are the largest differences between WSIP 2030 and 2035 CT. Although long-term average annual Central Valley runoff are similar under both climate hydrologies, the differing assumptions result in changes to spatial and temporal patterns of flows. Examples of these differences include:

- San Joaquin Valley flows are greater under WSIP 2030 as compared to 2035 CT

- WSIP 2030 climate does not represent drought conditions as rigorously as 2035 CT

More details regarding the 2035 CT climate condition are provided in Appendix F: Part 2: Attachment 1 of the Final Environmental Impact Report for Long-Term Operation of the California State Water Project (DWR, 2020).

References

California Department of Water Resources (DWR). 2020. Final Environmental Impact Report for Long-Term Operation of the California State Water Project: Appendix F Part 2: Attachment 1.

California Water Commission (CWC). 2016. Water Storage Investment Program: Technical Reference: Appendix A Climate Change and Sea-Level Rise.

United States Bureau of Reclamation (Reclamation). 2019. Final Environmental Impact Statement: Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project.

From: Michael Azevedo [mjazevedo@countyofcolusa.com]
Sent: 5/13/2021 6:44:45 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

I knew what you meant ☺

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 13, 2021 6:41 AM
To: Michael Azevedo <mjazevedo@countyofcolusa.com>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

And I had the wrong dam below. It was in reference to Sites Dam in the presentation. Its early. 😉

Ali

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

From: Michael Azevedo <mjazevedo@countyofcolusa.com>
Sent: Thursday, May 13, 2021 6:39 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Thank you.

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 13, 2021 6:36 AM
To: Michael Azevedo <mjazevedo@countyofcolusa.com>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Hi Mike – I saw that on the slide and thought that was a little strange. I plan to talk to him to see what that is from and what is driving those costs as I was under the impression that there would be minimal cost changes for Golden Gate Dam as they had to put in the bypass tunnel anyway (for construction and emergency releases).

We've included a study in the project description that we would begin in Amendment 3 (next amendment). The Caltrans Bridge Inspection reports will be really helpful now and when completing the study. But I don't think that they alone will be able to close the door on this for us. We will need to complete a more comprehensive study. I want to get the study done as soon as possible in Amendment 3 so we can refine this and adjust the cost.

I will check in with Mike Forrest to see how much of this cost increase is attributable to the environmental flows.

Ali

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

From: Michael Azevedo <mjazevedo@countyofcolusa.com>
Sent: Thursday, May 13, 2021 6:11 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Ali,

I noticed in one of Forest's slides yesterday there' a notation on the need for Stone Corrals bypass flows resulting in increased costs due to environmental requirements.

Have you had a chance to review the Caltrans Bridge Inspection reports I've provided? They indicate the channel being dry more often than not. I'm hopeful that information may provide some bypass flow relief and help reduce costs.

Michael J Azevedo

Colusa County Public Works
530.458.0466

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Sent: Tuesday, May 11, 2021 5:47 PM
To: Marcia Kivett <mkivett@sitesproject.org>; Luu, Henry <Henry.Luu@hdrinc.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>; Thad Bettner <tbettner@gcid.net>; Rob Kunde <rkunde@wrmwsd.com>; Eric Leitterman <ELeitterman@valleywater.org>; Robert Cheng <RCheng@cvwd.org>; William Vanderwaal <wvanderwaal@rd108.org>; druiz@westsidewd.com; Bob Tincher <bobt@sbvmwd.com>; fhernandez@cityofamericancanyon.org; AFlores (AFlores@zone7water.com) <AFlores@zone7water.com>; JSutton@tccanal.com; Randall Neudeck <rneudeck@mwdh2o.com>; Dirk Marks <dmarks@scvwa.org>; Wang,Chuching <cwang@mwdh2o.com>; Petya Vasileva <PVasileva@cvwd.org>; Xie, Lillian <lxie@zone7water.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Forrest, Michael <michael.forrest@aecom.com>; Herrin, Jeff <jeff.herrin@aecom.com>;

Alicia Forsythe <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>; bennett@irwd.com
Cc: Kayla Mendonca <kmendonca@gcid.net>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Good evening,

Attached is the agenda for tomorrow's ad hoc workgroup meeting.

Talk to you then,
Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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-----Original Appointment-----
From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Friday, April 2, 2021 1:59 PM
To: Marcia Kivett; Luu, Henry; Michael Azevedo ; Thad Bettner ; Rob Kunde; Eric Leitterman; Robert Cheng; William Vanderwaal; druiz@westsidewd.com; Bob Tincher; fhernandez@cityofamericancanyon.org; AFlores (AFlores@zone7water.com); JSutton@tccanal.com; Randall Neudeck; Dirk Marks; Wang,Chuching; Petya Vasileva; Xie, Lillian; Heydinger, Erin; Rude, Pete/RDD; Forrest, Michael; Herrin, Jeff; Ali Forsythe; Jerry Brown; bennett@irwd.com
Cc: Kayla Mendonca; Smith, Jeff/SAC
Subject: Sites Reservoir Operations & Engineering Workgroup
When: Wednesday, May 12, 2021 2:00 PM-3:30 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Thank you all for your quick response.

Thad/Kayla, I realize this does not work with your schedule. Please accept as tentative in case something changes.

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

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/13/2021 7:40:07 AM
To: Jerry Boles [chicojerry@yahoo.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites Water Quality Discussion Group Meeting No.2: In Reservoir Topics

HI Jerry,
Sorry you can't make it today, I will send you the PowerPoint and action items after the meeting.

Regarding the data, I will pass your observation along to the technical team and circle back.

John

John Spranza

D 916.679.8858 M 818.640.2487

From: Jerry Boles <chicojerry@yahoo.com>
Sent: Wednesday, May 12, 2021 7:29 PM
To: Cam Irvine <cam@robertson-bryan.com>; jimb@aqualliance.net; dobegi@nrdc.org; reis@bayecotarium.org; rzwillinger@defenders.org; DLucero@ButteCounty.net; rebeccadawnwu@yahoo.com; regina@californiasalmon.org; Huber, Anne <anne.huber@icf.com>; Williams, Nicole (Nicole.Williams@icf.com) <nicole.williams@icf.com>; Micko, Steve/SAC (Steve.Micko@jacobs.com) <steve.micko@jacobs.com>; David Zelinsky <zelinsky.david@gmail.com>; asanchez@calwild.org; Ron Stork <rstork@friendsoftheriver.org>; Gratreak, Leesa <Leesa.Gratreak@hdrinc.com>; Julie.zimmerman@tnc.org; anthony@asaracino.com; Jay_Ziegler@tnc.org; Spranza, John <John.Spranza@hdrinc.com>; Tom Stokely <tstokely@att.net>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Davis, Ryan A <rdavis@usbr.gov>; Dekar, Melissa D <mdekar@usbr.gov>; King, Vanessa M <vking@usbr.gov>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Morgan, Joseph <morgan.joseph@epa.gov>; Gordon, Stephanie (Skophammer) <gordon.stephanies@epa.gov>; Wolder, Natalie L <nwolder@usbr.gov>; Deeds, Daniel A <ddeeds@usbr.gov>
Subject: Re: Sites Water Quality Discussion Group Meeting No.2: In Reservoir Topics

Hi John-

Unfortunately, I will not be able to participate in the meeting tomorrow. However, I would appreciate receiving a summary of the meeting and any meeting materials.

You sent out some summary tables of metals concentrations in the Sacramento River. I reviewed the data for "Metal concentrations reported in the DWR Water Data Library for the Sacramento River below Red Bluff (Station A0275890)." Your analyses only include half the data for this station. For example, your analyses indicate that for dissolved aluminum, there were 68 analyses with a maximum concentration of 1081 ug/L. In reality, there were 134 analyses with a maximum concentration of 1459 ug/L. The reason, I suspect, that you did not include the other 66 analyses is that there is some confusion regarding station location. DWR indicates two monitoring sites at this location - the other being number A0275500. These two stations are located about 50 feet apart - same water at both. I suspect that the person doing the sampling at the newer of the two stations was not aware of the other existing station. DWR uses the stations interchangeably, sometimes collecting samples at one, sometimes at the other. This makes a big difference in your analyses of number of samples and concentrations. In addition, it would be useful to see a summary of the concentrations during the months of December through March, since that is when the Sites project would be diverting as well as when concentrations of metals are highest in the Sacramento River.

Thanks

Jerry Boles

On Thursday, May 6, 2021, 3:12:36 PM PDT, Tom Stokely <tstokely@att.net> wrote:

Thanks John.

The Metals Data Summary Tables would be more useful if the MCL or any kind of regulatory limit is included.

Thanks!

Tom Stokely
Salmon and Water Policy Consultant
530-524-0315
tstokely@att.net

On Thursday, May 6, 2021, 2:31:31 PM PDT, Spranza, John <john.spranza@hdrinc.com> wrote:

Hello,

Attached is the agenda for our upcoming water quality discussion. Also attached is a table that provides the additional metals information requested by participants in the first water quality group discussion. It shows location, timing, number of data points, and minimum, mean, and maximum values for metals (excluding mercury).

Talk with you on the 13th

John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----
From: Spranza, John
Sent: Thursday, April 29, 2021 8:13 AM
To: Spranza, John; Cam Irvine; tstokely@att.net; jimb@aqualliance.net; dobegi@nrdc.org; reis@bayecotarium.org; rzwillinger@defenders.org; DLucero@ButteCounty.net; rebeccadawnwu@yahoo.com; chicojerry@yahoo.com; regina@californiasalmon.org; Huber, Anne; Williams, Nicole (Nicole.Williams@icf.com); Micko, Steve/SAC (Steve.Micko@jacobs.com); David Zelinsky; asanchez@calwild.org; Ron Stork; Gratreak, Leesa; Julie.zimmerman@tnc.org; anthony@asaracino.com; Jay_Ziegler@tnc.org
Cc: aforsythe (aforsythe@sitesproject.org); Davis, Ryan A; Melissa Dekar (mdekar@usbr.gov); King, Vanessa M; Laurie Warner Herson; Erin Heydinger (Erin.Heydinger@hdrinc.com); Morgan, Joseph; Gordon, Stephanie (Skophammer); Wolder, Natalie L; Deeds, Daniel A
Subject: Sites Water Quality Discussion Group Meeting No.2: In Reservoir Topics
When: Thursday, May 13, 2021 1:00 PM-2:30 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

The second meeting of our water quality discussion group that will focus on in reservoir topics.

Agenda to follow.

Microsoft Teams meeting

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From: Tim Johnson [tjohnson@calrice.org]
Sent: 5/13/2021 2:17:45 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Spranza, John [john.spranza@hdrinc.com]
Subject: Re: Sites Reservoir Project - Questions on Rice Water Temperature and Mercury/Arsenic Concerns

All easily answered. Let me coordinate with Paul in our office and get a date and time back to you.

Thanks
Tim

On May 13, 2021, at 12:59 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Hi Tim – I am leading the environmental planning effort for the Sites Reservoir Project. We're in the midst of preparing our Revised Draft EIR/Supplemental Draft EIS. We've also have been having meetings with environmental NGOs on the Project and Project effects.

Through our analysis efforts and some concerns that have been raised in our NGO meetings, we wanted to schedule some time with you or the appropriate person in your team. We have the following topics we would like to discuss:

1. Optimal water temperatures for rice throughout the year. This comes into play in releases from Sites back into the TC Canal and the GCID Main Canal.
2. Rice and mercury effects.
3. Rice and arsenic effects.

John and I are generally available next Tuesday afternoon (5/18) and anytime next Friday (5/21). Is there a time next week that would work for you on either of these days for a Microsoft Teams discussion?

Ali

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

From: Luu, Henry [Henry.Luu@hdrinc.com]
Sent: 5/14/2021 6:54:17 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
CC: Spranza, John [john.spranza@hdrinc.com]
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Hi Ali,

Just a status update on this item – I agree, ecosystem component of the Sites Dam should be relatively minor. I asked the HR team for a breakdown yesterday and will get it to you as soon as we have it.

Henry N. Luu, PE
D 916.679.8857 M 916.754.7566

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 13, 2021 6:40 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Spranza, John <John.Spranza@hdrinc.com>
Subject: FW: Sites Reservoir Operations & Engineering Workgroup

Henry – See the email exchange below. Slide 37 in the presentation yesterday identified that there were increased costs at Sites Dam due to ecosystem and emergency drawdown. Can we identify how much of this is actually for ecosystem? I didn't think this was a big cost component as we need the tunnel and release structure for emergency drawdown anyway.

Ali

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

From: Alicia Forsythe
Sent: Thursday, May 13, 2021 6:36 AM
To: Michael Azevedo <mjazevedo@countyofcolusa.com>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Hi Mike – I saw that on the slide and thought that was a little strange. I plan to talk to him to see what that is from and what is driving those costs as I was under the impression that there would be minimal cost changes for Golden Gate Dam as they had to put in the bypass tunnel anyway (for construction and emergency releases).

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alone will be able to close the door on this for us. We will need to complete a more comprehensive study. I want to get the study done as soon as possible in Amendment 3 so we can refine this and adjust the cost.

I will check in with Mike Forrest to see how much of this cost increase is attributable to the environmental flows.

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

From: Michael Azevedo <mjazevedo@countyofcolusa.com>
Sent: Thursday, May 13, 2021 6:11 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Ali,

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Have you had a chance to review the Caltrans Bridge Inspection reports I've provided? They indicate the channel being dry more often than not. I'm hopeful that information may provide some bypass flow relief and help reduce costs.

Michael J Azevedo

Colusa County Public Works
530.458.0466

From: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Sent: Tuesday, May 11, 2021 5:47 PM
To: Marcia Kivett <mkivett@sitesproject.org>; Luu, Henry <Henry.Luu@hdrinc.com>; Michael Azevedo <mjazevedo@countyofcolusa.com>; Thad Bettner <tbettner@gcid.net>; Rob Kunde <rkunde@wrmwsd.com>; Eric Leitterman <ELeitterman@valleywater.org>; Robert Cheng <RCheng@cvwd.org>; William Vanderwaal <wvanderwaal@rd108.org>; druiz@westsidewd.com; Bob Tincher <bobt@sbvmwd.com>; fhernandez@cityofamericancanyon.org; AFlores (AFlores@zone7water.com) <AFlores@zone7water.com>; JSutton@tccanal.com; Randall Neudeck <rneudeck@mwdh2o.com>; Dirk Marks <dmarks@scvwa.org>; Wang,Chuching <cwang@mwdh2o.com>; Petya Vasileva <PVasileva@cvwd.org>; Xie, Lillian <lxie@zone7water.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Forrest, Michael <michael.forrest@aecom.com>; Herrin, Jeff <jeff.herrin@aecom.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Jerry Brown <jbrown@sitesproject.org>; bennett@irwd.com
Cc: Kayla Mendonca <kmendonca@gcid.net>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>
Subject: RE: Sites Reservoir Operations & Engineering Workgroup

Good evening,

Attached is the agenda for tomorrow's ad hoc workgroup meeting.

Talk to you then,
Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

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Sent: Friday, April 2, 2021 1:59 PM
To: Marcia Kivett; Luu, Henry; Michael Azevedo ; Thad Bettner ; Rob Kunde; Eric Leitterman; Robert Cheng; William Vanderwaal; druiz@westsidewd.com; Bob Tincher; fhernandez@cityofamericancanyon.org; AFlores (AFlores@zone7water.com); JSutton@tccanal.com; Randall Neudeck; Dirk Marks; Wang,Chuching; Petya Vasileva; Xie, Lillian; Heydinger, Erin; Rude, Pete/RDD; Forrest, Michael; Herrin, Jeff; Ali Forsythe; Jerry Brown; bennett@irwd.com
Cc: Kayla Mendonca; Smith, Jeff/SAC
Subject: Sites Reservoir Operations & Engineering Workgroup
When: Wednesday, May 12, 2021 2:00 PM-3:30 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Thank you all for your quick response.

Thad/Kayla, I realize this does not work with your schedule. Please accept as tentative in case something changes.

Microsoft Teams meeting

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Sites-DWR Operating Agreement Term Sheet Water Rights Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 13, 2021	**Location:**	Click here to join the meeting +1 213-379-5743,,921988924#
Start Time:	3:00 p.m.	**Finish Time:**	5:00 p.m.
Purpose:	Discuss Sites Reservoir Project water right application as it relates to the Sites-DWR Operating Agreement Term Sheet.		

Meeting Participants:

Rob Kunde	Jagruti Maroney	Aaron Miller
Randall Neudeck	Maureen Sergent	John Leahigh
Jerry Brown	Rob Cooke	
Ali Forsythe	David Okita	
Erin Heydinger		

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Overview a. Introductions and Assign Scribe b. Objectives	Brown	10 min
2. Review of historic filing and process for Sites Authority water right application	Forsythe	15 min
3. Discuss Sites water rights parameters and annex draft, identify areas where additional information is needed a. Coordination and Considerations b. Points of Diversion c. Diversion Criteria d. Points of Delivery e. Points of Rediversion f. Place of Use g. Purposes of Use	Forsythe/Heydinger	60 min

4.	Identify topics of future discussion	All	15 min
5.	Action items and next meeting	Scribe	5 min

Action Items

1. A good description of the water right application filing process would be helpful to prevent confusion over responsibilities for A025517.
2. Sites team needs to review if impoundment of Stone Corral and Funks creeks could affect times when excess conditions would be in effect and/or effect ability to divert this water to storage.
3. Sites to check on A025517priority over any CVP or SWP water, appears that we are based on application numbering but need to confirm.

Notes

General overview of Sites water right process

- Sites project approach for water rights:
  - Seeking assignment of previous DWR filing A025517 (Colusa Reservoir Complex 1977)
  - Release from priority A025514 and A025513 (Glenn Reservoir Complex)
  - Submitting application Dec 2021
  - Looking to have water right in 2023
  - Limiting diversion to time when river is not fully appropriated, and delta is in excess conditions
- AI: Sites to check on priority over any CVP or SWP, appears that we are but need to confirm
- Does DWR have to do anything to allow us to use A025517?
  - DWR does not have to take further action even though DWR filed the 1977 application
  - No jurisdiction or authority over the use of those proposed rights
  - Filed to "preserve for state", but the SWRCB has the authority to assign that right.
  - AI: A good description of the water right application filing process would be helpful to prevent confusion over responsibilities for A025517.

Review of the Annex document

- General overview of the Site's planned water right application
  - Points of diversion
  - Points of rediversion
  - Place of use
  - Diversion criteria
  - Etc.
- Funks and Stone Corral Creeks
  - Will be impounded and Sites is still working to determine water rights associated with them but intends to file for storage for them.
  - Would water need to be passed through the dams if delta is not in excess conditions?
  - AI: Sites team need to review if impoundment of these creeks could affect times when excess conditions would be in effect?
  - Need to be identified in the application as a water source and that they would not be subject to excess conditions that are being placed on the river diversion criteria
    - Include a discussion of the hydraulic connectivity of the creeks and the Sacramento river
- Oroville water would not be Sites water it is SWP water under SWP rights and would not need point of rediversion due to that. It would be an exchange, not a divert to storage.

- Use of DRW facilities still needs an agreement with DWR for activities that have been permitted the State Board
- Is there anyway that SWP water could be put in Sites?
    - Not likely, but who knows in the future which is why we are not requesting modifications to SWP water rights.
- Groundwater storage of Sites water (and avoiding undesirable effects as a use) would be covered under proposed purpose of use as it is the use of the water after the water was stored in groundwater that the State Board is interested in.
- New electronic water right filing system is in place
    - Challenging system to use and still in development
    - Sites was able to get a .pdf version of the application for internal use but the Board Staff will not accept paper copies

Additional topics for future discussion

- DWR will be filing 1707 for pulse flows but no other planned actions that could conflict with Sites application and filing.
- As Sites water will be non-project water it should be identified as such for COA accounting.
    - Sites would prefer to have full agreements/terms/conditions with potential protestors (DWR, BOR, CCWD…) before the application goes in.
- General consensus that we have covered the main components in the Annex and that additional meetings between Sites and DWR are not currently needed. This can be revisited as needed.

Sites-DWR Operating Agreement Term Sheet Water Rights Agenda

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3. Sites to check on A025517 priority over any CVP or SWP water, appears that we are junior based on application numbering but need to confirm. Intent is that Sites operates junior to SWP/CVP.

Notes

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  - Filed to "preserve for state", but the SWRCB has the authority to assign that right.
  - AI: A good description of the water right application filing process would be helpful to prevent confusion over responsibilities for A025517.

Review of the Annex document

- General overview of the Site's planned water right application
  - Points of diversion
  - Points of rediversion
  - Place of use
  - Diversion criteria
  - Etc.
- Funks and Stone Corral Creeks
  - Will be impounded and Sites is still working to determine water rights associated with them but intends to file for storage for them.
  - Would water need to be passed through the dams if delta is not in excess conditions?
  - AI: Sites team need to review if impoundment of these creeks could affect times when excess conditions would be in effect?
  - Need to be identified in the application as a water source and that they would not be subject to excess conditions that are being placed on the river diversion criteria
    - Include a discussion of the hydraulic connectivity of the creeks and the Sacramento river
- Oroville water would not be Sites water it is SWP water under SWP rights and would not need point of rediversion due to that. It would be an exchange, not a divert to storage.

- Use of DWR facilities still needs an agreement with DWR for activities that have been permitted the State Board
- Is there anyway that SWP water could be put in Sites?
    - Not likely, but the future is uncertain, so we are specifically identifying that the Sites project is not requesting modifications to SWP water rights.
- Groundwater storage of Sites water (and avoiding undesirable effects as a use) would be covered under proposed purpose of use as it is the use of the water after the water was stored in groundwater that the State Board is interested in.
- New electronic water right filing system is in place
    - Challenging system to use and still in development
    - Sites was able to get a .pdf version of the application for internal use but the Board Staff will not accept paper copies

Additional topics for future discussion

- DWR will be filing 1707 for pulse flows but no other planned actions that could conflict with Sites application and filing.
- As Sites water will be non-project water it should be identified as such for COA accounting.
    - Sites would prefer to have full agreements/terms/conditions with potential protestors (DWR, BOR, CCWD…) before the application goes in.
- General consensus that we have covered the main components in the Annex and that additional meetings between Sites and DWR are not currently needed. This can be revisited as needed.

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/14/2021 11:52:31 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: Sites - A few things to catch up on

Hi,
#1: I just sent out an email before you sent this, they crossed in the internet
#2: I will review now and finalize
#3: Sounds good. Invite Ellen Berryman, Monique, and John H.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Friday, May 14, 2021 11:48 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Subject: Sites - A few things to catch up on

Hey John – A few things that we need to catch up on –

1. I went to schedule the call with Tim Johnson for 11 am on Tuesday and we have a meeting with the State Board staff on that day. I assume the meeting is still on, but wanted to check before I tell Tim that we need to find another time. Let me know.

2. We need to wrap up the Work Group presentation. Harry added numbers in for the mitigation costs but they are lower than what the members are thinking. Can you look at his updates to this section and review/adjust? We've been holding $540M as the mitigation cost.

3. Jeff Sutton would like a full briefing on species and Funks. I am thinking that I get a doodle poll out to get this scheduled. Thinking that we walk him through the land over mapping around Funks, and then any and all species mapping around Funks. Then talk about CEQA, ESA and ITP and the different requirements, then again on our approach (assume presence and then survey later). I'll forward you his email. Don't forward it onto the team. Let me know who I should invite to this so I can get a doodle poll out and get this scheduled.

This week has been crazy and I'm glad that we're almost to the weekend.

Ali

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

From: Leaf, Rob/SAC [Rob.Leaf@jacobs.com]
Sent: 5/14/2021 12:06:21 PM
To: Heydinger, Erin [erin.heydinger@hdrinc.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; steve.micko@jacobs.com
Subject: Sites Project EIRS - American River redd dewatering/wua observation in the No Action Alternative

Erin,

The American River redd dewatering/wua observation in the No Action Alternative has gotten the attention of the Reclamation ROC team.
Can you please forward me the information presented to Reclamation so that I can understand the observation and follow up on Reclamation's concerns?

Robert Leaf, PE, MBA
Water Resources Engineer
D 1 916 286 0393
M 1 530 417 7628

JACOBS
www.jacobs.com | LinkedIn | Twitter | Facebook | Instagram

From: Heydinger, Erin [Erin.Heydinger@hdrinc.com]
Sent: 5/14/2021 12:16:18 PM
To: Leaf, Rob/SAC [Rob.Leaf@jacobs.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; steve.micko@jacobs.com
Subject: RE: Sites Project EIRS - American River redd dewatering/wua observation in the No Action Alternative

Hi Rob,

Yes, I have requested the tables from ICF and will send them over when I get them.

Erin

Erin Heydinger PE, PMP
D 916.679.8863 M 651.307.9758

hdrinc.com/follow-us

From: Leaf, Rob/SAC <Rob.Leaf@jacobs.com>
Sent: Friday, May 14, 2021 12:06 PM
To: Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Cc: Alicia Forsythe <aforsythe@sitesproject.org>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Subject: Sites Project EIRS - American River redd dewatering/wua observation in the No Action Alternative

Erin,

The American River redd dewatering/wua observation in the No Action Alternative has gotten the attention of the Reclamation ROC team.
Can you please forward me the information presented to Reclamation so that I can understand the observation and follow up on Reclamation's concerns?

Robert Leaf, PE, MBA
Water Resources Engineer
D 1 916 286 0393
M 1 530 417 7628

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From: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Sent: 5/14/2021 2:38:34 PM
To: Nicole Williams [Nicole.Williams@icf.com]
CC: Alicia Forsythe [aforsythe@sitesproject.org]; Linda Fisher [Linda.Fisher@hdrinc.com]
Subject: Fwd: [EXTERNAL] RE: Sites - cumulative projects list
Attachments: Draft Cumulative Projects - sh.docx

Sent from my iPhone

Begin forwarded message:

From: "Dekar, Melissa D" <mdekar@usbr.gov>
Date: May 14, 2021 at 1:30:02 PM PDT
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Cc: "King, Vanessa M" <vking@usbr.gov>
Subject: FW: [EXTERNAL] RE: Sites - cumulative projects list

Hi Laurie,

Here is some feedback on the cumulative projects list from my supervisor, Shane Hunt. Please let me know if you have questions or want to discuss.

Melissa

From: Hunt, Shane D <shunt@usbr.gov>
Sent: Friday, May 14, 2021 1:25 PM
To: Dekar, Melissa D <mdekar@usbr.gov>
Subject: RE: [EXTERNAL] RE: Sites - cumulative projects list

Hi Melissa,
I looked through the table and made a few comments. In addition, it seems like we might want to consider adding things like the overall California EcoRestore Program, FERC relicensing activities, Del Puerto Canyon Reservoir, all of the WSIP projects that have been given preliminary funding under the program (https://cwc.ca.gov/Water-Storage), SGMA, fixing subsidence issues on the DMC, CA aqueduct, and FKC, and maybe high-speed rail.

There is a pretty substantial list of projects that were considered for the ROC EIS in 2019 that might be useful to check to see what is on that list that isn't on the Sites list and consider adding them. The cumulative appendix is here: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=41691

Let me know if you have any questions.
Hope this helps.
Thanks,
Shane

Shane Hunt

Environmental Compliance and Conservation Branch
Bureau of Reclamation, CGB-152
2800 Cottage Way
Sacramento, CA 95825
(916) 978-5051 (office)
(916) 202-7158 (cell)

From: Dekar, Melissa D <mdekar@usbr.gov>
Sent: Wednesday, May 12, 2021 7:36 AM
To: Hunt, Shane D <shunt@usbr.gov>
Subject: RE: [EXTERNAL] RE: Sites - cumulative projects list

Hey Shane,

Just checking in to see if you've had a minute to look at this or have any feedback.

Thanks,
Melissa

From: Dekar, Melissa D
Sent: Wednesday, May 5, 2021 9:44 AM
To: Hunt, Shane D <shunt@usbr.gov>
Subject: FW: [EXTERNAL] RE: Sites - cumulative projects list

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Wednesday, May 5, 2021 8:41 AM
To: Dekar, Melissa D <mdekar@usbr.gov>
Cc: King, Vanessa M <vking@usbr.gov>
Subject: [EXTERNAL] RE: Sites - cumulative projects list

Hi Melissa,

Attached is a draft table of projects being considered for the cumulative analysis. ICF is currently working from this table to develop the chapter, due at the end of the month. Please review and let us know if you have any changes.

Thanks,

Laurie

From: Dekar, Melissa D <mdekar@usbr.gov>
Sent: Wednesday, May 5, 2021 7:58 AM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>

Cc: King, Vanessa M <vking@usbr.gov>
Subject: Sites - cumulative projects list

Hey Laurie,

I was just remembering that you had a list of projects that would be happening concurrently with Sites/we are planning to include in the cumulative effects section. Can you let me know when to expect that list? I just want to be sure it doesn't fall off my radar.

Thanks!
Melissa

Melissa Dekar
Natural Resources Specialist
Environmental Compliance and Conservation Branch, CGB-152
2800 Cottage Way, Sacramento, CA, 95825
Interior Region 10, Bureau of Reclamation
916-978-6153 mdekar@usbr.gov

Ad Hoc Environmental Planning and Permitting Work Group Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 17, 2021	**Location:**	Microsoft Teams
Start Time:	10:00 a.m.	**Finish Time:**	12:00 p.m.
Purpose:	Ongoing update for the Ad Hoc Environmental Planning and Permitting Work Group for 2021		

Meeting Participants:

Mike Azevedo, Colusa County	Cindy Kao, Valley Water	Monique Briard, ICF
Ben Barker, PCWA	Rob Kunde, WR-M WSD	Jerry Brown, Sites Authority
Thad Bettner, GCID	Eric Leitterman, Valley Water	Linda Fisher, Sites Integration
Dee Bradshaw, MWD	Jason Marks, City of Roseville	Ali Forsythe, Sites Authority
Robert Cheng, CVWD	Randall Neudeck, MWD	Harry Oakes, ICF
Jeff Davis, SGPWA	Jeff Sutton, TCCA	John Spranza, Sites Integration
Heather Dyer, SBVMWD	Bill Vanderwaal, RD 108	Laurie Warner Herson, Sites Integration
Katrina Jessup, Valley Water	Chuching Wang, MWD	
Trevor Joseph, City of Roseville	Ellen Berryman, ICF	Nicole Williams, ICF

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Introductory Remarks and Review of Agenda	Thad / Heather / Ali	5 min
2. RDEIR/SDEIS – Document Overview Part 2 a. Project Commitments b. Key Preliminary Findings in the Construction-related Chapters c. Local Issues and Considerations Feedback needed: Review and provide input and feedback in preparation for the August 2021 public release.	Laurie/ Nicole	20 min
3. Permitting		45 min
a. Water Rights Application Update	John	

	b. Biological Assessment/Incidental Take Permit Construction Impacts Overview Feedback needed: Review and provide direction on progress of permitting efforts.	Ellen/ John	
4.	Mitigation Cost Estimate Feedback needed: Review and provide input on changes to the mitigation cost estimate since the Value Planning estimate.	Harry	25 min
5.	Schedule and Dashboard Update	Ali	10 min
6.	Upcoming Priorities and Timing of Next Meeting	Ali	5 min

From: robert cheng (Guest)
Sent: 5/17/2021 11:04:32 AM
To: Marcia Kivett [MKivett@BrwnCald.com]; Thad Bettner [tbettner@gcid.net]; 8:orgid:7525c9b0-fb35-4a08-b6a4-64eee8cc869a; 8:orgid:8b23c338-6415-4a5b-8897-cdb463b7df16; 8:teamsvisitor:4fce0bdcd69d4cfb903bbb14c1d39571; 8:teamsvisitor:20911760961448088b317c67d061b9d6; Briard, Monique [Monique.Briard@icf.com]; 8:orgid:dfaba08b-c04b-4ca7-a38a-767670966aa7; 8:orgid:a85ffe09-aff8-4624-a2cf-543aa0f564db; Williams, Nicole [Nicole.Williams@icf.com]; Oakes, Harry [Harry.Oakes@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Eric Leitterman [ELeitterman@valleywater.org]; Bradshaw,Dee [VBradshaw@mwdh2o.com]; Wang,Chuching [cwang@mwdh2o.com]; Berryman, Ellen [Ellen.Berryman@icf.com]; Neudeck,Randall D [rneudeck@mwdh2o.com]; 8:teamsvisitor:ff00b0f3f6cc4edeb3b1b57a6c0d0233; Rob Kunde [rkunde@wrmwsd.com]

Can you please explain the difference between water quality and fish and wildlife preservation and enhancement?

From: Sergent, Maureen@DWR [Maureen.Sergent@water.ca.gov]
Sent: 5/18/2021 9:54:35 AM
To: Spranza, John [john.spranza@hdrinc.com]; Marcia Kivett [MKivett@sitesproject.org]; Maroney, Jagruti@DWR [Jagruti.Maroney@water.ca.gov]; Cooke, Robert@DWR [Robert.Cooke@water.ca.gov]; Jerry Brown [jbrown@sitesproject.org]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Okita, David@DWR [David.Okita@water.ca.gov]; 'Rob Kunde (rkunde@wrmwsd.com)' [rkunde@wrmwsd.com]; Randal Neudeck [RNeudeck@mwdh2o.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: DWR Water Rights Technical Discussion
Attachments: 20210513_DWR-Sites Water Rights Annex_AGN and Notes_MS.docx

Attached are my comments on the draft notes of the meeting. Let me know if you have any questions.

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Friday, May 14, 2021 11:48 AM
To: Marcia Kivett <mkivett@sitesproject.org>; Maroney, Jagruti@DWR <Jagruti.Maroney@water.ca.gov>; Sergent, Maureen@DWR <Maureen.Sergent@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Jerry Brown <jbrown@sitesproject.org>; Heydinger, Erin <erin.heydinger@hdrinc.com>; Okita, David@DWR <David.Okita@water.ca.gov>; 'Rob Kunde (rkunde@wrmwsd.com)' <rkunde@wrmwsd.com>; Randal Neudeck <RNeudeck@mwdh2o.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: DWR Water Rights Technical Discussion

Hello and Happy Friday,

Attached for your review and comment are the draft notes from yesterday's meeting. Please send any edits to me and I will consolidate.
Thanks.
John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----
From: Marcia Kivett <MKivett@sitesproject.org>
Sent: Friday, April 30, 2021 8:45 AM
To: Marcia Kivett; Jagruti.Maroney@water.ca.gov; Sergent, Maureen@DWR; Cooke, Robert@DWR; Jerry Brown; Erin Heydinger; Okita, David@DWR; 'Rob Kunde (rkunde@wrmwsd.com)'; Randal Neudeck; John Spranza; Ali Forsythe
Subject: DWR Water Rights Technical Discussion
When: Thursday, May 13, 2021 3:00 PM-5:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Good evening,

Attached is the agenda for tomorrow's water right discussion. I also attached a draft "annex" to the Operations Term Sheet that outlines the proposed parameters of the Sites project water right application. We will be spending the majority of the time tomorrow discussing this document.

Thanks!
Erin

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

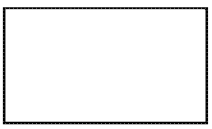
Or call in (audio only)

+1 213-379-5743,,921988924# United States, Los Angeles

(888) 404-2493,,921988924# United States (Toll-free)

Phone Conference ID: 921 988 924#

Find a local number | Reset PIN



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

Learn More | Help | Meeting options

Sites-DWR Operating Agreement Term Sheet Water Rights Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 13, 2021	**Location:**	Click here to join the meeting +1 213-379-5743,,921988924#
Start Time:	3:00 p.m.	**Finish Time:**	5:00 p.m.
Purpose:	Discuss Sites Reservoir Project water right application as it relates to the Sites-DWR Operating Agreement Term Sheet.		

Meeting Participants:

Rob Kunde	Jagruti Maroney
Randall Neudeck	Maureen Sergent
Jerry Brown	Rob Cooke
Ali Forsythe	David Okita
Erin Heydinger	

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Overview a. Introductions and Assign Scribe b. Objectives	Brown	10 min
2. Review of historic filing and process for Sites Authority water right application	Forsythe	15 min
3. Discuss Sites water rights parameters and annex draft, identify areas where additional information is needed a. Coordination and Considerations b. Points of Diversion c. Diversion Criteria d. Points of Delivery e. Points of Rediversion f. Place of Use g. Purposes of Use	Forsythe/Heydinger	60 min

4.	Identify topics of future discussion	All	15 min
5.	Action items and next meeting	Scribe	5 min

Action Items

1. A good description of the water right application filing process would be helpful to prevent confusion over responsibilities for A025517.
2. Sites team needs to review if impoundment of Stone Corral and Funks creeks could affect times when excess conditions would be in effect and/or effect ability to divert this water to storage.
3. Sites to check on A025517 priority over any CVP or SWP water, appears that we are junior based on application numbering but need to confirm. Intent is that Sites operates junior to SWP/CVP.

Notes

General overview of Sites water right process

- Sites project approach for water rights:
  - Seeking assignment of previous ~~DWR filing~~State filed application A025517 (Colusa Reservoir Complex 1977)
  - Release from priority A025514 and A025513 (Glenn Reservoir Complex)
  - Submitting application Dec 2021
  - Looking to have water right in 2023
  - Limiting diversion to time when river is not fully appropriated, and delta is in excess conditions
- AI: Sites to check on priority over any CVP or SWP, appears Sites is junior but need to confirm
- ~~Does DWR have to do anything to allow Sites to use~~What is DWR's role in petitioning for assignment of A025517?
  - DWR ~~does not have to take further action even though DWR~~ filed the 1977 applications consistent with the then applicable rules governing state filed applications
  - ~~No j~~Jurisdiction ~~or authority~~ over ~~the~~ assignment and use of those proposed rights resides with SWRCB
  - State filed applications designed~~Filed~~ to "preserve water supplies for benefit for people of state"~~, but the SWRCB has the authority to assign that right~~.
  - AI: A good description of the water right application filing process would be helpful to prevent confusion over responsibilities for A025517.

Review of the Annex document

- General overview of the Site's planned water right application
  - Points of diversion
  - Points of rediversion
  - Place of use
  - Diversion criteria
  - Etc.
- Funks and Stone Corral Creeks
  - Will be impounded and Sites is still working to determine water rights associated with them but intends to file for storage for them.
  - Would water need to be passed through the dams if delta is not in excess conditions?
  - Investigate any potential downstream water rights holders
  - AI: Sites team need to review if impoundment of these creeks could affect times when excess conditions would be in effect?

    - Need to be identified in the application as a water source and that they would not be subject to excess conditions that are being placed on the river diversion criteria
        - Include a discussion of the hydraulic connectivity of the creeks and the Sacramento river
- Oroville water would not be Sites water; it is SWP water under SWP rights. ~~and would not need~~No change in point of rediversion ~~due to that~~would be required to divert water Oroville water at currently authorized points of diversion. ~~It~~ Coordinated use of Oroville releases would be an exchange, not a diversion~~t~~ to storage.
- Use of DWR facilities ~~still needs~~requires an agreement with DWR ~~for activities that have been permitted the State Board~~
- ~~Is there anyway that~~Theoretical potential for rediversion of SWP water ~~could be put in~~into Sites?
    - No~~t likely~~ method currently available, but the future is uncertain, so we are specifically identifying that the Sites project is not requesting modifications to SWP water rights.
- Groundwater storage of Sites water does not require modification of current applications.~~(and avoiding undesirable effects as a use) would be~~ Currently listed purposes of use ~~covered under proposed purpose of use as it is the use of the water after the water was stored in groundwater that the State Board is interested in~~include uses to which water will be placed when extracted from groundwater storage.
- New electronic water right filing system is in place
    - Challenging system to use and still in development
    - Sites was able to get a .pdf version of the application for internal use but the Board Staff will not accept paper copies

Additional topics for future discussion

- ~~DWR will be filing 1707 for pulse flows but no other planned actions that could conflict with Sites application and filing.~~
- As Sites water will be non-project water it should be identified as such for COA accounting.
    - Sites would prefer to have full agreements/terms/conditions with potential protestors (DWR, BOR, CCWD…) before the application goes in.
- General consensus that we have covered the main components in the Annex and that additional meetings between Sites and DWR are not currently needed. This can be revisited as needed.

From: Tim Johnson [tjohnson@calrice.org]
Sent: 5/18/2021 3:19:33 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]
Subject: Re: Sites Reservoir Project - Questions on Rice Water Temperature and Mercury/Arsenic Concerns
Attachments: Water and airetemperature impacts on rice Sharifi et al 2018.pdf

Here is the article on water temperatures for rice. Your best contact for rice agronomics is Dr Bruce Linquist balinquist@ucdavis.edu

Thanks
Tim

On May 17, 2021, at 3:06 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Thank you Tim and Paul for being so flexible. I just sent a MS Teams invite for tomorrow at 3 PM.

We look forward to the discussion.

Ali

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

From: Tim Johnson <tjohnson@calrice.org>
Sent: Friday, May 14, 2021 3:48 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Spranza, John <john.spranza@hdrinc.com>; Paul Buttner <pbuttner@calrice.org>
Subject: Re: Sites Reservoir Project - Questions on Rice Water Temperature and Mercury/Arsenic Concerns

Paul Buttner and I can make Tuesday 3PM.

Thank you
Tim

On May 14, 2021, at 1:15 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Okay. I spoke too soon. Turns out we were scheduling a meeting with the State Board also and it just so happened to be at the exact same time. Apologies.

Could we move to later on Tuesday? We are available anytime after 2:30 PM on Tuesday. Or Friday after 11 AM.

Ali

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

From: Tim Johnson <tjohnson@calrice.org>
Sent: Thursday, May 13, 2021 4:48 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Cc: Spranza, John <john.spranza@hdrinc.com>
Subject: Re: Sites Reservoir Project - Questions on Rice Water Temperature and Mercury/Arsenic Concerns

How about Tuesday 11 AM?

Thanks
Tim

On May 13, 2021, at 12:59 PM, Alicia Forsythe <aforsythe@sitesproject.org> wrote:

Hi Tim – I am leading the environmental planning effort for the Sites Reservoir Project. We're in the midst of preparing our Revised Draft EIR/Supplemental Draft EIS. We've also have been having meetings with environmental NGOs on the Project and Project effects.

Through our analysis efforts and some concerns that have been raised in our NGO meetings, we wanted to schedule some time with you or the appropriate person in your team. We have the following topics we would like to discuss:

1. Optimal water temperatures for rice throughout the year. This comes into play in releases from Sites back into the TC Canal and the GCID Main Canal.
2. Rice and mercury effects.
3. Rice and arsenic effects.

John and I are generally available next Tuesday afternoon (5/18) and anytime next Friday (5/21). Is there a time next week that would work for you on either of these days for a Microsoft Teams discussion?

Ali

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

Paddy and Water Environment
https://doi.org/10.1007/s10333-018-0640-4

ARTICLE

Water and air temperature impacts on rice (*Oryza sativa*) phenology

Hussain Sharifi[1] · Robert J. Hijmans[2] · James E. Hill[1] · Bruce A. Linquist[1]

Received: 13 November 2017 / Revised: 22 February 2018 / Accepted: 8 March 2018

Abstract
Air temperature (T_a) is commonly used for modeling rice phenology. However, since the growing point of rice is under water during the vegetative and the early part of the reproductive period, water temperature (T_w) is likely to have a greater influence on crop developmental rates than T_a during this period. To test this hypothesis, we monitored T_w, T_a, and crop phenology in three commercial irrigated rice fields in California, USA. Sampling locations were set up on along a transect from the water inlet into the field. (Water warms up as it moves into the field.) T_a averaged 22.7 °C across sampling locations within each field, but average seasonal T_w increased from 22 °C near the inlet to 23.4 °C furthest away from the inlet. Relative to T_w furthest from the inlet, low T_w near the inlet delayed time to panicle initiation (PI 5 days) and heading (HD 8 days) and the appearance of one yellow hull on the main stem panicle (R7 9 days). Using T_w instead of T_a when the active growing point is under water until booting (midway between PI and HD) in a thermal time model improved accuracy (root-mean-square error, RMSE) for predicting time to PI by 2.5 days and HD by 1.6 days and R7 by 1.8 days. This model was further validated under more typical field conditions (i.e., not close to cold water inlets) in six locations in California. Under these conditions, average T_w was 2.6 °C higher than T_a between planting and booting, primarily due to higher daily maximum T_w values. Using T_w in the model until booting improved RMSE by 1.2 days in predicting time to HD. Using T_w instead of T_a during this period could improve the accuracy of rice phenology models.

Keywords Rice · Water temperature · Developmental rate · Phenology · Crop models

Introduction

Temperature is the primary environmental factor affecting crop development (Gao et al. 1992; Yin et al. 1996), although some crops (or varieties) are also sensitive to photoperiod (Yin et al. 1997; Yin and Kropff 1998). Rice is typically grown under flooded field conditions, and water temperature (T_w) has been shown to affect plant developmental rate (Roel et al. 2005; Shimono et al. 2007a), leaf photosynthesis (Shimono et al. 2004; Kuwagata et al. 2008), growth rate (Shimono et al. 2002), spikelet sterility (Satake et al. 1988; Shimono et al. 2007b), and yield (Roel et al. 2005). In terms of developmental rate, since the shoot apex (where different organs are formed) is located under water during much of the growing season, initial development is likely to be more affected by water temperature (T_w) than by air temperature (T_a) (Satake et al. 1988; Confalonieri et al. 2005). After the panicle has differentiated at the base of the shoot, its position rises due to internode elongation, and roughly midway between panicle initiation and heading (i.e., booting stage), the panicle rises above the water surface at which point the growing point is more influenced by T_a rather than T_w (Shimono et al. 2005).

The difference between T_w and T_a can be particularly pronounced in temperate climates, where T_w is generally higher than T_a before canopy closure due to heating from incident solar radiation (Shimono et al. 2002, 2005). In northern Japan, Tanaka (1962) reported that early season minimum T_w was 5 °C higher than minimum T_a and that maximum T_w was 10 °C higher than maximum T_a. The difference between T_w and T_a is less after canopy closure when most of the solar radiation is intercepted by the leaves. Sameshima (2004) studied the developmental stages of rice grown in the field over several years in northern Japan and showed that the variation in the

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developmental stages among years could not be explained well with T_a, and suggested that this might be due to the difference in solar radiation among years affecting the relationship between T_w and T_a.

Phenology models are important components of crop growth models (Zhang and Tao 2013; Espe et al. 2016a) that have been widely used for evaluating crop responses to climate change (Mall and Aggarwal 2002; Yao et al. 2007; Wang et al. 2014), ecosystem productivity (White et al. 2009), yield gaps (van Ittersum et al. 2013; van Wart et al. 2013; Espe et al. 2016b), field management options (Awan et al. 2014), and to estimate the benefit of technological change (Hijmans et al. 2003). In phenology models, the rate of crop development for photoperiod insensitive varieties is typically modeled as a response to thermal time accumulation (Gao et al. 1987; Sharifi et al. 2017). Common rice models such as Oryza2000 (Bouman and van Laar 2006) and CERES-Rice (Alocilja and Ritchie 1991; Jones et al. 2003) use T_a to compute thermal time accumulation. Given the importance of T_w, it has been proposed to use it as an environmental variable in rice phenology models (Confalonieri et al. 2005; Shimono et al. 2007a), but this is not a common practice.

Our objective was to evaluate the use of T_w and T_a on prediction accuracy of a rice phenology model. We hypothesized that since the growing point of rice is under water for the vegetative and the early part of the reproductive period, water temperature (T_w) will have a greater influence on crop developmental rates than T_a during this period. This hypothesis was tested using field data from nine locations and a rice phenology model.

Materials and methods

Field experiments

Two sets of field trials were used to evaluate the effect of T_a and T_w on rice phenology. The first was a cold water gradient study conducted in 2014 to directly analyze the effect of T_a and T_w on crop development and develop a model to account for the effects of both T_a and T_w. The second set of field trials was part of the University of California Cooperative Extension (UCCE) variety trials conducted in six locations, where T_a, T_w, and 50% heading date were recorded. Data from this trial were used to validate the model developed from the cold water gradient study. The variety M-206 was used in all studies. M-206 is not photoperiod sensitive and is a medium grain temperate *japonica* variety that is planted in approximately 50% of California rice fields (Espe et al. 2016a).

Cold water gradient study

A cold water gradient study was conducted in three fields in Butte County, California, in 2014. In many fields in this county, the T_w of the irrigation water at the field inlet is relatively low (Roel et al. 2005), between 2 and 3 °C (Table 1), and the water warms up as it moves into the field due to solar radiation; thus, the cold water area is typically restricted to a few ha near the inlet. This condition allows for an analysis of the effects of T_w on crop phenology under conditions where everything else (i.e., T_a, crop management) is the same. In each field, we identified five sampling locations (L1–L5) along a transect moving away from the inlet (L1 being near the inlet and having the lowest T_w and L5 being furthest from inlet and having the highest T_w). The distance between these locations varied between fields but averaged about 20 m. Throughout the season, T_w was measured in all locations, while T_a was measured only in L1 and L5 locations. HOBO 2x External Temperature data loggers (Onset; http://www.onsetcomp.com/products/data-loggers/u23-003) were set up before the fields were flooded and recorded the temperature every hour. The T_w sensors were placed 3 cm above the soil surface and the T_a sensors 120 cm above the soil surface and were enclosed in a HOBO Solar Radiation Shield Mounting-RS3 (Onset; http://www.onsetcomp.com/products/mounting/rs3). The fields were all water seeded as is typical for California, in which the field is first flooded and then seeded by airplane. The fields remained flooded throughout the season until about 3 weeks before harvest when the fields were drained in preparation for harvest. In order to maintain the floodwater height in the field, water continually flowed into the field except for brief periods when the floodwater in the field needed to be lowered for some reason (e.g., herbicide applications).

In all fields and locations, the rice growth staging system described by Counce et al. (2000) was used to identify three developmental stages: panicle initiation (PI or R0), 50% heading (HD or R3), and the appearance of one yellow hull on the main stem panicle (R7). Crop growth stage data were collected every 2 days during the periods of interest. PI was defined as when a dark green circle (i.e., "*green ring*") formed below the last initiated leaves of the culm and initiated panicle. HD was defined as the time when 50% of the panicles were fully exerted, which occurs 1–3 days before flowering (R4) in rice (De Datta 1981; Counce et al. 2015). Counce et al. (2000) indicated that physiological maturity occurs between R7 and R8 (when one brown hull appears on the main stem panicle); however, for this study, we measured R7 (based on our observation R7 is about 2 weeks before physiological maturity) as a proxy for physiological maturity because it was more objectively identifiable than R8. The booting stage, which occurs between PI and HD, is also important for this study as that is the stage in which the

Table 1 Mean air (T_a) and water (T_w) temperatures for the three fields and locations in the 2014 cold water gradient study

Field	Location	Planting	T_a			T_w			Days to reach		
			PL-PI (°C)	PI-HD (°C)	HD-R7 (°C)	PL-PI (°C)	PI-HD (°C)	HD-R7 (°C)	PI (days)	HD (days)	R7[a] (days)
Cold water 1	L1	7 May	23.0	24.5	23.8	22.1	22.9	22.1	56	90	110
	L2		–	–	–	22.4	23.0	22.2	54	87	108
	L3		–	–	–	22.8	23.0	22.5	54	85	106
	L4		–	–	–	23.3	23.0	22.3	51	83	103
	L5		22.7	24.2	23.7	23.7	23.2	22.4	51	80	101
Cold water 2	L1	4 May	22.8	24.9	23.5	22.4	22.7	21.9	59	88	109
	L2		–	–	–	23.0	23.1	21.8	57	86	109
	L3		–	–	–	23.2	24.0	22.0	56	83	105
	L4		–	–	–	23.4	24.4	22.0	54	81	102
	L5		22.5	24.5	23.6	24.4	24.4	22.2	54	81	99
Cold water 3	L1	8 May	22.8	24.1	23.3	21.1	22.1	21.5	57	95	111
	L2		–	–	–	21.7	22.2	21.7	56	95	111
	L3		–	–	–	22.2	22.5	20.7	56	88	108
	L4		–	–	–	22.3	22.5	20.7	53	86	105
	L5		22.5	24.5	23.2	22.9	22.5	21.0	51	84	103

T_a was only measured for L1 and L5 locations. Temperature data are averaged across different growth stages: planting (PL), panicle initiation (PI), 50% heading (HD), and R7

[a]R7 is the growth stage marked by the appearance of one yellow hull on the main stem panicle. We used it as a proxy for physiological maturity; however, true physiological maturity occurs between R7 and R8

panicle which is sensitive to ambient temperature moves upward through the main stem and changes from being below to above the water line (Confalonieri et al. 2005).

Model development and simulations

Phenology model

The DD10 phenology model (Counce et al. 2015) calibrated by Sharifi et al. (2017) for California rice systems (hereafter DDCA) was used for phenology simulations. In DDCA, the developmental rate is modeled as a function of thermal time accumulation. A given amount of thermal time (°Cd) is required to reach a given developmental stage. The thermal time accumulated in each time step (in this case, $t = 1$ day) is calculated as follows:

$$\mathrm{TT}_t = \max(0, [0.5(T_{\max} + T_{\min}) - T_b]) \quad (1)$$

$$T_{\min} = T_l \quad \text{if} \quad T_{\min} > T_l$$

$$T_{\max} = T_{opt} \quad \text{if} \quad T_{\max} > T_{\mathrm{opt}}$$

where TT is the thermal time at time t, $T_{\max}$ is the daily maximum temperature, $T_{\min}$ is the daily minimum temperature, T_b is the base temperature, T_l is the lower threshold, and T_{opt} is the optimum threshold. Thus, there is no development if the daily average temperature is below T_b, and there is no increase in the development for daily maximum temperatures above T_{opt} or for daily minimum temperatures above T_l.

Model temperature parameters: T_a versus T_w

Sharifi et al. (2017) calibrated and validated the DDCA for M-206 using T_a. The "cardinal temperatures" are $T_b = 11.7$ °C, $T_l = 13.1$ °C, and $T_{\mathrm{opt}} = 29.9$ °C, and a thermal time threshold of 454 °Cd is required to reach PI, 178 °Cd for PI to booting, 356 °Cd for PI to HD, and 203 °Cd for HD to R7. For the purposes of this model, we assumed the critical booting period (where the emerging panicle moves from below to above the water surface) occurred midway between PI and HD, that is 178 °Cd after PI.

Model simulations

Cold water gradient study

The effect of using T_w, T_a, or a combination of both on model performance was assessed using three modeling approaches (TA, TW, and TWA) and data from the cold water gradient study. In the TA model runs, thermal time was calculated using only T_a. This was the control treatment in our study as T_a is typically used in phenology models. We used the averaged T_a of L1 and L5 from each field as they did not differ, which was expected given that all locations in a field were within 100 m of each other. In the TW approach, T_w was used. For the TWA runs, the model was set to use T_w until booting stage (i.e., when the growing point is under water), 178 °Cd after PI, and T_a after that.

The prediction accuracy of each model was evaluated for the time to PI, HD, and R7 using the root-mean-square error (RMSE), which was calculated as:

$$\mathrm{RMSE} = \left[n^{-1} \sum (P - O)^2\right]^{0.5} \quad (2)$$

where n is the number of observations, P is the predicted duration (days), and O is the observed duration (days).

Validation field trials

The models developed using cold water gradient data (TA, TW, and TWA) were validated using data collected from separate field trials conducted under typical field conditions in 2015. Data were collected from the University of California Cooperative Extension (UCCE) variety field trials which were set up in six counties in the Sacramento Valley. Trials were set up as a randomized complete block design with four replicates. All varieties (we used only M-206) in these trials were water seeded with individual varieties being hand broadcast into defined plots (3 × 6 m). Planting dates were between April 27 and May 11. All fields were managed according to commercial practices. T_a and T_w were collected using the same instrumentation as described above for the cold water gradient fields; however, the only phenological data collected from these studies were HD. For the model runs, booting was set to 178 °Cd after PI, similar to cold water gradient study.

Results

Cold water gradient study

Temperature gradients and crop phenology

Across fields, the T_a of locations L1 and L5 was 22.9 and 22.6 °C, respectively (Table 1). Among fields, there was a little difference in mean T_a, while T_w was lowest in Field 3 and highest in Field 2. In all fields, T_w increased from L1 to L5 following the direction of the water moving into the field from the inlet (as expected). On average across fields, the L5 mean T_w was 1.8 °C higher than L1 between PL and PI and 0.8 °C from PI to HD. However, after HD T_w was similar for all locations (< 0.1 °C difference). Reflecting changes in T_w, the time to PI, HD, and R7 was delayed moving from L5 toward L1. Delay in development occurred primarily between PL and HD (Table 1).

Averaged across fields and relative to L5, PI was delayed by 5.6 days for L1, 4.6 days for L2, 2 days for L3, and 1.6 days for L4. Similarly, HD was delayed by 9 days for L1, 7.6 days for L2, 5.6 days for L3, and 1.6 days for L4. The delay in R7 was similar to the delay in HD.

Maximum and minimum T_w

Comparing the two extreme locations (L1 vs. L5) in all fields indicates that it was the maximum water temperature that led to higher mean T_w in the warmer T5 location (Fig. 1). Daily minimum T_w was similar for L1 and L5 throughout the season. However, before booting stage, the maximum T_w at L1 was, on average, 4 °C below the maximum T_w at L5. From booting to R7, there was a little difference in T_w between locations.

Thermal time accumulation

Using T_w to calculate thermal time led to an increased accumulation along the temperature gradient mainly during PL to PI with a little difference after PI (Fig. 2). Averaged across fields, the daily thermal time accumulation rate was 7.9 °Cd^{-1} at L1 and 9.6 °Cd^{-1} at L5 during PL to PI (Fig. 3). When thermal time accumulation at L5 reached 499 °Cd (PI), thermal time accumulation was 106 °Cd lower at L1, 71 °Cd at L2, 42 °Cd at L3, and 22 °Cd at L4 (Fig. 3). After PI, thermal time accumulation rates were similar for all locations.

T_w and T_a in phenology models

In all cold water gradient fields, TWA had the highest prediction accuracy (lower RMSE) (Table 2). Averaged across fields, the TA (control) RMSE was 5.9 days for PI, 5.2 days

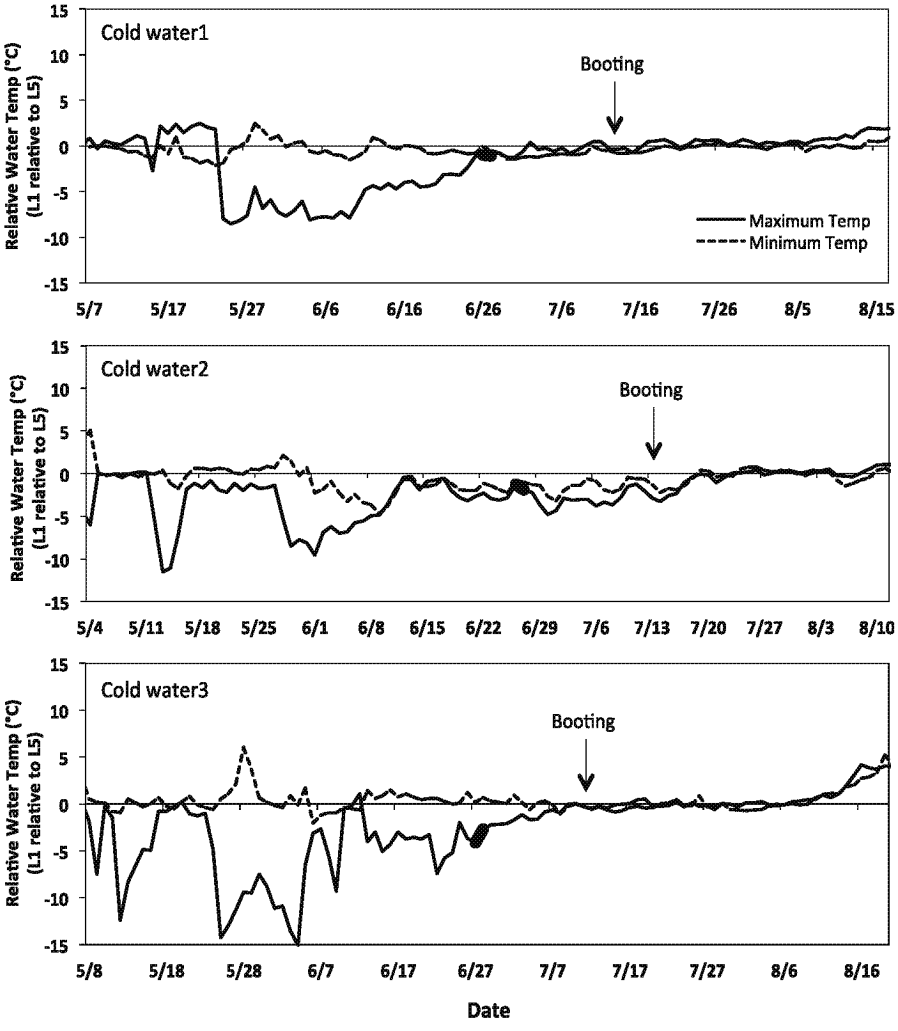

Fig. 1 Maximum and minimum water temperature (T_w) for the L1 and L5 locations in the cold water study. For each field, maximum and minimum T_w for the L1 (coldest) location is shown relative to the L5 (warmest). For example, when the solid line is −5 °C below the flat horizontal line, the maximum temperature at that time for the L1 location was 5 °C cooler than the L5 location. The filled circle marks the time of panicle initiation stage, and down arrow indicates when booting occurred at L1 location

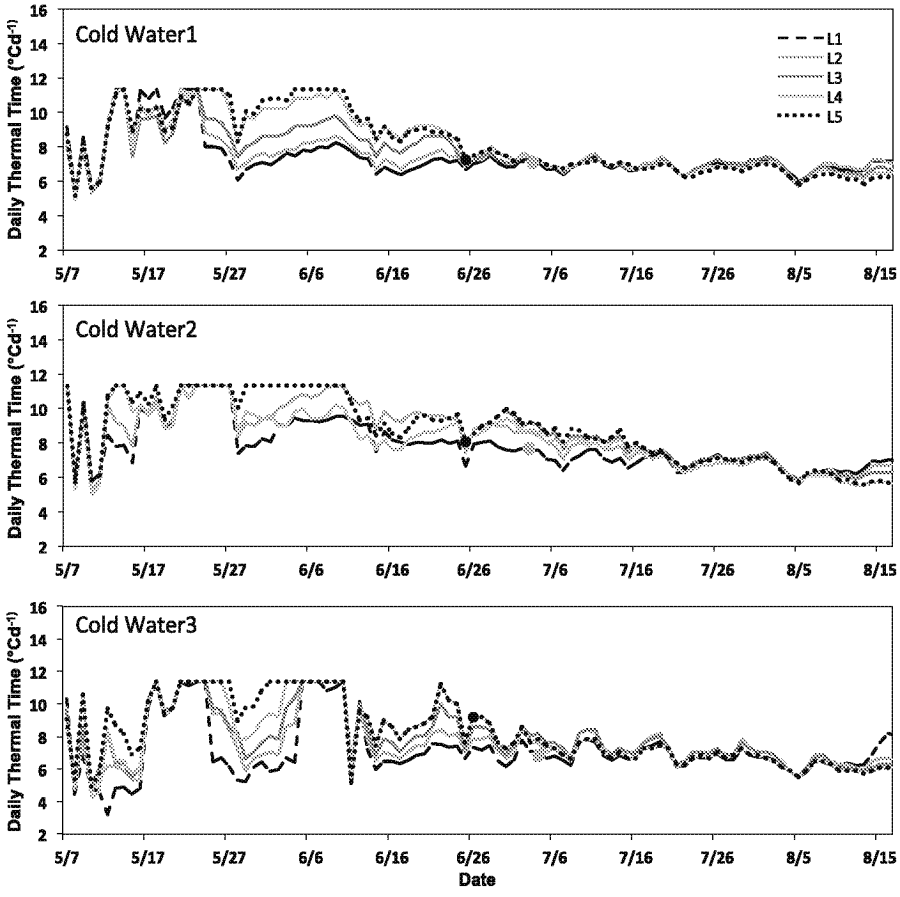

Fig. 2 Water temperature (T_w). Daily thermal time $°Cd^{-1}$ accumulation (Eq. 1) for all locations (L1–L5) in the cold water gradient study. The black filled circle marks the time of panicle initiation stage at L5 and gray for L1

for HD, and 5.4 days for the R7 stage. For the TW, the RMSE was improved by 2.5 days as compared to TA model for estimating PI; however, RMSE increased by 9.5 days for HD and 22.4 days for R7 stage. The TWA and TW model results were similar for estimating PI as both models used T_w. Relative to the TA, the TWA model improved RMSE by 1.6 days for HD and by 1.8 days for R7.

Field validation studies

In the 2015 field validation studies, planting dates ranged from April 27 to May 11 and time to heading from 78 to 87 days (Table 3). There was a little difference among locations in mean T_w and T_a across stages.

Across fields, the average T_w was 2.6 °C higher from PL to booting than T_a; however, after booting, it was 1.6 °C lower than T_a (Table 3). Minimum T_w was higher than minimum T_a by 4–5 °C, and this difference remained relatively constant across the season. In contrast, maximum T_w was higher than maximum T_a by 1.8 °C from PL to booting, but after booting the maximum T_w was 8 °C lower than T_a (Table 3).

The changing relationship between T_w and T_a is shown more clearly in Figs. 4 and 5. Across the season, the difference between average T_w and T_a gradually decreased between PL and booting, while between booting and R7 it increased, with T_w being lower than T_a (Fig. 4). Looking at the cause of this change by examining maximum and minimum temperatures indicates that it is the change in maximum temperatures that is responsible. For the first 20 days of the season maximum T_w averaged about 6 °C greater than maximum T_a, after which T_w in relationship to T_a declined and by the end of the season averaged about 10 °C less than T_a (Fig. 5).

Using these data and running the models to simulate time to HD, we found that using TWA increased predication accuracy by 1.4 days compared to TA. RMSE for TW decreased accuracy with 7.4 days as compared to TA (Table 4).

Discussion

Despite many studies evaluating the effect of T_w on rice growth and yield (Shimono et al. 2002; Roel et al. 2005), little attention has been given to its effect on phenological

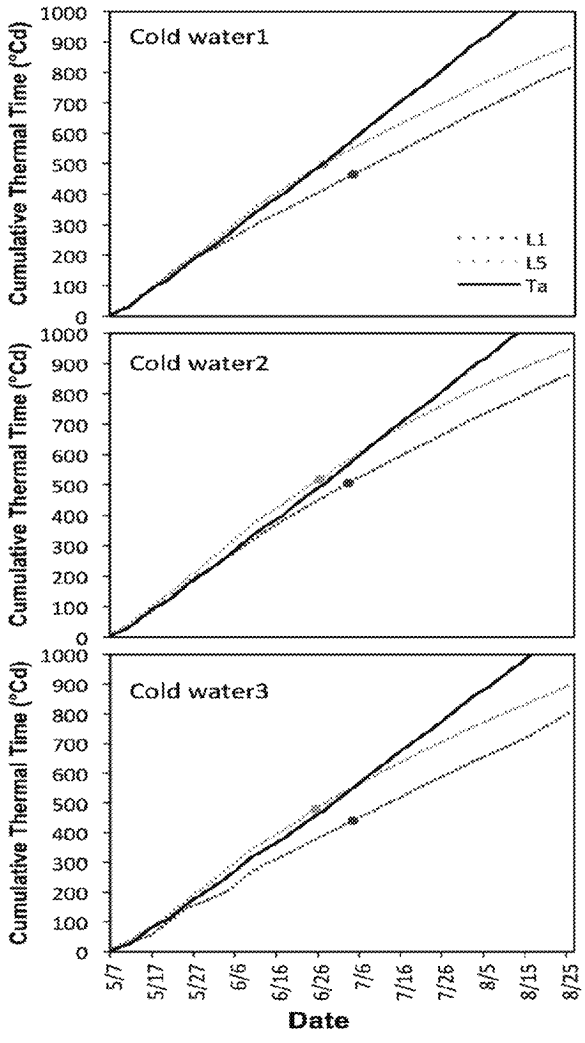

Fig. 3 Cumulative thermal time °Cd based on water temperature (T_w) for L1 and L5 locations in each cold water gradient study field. T_a shows the cumulative thermal time °Cd based on air temperature in each field. The filled circle marks the time of panicle initiation in L1 and L5 locations

development. The cold water gradient study supported our hypothesis and showed that T_w had a greater influence on phenological development than T_a from planting to booting, while after booting, crop development was primarily influenced by T_a. This was illustrated by more rapid crop development in warm water field locations as opposed to cold water locations while T_a being the same (Table 1). The physiological reason for this is likely that the shoot apex, which is the most sensitive to changes in ambient temperature, is located under the water until booting and thus affected by T_w, not T_a (Tanaka 1962; Shimono et al. 2005; Confalonieri et al. 2005).

Table 2 Model simulation results for cold water gradient study showing prediction accuracy (RMSE) to panicle initiation (PI), heading (HD), and R7

Field	*n*	Model	RMSE_PI (days)	RMSE_ HD (days)	RMSE_ R7[a] (days)
Cold water 1	5	TA	5.1	7.2	5.6
	5	TW	3.2	15.3	28.3
	5	TWA	3.2	2.5	4.0
Cold water 2	5	TA	5.5	5.4	5.7
	5	TW	2.8	19.5	31.8
	5	TWA	2.8	5.4	3.7
Cold water 3	5	TA	7.3	2.9	5.0
	5	TW	4.1	11.3	23.2
	5	TWA	4.1	2.8	2.8
Mean cold water		TA	5.9	5.2	5.4
		TW	3.4	15.4	27.8
		TWA	3.4	3.6	3.5

TA used T_a and TW used T_w for the entire season; however, TWA used T_w until booting and T_a from booting to R7

[a]R7 is marked by the appearance of one yellow hull on the main stem panicle and was used as a proxy for physiological maturity; however, true physiological maturity occurs between R7 and R8

Shimono et al. (2002) suggested that under field conditions, T_w differed from T_a, and these differences were magnified in temperate climates. Our results from the six validation field studies, which represent typical California rice fields, show a consistent difference among fields between T_w and T_a; however, this difference changes during the season. Specifically, the average T_w during the first 60–70 days after planting was higher than average T_a, after which T_a was higher than T_w (Fig. 5). The main source of the seasonal variation between T_w and T_a was maximum temperature, not minimum temperature. The minimum T_w was about 4–5 °C higher than T_a throughout the season. For example, during the first 20 days of the season maximum T_w was about 6 °C higher than maximum T_a, after which T_w, relative to T_a, and by the end of the season T_w was about 10 °C lower than T_a. At approximately 40 days after planting maximum T_w was similar to maximum T_a. This reduction in maximum temperature difference between T_w and T_a was likely due to an increased leaf area and radiation captured by the canopy. During the first 2–3 weeks after planting, plants were small and there was little shading of the water by the rice plants; however, plant growth increases rapidly after about 3 weeks (start of tillering) (Shimono et al. 2007a) with complete canopy closure typically occurring between 40 and 50 days after planting, after which maximum T_w fell below maximum T_a (Fig. 5a, b).

Data from the cold water gradient study indicated that when T_w was used until booting and T_a after that, TWA model runs resulted in the highest prediction accuracy across

Table 3 2015 validation field trials showing planting dates, observed days to 50% heading (HD), and average (Tavg), minimum (Tmin), and maximum (Tmax) air (T_a) and water (T_w) temperature during planting to booting (PL-booting) and booting to R7 (booting-R7)

Field	Planting	T_a			T_w			T_a			T_w			Days to HD
		PL-booting			PL-booting[a]			Booting-R7			Booting-R7			
		Tavg (°C)	Tmin (°C)	Tmax (°C)	Tavg (°C)	Tmin (°C)	Tmax (°C)	Tavg (°C)	Tmin (°C)	Tmax (°C)	Tavg (°C)	Tmin (°C)	Tmax (°C)	
Butte	11 May	21.8	15.2	28.3	24.9	19.8	29.9	24.2	17.2	31.3	22.8	22.1	23.5	83
Colusa	27 Apr	23.0	16.0	29.1	25.7	20.6	30.8	23.2	15.7	30.8	21.8	21.0	22.6	78
Glenn	9 May	23.1	16.3	28.9	25.6	21.0	30.2	22.9	15.9	30.0	21.2	20.3	22.1	83
Sutter	8 May	22.3	15.5	29.1	24.8	17.9	31.8	23.0	15.4	30.5	22.3	21.0	23.5	79
Yolo	8 May	22.6	15.2	29.3	25.6	19.3	31.8	23.2	15.3	31.1	21.8	21.0	22.5	87
Yuba	5 May	23.4	16.6	29.2	25.1	20.9	30.3	23.7	15.7	31.8	20.8	20.2	22.5	81
	Mean	22.7	15.8	29.0	25.3	19.9	30.8	23.4	15.9	30.9	21.8	20.9	22.8	82

[a]For the purposes of this model, we assumed the critical booting period (where the emerging panicle moves from below to above the water surface) occurred midway between PI and HD, that is 178 °Cd after PI

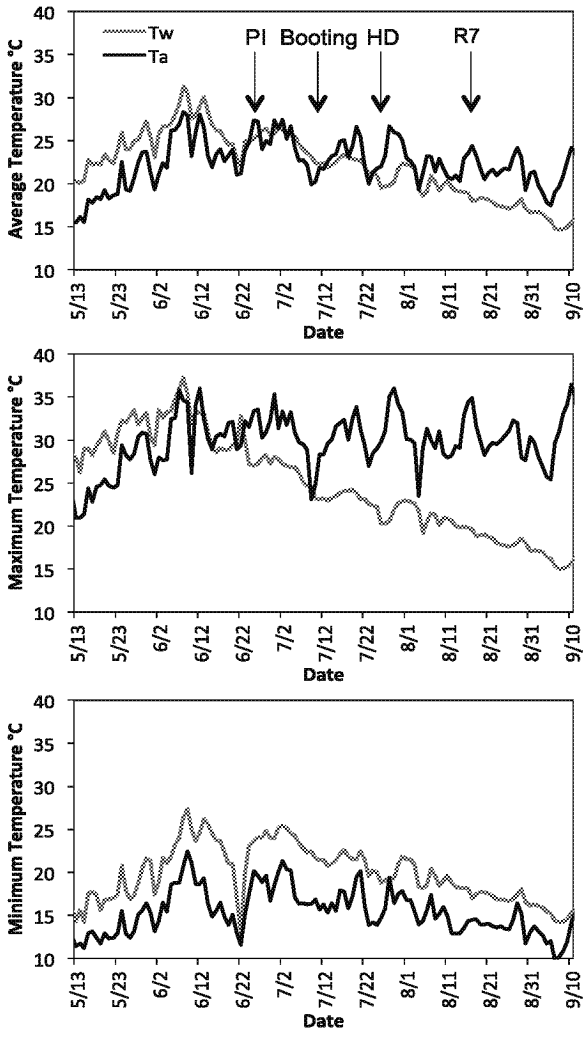

Fig. 4 Average, maximum and minimum water (T_w) and air (T_a) temperatures during 2015 growing season for Glenn field (Table 3). The down arrow indicates the time to panicle initiation (PI), booting, heading (HD), and R7. Booting stage is half-way between PI and HD. The time to PI and R7 was predicted using DDCA calibrated by Sharifi et al. (2017)

all stages compared to either using T_a or T_w for the entire season (Table 2). These results were confirmed in field trails under more typical growing conditions (Table 4). Overall, RMSE for prediction of various stages ranged from 2.5 to 5.4 days using TWA compared to 2.9 to 7.3 days using TA. This represents an improvement in prediction accuracy of roughly 2 days when using both T_w and T_a compared to the standard approach of only using T_a. The temperature parameters used in these models were all calibrated and validated using T_a (Sharifi et al. 2017). Calibrating the models using T_w data would likely further improve the accuracy of these models. The data set we had available was too small to do

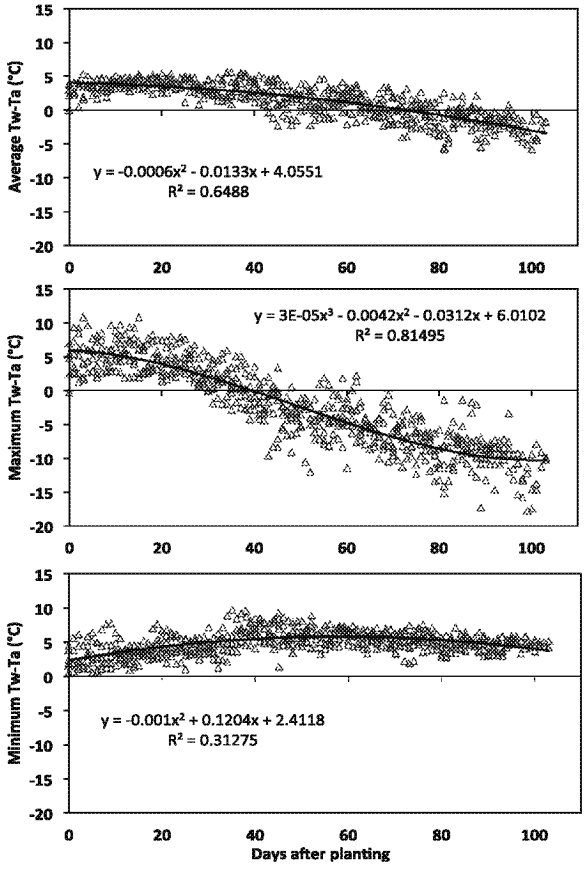

Fig. 5 Water temperature (T_w) relative to air temperature (T_a) for all fields in 2015 validation field trials. Shown are average, maximum, and minimum temperatures

Table 4 Model simulation results for 2015 validation field trials showing prediction accuracy (RMSE) for time from planting to heading (HD)

Field	*n*	Model	RMSE_HD (days)
Validation field trial	6	TA	5.1
	6	TW	12.5
	6	TWA	3.7

TA used T_a and TW used T_w for the entire season; however, TWA used T_w until booting and T_a from booting onward. Data used in the models are summarized in Table 3

this properly; however, this would be a useful area of study in the future.

One problem with the implementation of T_w in rice phenology models is that it is not collected in standard meteorological stations (Shimono et al. 2005). Even if it were, the T_w in rice fields would still need to be estimated through simulation, as T_w is affected by the temperature of the incoming water, water height, and field management. However, models have been developed to estimate T_w based on T_a and other factors such as leaf area, wind speed, and solar radiation (Confalonieri et al. 2005; Ohta and Kimura 2007; Kuwagata et al. 2008). Incorporating T_w estimates from these sorts of models into crop development models may help improve accuracy (Shimono et al. 2005).

Our findings may be of more importance in temperate rice regions than in tropical. While in both regions maximum T_w may be higher than maximum T_a early in the season, in tropical regions it may not have much effect on developmental rates because both maximum T_w and T_a may be higher than T_{opt} and thus would not lead to higher developmental rates. In temperate regions, rice planting typically occurs during a relatively cool time of year with temperatures rising throughout the season. For example, in California rice is typically planted in early May. Average maximum T_a during May is 27.6 °C (CIMIS-Colusa). During May 2015, average maximum T_a was 28.7 °C at our field locations, while the maximum T_w was 30.6 °C. Given that the optimized value for T_{opt} was 32.9 °C (Eq. 1), more thermal time is accumulated using T_w than T_a, which leads to faster developmental rates.

Conclusion

In this study, we found that both T_w and T_a influence rice development but at different times during crop growth. During the first part of the season, when the growing apex is under water, T_w determines developmental rates, while later in the season, it is T_a. Incorporating both T_w and T_a into a rice phenology model increased its accuracy. We found that it was the difference in maximum temperature between T_w and T_a that affected thermal time accumulation and consequently developmental rates. Developing models to better predict T_w in rice fields and using T_w in crop growth models will improve model accuracy.

Acknowledgements The research was funded in part by California Rice Research Board. We would like to thank the Agroecosystems Laboratory at the University of California Davis and in particular Cesar Abrenilla. We also acknowledge the California Cooperative Rice Research Foundation Incorporated's Rice Experiment Station, for their support during this study.

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Sent: 5/18/2021 4:19:57 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Berryman, Ellen [Ellen.Berryman@icf.com]; Briard, Monique [Monique.Briard@icf.com]; Spranza, John [john.spranza@hdrinc.com]; Howe, John [John.Howe@icf.com]; Haire, Jennifer [Jennifer.Haire@icf.com]; Webber, Lisa [lisa.webber@icf.com]
CC: Jerry Brown [jbrown@sitesproject.org]
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

I can make it but won't be in front of computer at 1pm. I can call in from car and be back at home around 130pm

Jelica Arsenijevic
Environmental Project Manager

Due to COVID-19, I will be working from home. Please contact me via cell # listed below. Be safe out there!

HDR
2379 Gateway Oaks Drive, Suite 200
Sacramento, CA 95833
D 916-679-8854
M 209-329-6897

Jelica.Arsenijevic@hdrinc.com

hdrinc.com/follow-us

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Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA
Importance: High

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Can folks make this? If not, I can see if we can push this back to 3 to 5 PM. But thought I would see if folks can make 1 to 3 PM this Friday.

Please let me know ASAP.

Ali

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Super helpful! Thanks Ellen!

Ali

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Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

Thanks much Monique!

On the KMZ's, I am flexible. Pick somewhere in the permitting folder that makes sense to you all and send me the link. I don't have any preference.

Really appreciate all the team's help on this!

Ali

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Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

Hi Ali,

John Howe is conducting field work through most of next week and has had minimal recent involvement on the project so I'm adding Jennifer and Lisa to this email/meeting invite and have asked both of them to fill out the doodle poll.

Your proposed agenda looks comprehensive re Funks Reservoir and will cover the methodology we are proposing for the BA, ITP requirements, and the analysis for all species in the EIR/S and not just listed species.

We will need to upload quite a few KMZs to cover your request. Is there a folder on SP that you'd like us to upload them too?

Jelica, would you coordinate with Ali on the files that are already on SP for the aquatic resources delineation?

Thanks,
Monique

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Friday, May 14, 2021 12:09 PM
To: Berryman, Ellen <Ellen.Berryman@icf.com>; Briard, Monique <Monique.Briard@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Howe, John <John.Howe@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: Sites - Briefing for Jeff Sutton, TCCA
Importance: High

Hi all – We'd like to brief Jeff Sutton on all things vegetation and species with regard to Funks Reservoir. I am thinking of the following agenda:

1. Land Cover Mapping Around Funks
2. Wetland Mapping Around Funks (Waters of US, Waters of State)
3. Species Mapping Around Funks
4. CEQA / NEPA Determinations for Funks Area
   a. Impacts
   b. Mitigation Measures
5. BA and ITP Requirements (Jeopardy vs. Fully Mitigate)
   a. Approach (Mapping, Assume Presence, Survey, Adjust)

b. Next Steps in Discussions with Reclamation and CDFW
6. Action Items and Next Steps

Can you provide your availability for this discussion with Jeff in the doodle poll below?

https://www.doodle.com/poll/idvqt6yvqnhnbi5h?utm_source=poll&utm_medium=link

Also, can you send me KMZ's for the land cover mapping around Funks, any species mapping around Funks, and for the wetland mapping? I could use an updated CRLF KMZ when you have it. I already have the Elderberry KMZ. I'd like to get a sense of what we're finding and start to think about Jeff concerns.

Ali

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EIR/EIS, BA, ITP Species Briefing for TCCA
Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 21, 2021	**Location:**	Maxwell and Microsoft Teams
Start Time:	1:30 p.m.	**Finish Time:**	3:30 p.m.
Purpose:	Focused discussion on EIR/EIS, BA, and ITP species approach for the Project around TCCA facilities.		

Meeting Participants:

Jeff Sutton, TCCA	Ellen Berryman, ICF	John Spranza, Sites Integration
Jerry Brown, Sites Authority	Jelica Arsenijevic, Sites Integration	Laurie Warner Herson, Sites Integration
Ali Forsythe, Sites Authority	Jennifer Haire, ICF	Lisa Webber, ICF
Kevin Spesert, Sites Authority		Monique Briard, ICF

Agenda:

Discussion Topic	Topic Leader
1. Introductions	Group
2. Land Cover Mapping Around Funks	Ali / Lisa
3. Wetland Mapping Around Funks (Waters of US, Waters of State)	Ali / Lisa / Jelica
4. Species Mapping Around Funks	Ali / ICF Team
5. CEQA / NEPA Vegetation and Wildlife Determinations for Funks Area a. Impacts b. Mitigation Measures	Ali / John / ICF Team
6. BA and ITP Requirements (Jeopardy vs. Fully Mitigate) a. Approach (Mapping, Assume Presence, Survey, Adjust) b. Next Steps in Discussions with Reclamation and CDFW	Ali / Ellen
7. Action Items and Next Steps	Group

From: Webber, Lisa [Lisa.Webber@icf.com]
Sent: 5/18/2021 6:42:46 PM
To: Haire, Jennifer [Jennifer.Haire@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Briard, Monique [Monique.Briard@icf.com]; Berryman, Ellen [Ellen.Berryman@icf.com]; Spranza, John [john.spranza@hdrinc.com]; Howe, John [John.Howe@icf.com]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

The time on May 20 work for me, too.

From: Haire, Jennifer <Jennifer.Haire@icf.com>
Sent: Tuesday, May 18, 2021 5:37 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Briard, Monique <Monique.Briard@icf.com>; Berryman, Ellen <Ellen.Berryman@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Howe, John <John.Howe@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Webber, Lisa <Lisa.Webber@icf.com>
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

I can make either of the times on May 20.

From: Alicia Forsythe <aforsythe@sitesproject.org>
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Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

Thank you, thank you, thank you!! I will confirm with Jeff and get an invite out.

I am sorry to say this, but we should have a prep call. Our last discussion with Jeff was a little rocky so I just want to make sure this one goes well. Would any of the following dates/times work for a prep call:

Wednesday, May 19 from 2:30 to 3:30 PM
Thursday, May 20 from 9 to 10 AM
Thursday, May 20 from noon to 1 PM

And I dropped Jerry off of our email trail to not clog his inbox.

Ali

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From: Briard, Monique <Monique.Briard@icf.com>
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To: Alicia Forsythe <aforsythe@sitesproject.org>; Berryman, Ellen <Ellen.Berryman@icf.com>; Spranza, John <john.spranza@hdrinc.com>; Howe, John <John.Howe@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>; Haire, Jennifer <Jennifer.Haire@icf.com>; Webber, Lisa <Lisa.Webber@icf.com>

Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

It looks like 1-3 works for my team – me, Ellen, Jennifer and Lisa. Are we looking for ICF to be prepared to share our screens with the KMZ files that you asked about in addition to answering technical questions?

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, May 18, 2021 4:18 PM
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Super helpful! Thanks Ellen!

Ali

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To: Berryman, Ellen <Ellen.Berryman@icf.com>; Briard, Monique <Monique.Briard@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Howe, John <John.Howe@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Cc: Jerry Brown <jbrown@sitesproject.org>
Subject: Sites - Briefing for Jeff Sutton, TCCA
Importance: High

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From: Berryman, Ellen [Ellen.Berryman@icf.com]
Sent: 5/19/2021 6:46:45 AM
To: Briard, Monique [Monique.Briard@icf.com]; Webber, Lisa [Lisa.Webber@icf.com]; Haire, Jennifer [Jennifer.Haire@icf.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]; Howe, John [John.Howe@icf.com]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: RE: Sites - Briefing for Jeff Sutton, TCCA

I can make 9 to 10 on May 20.
If Monique moves the 12:30 meeting on May 20, I can join at 12:30 but I'm tied up from 11:30 to 12:30.

From: Briard, Monique <Monique.Briard@icf.com>
Sent: Tuesday, May 18, 2021 6:44 PM
To: Webber, Lisa <Lisa.Webber@icf.com>; Haire, Jennifer <Jennifer.Haire@icf.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Berryman, Ellen <Ellen.Berryman@icf.com>; John Spranza <John.Spranza@hdrinc.com>; Howe, John <John.Howe@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
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I can move/cancel my noon to 1p if that time works for everyone else.

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Thank you, thank you, thank you!! I will confirm with Jeff and get an invite out.

I am sorry to say this, but we should have a prep call. Our last discussion with Jeff was a little rocky so I just want to make sure this one goes well. Would any of the following dates/times work for a prep call:

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Thursday, May 20 from 9 to 10 AM
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And I dropped Jerry off of our email trail to not clog his inbox.

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Super helpful! Thanks Ellen!

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Unfortunately I am pretty booked with only Thursday from 12-1 open.

John Spranza

D 916.679.8858 M 816.640.2487

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From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/19/2021 9:58:28 AM
To: Leaf, Rob/SAC (Rob.Leaf@jacobs.com) [Rob.Leaf@jacobs.com]; Davis-Fadtke, Kristal@Wildlife [kristal.davis-fadtke@wildlife.ca.gov]; Davis, Ryan A [rdavis@usbr.gov]; Kundargi, Kenneth@Wildlife [kenneth.kundargi@wildlife.ca.gov]; Williams, Jonathan@Wildlife [jonathan.williams@wildlife.ca.gov]; Hendrick, Mike [mike.hendrick@icf.com]; Dekar, Melissa D [mdekar@usbr.gov]; Cordova, Daniel A [dcordova@usbr.gov]; Wilder, Rick [Rick.Wilder@icf.com]; La Luz, Felipe@Wildlife [felipe.laluz@wildlife.ca.gov]; Chris Fitzer (CFitzer@esassoc.com) [CFitzer@esassoc.com]; Hassrick, Jason (Jason.Hassrick@icf.com) [Jason.Hassrick@icf.com]; Greenwood, Marin [Marin.Greenwood@icf.com]; evan.sawyer [evan.sawyer@noaa.gov]; Lecky, Jim [jim.lecky@icf.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; steve.micko@jacobs.com; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; Cathy Marcinkevage - NOAA Federal [cathy.marcinkevage@noaa.gov]; Perry, Russell W [rperry@usgs.gov]; ebuttermore@usbr.gov; mbeakes@usbr.gov; smanugian@usbr.gov; Alicia Forsythe [aforsythe@sitesproject.org]; Schoenberg, Steven [steven_schoenberg@fws.gov]; cyril.michel@noaa.gov; Bauer, Nick@Wildlife [Nick.Bauer@Wildlife.ca.gov]; Huneycutt, Andrew@Wildlife [Andrew.Huneycutt@Wildlife.ca.gov]; King, Vanessa M [vking@usbr.gov]; Johnson, Matt@Wildlife [Matt.Johnson@wildlife.ca.gov]; Sherrick, Robert@Wildlife [robert.sherrick@wildlife.ca.gov]; Nelson, Jonathan@Wildlife [Jonathan.Nelson@wildlife.ca.gov]; Meyers, Erica@Wildlife [Erica.Meyers@wildlife.ca.gov]; annmarie.ore@waterboards.ca.gov; Biondi, Oscar@Waterboards [oscar.biondi@waterboards.ca.gov]; Kurth, Ryon@Wildlife [Ryon.Kurth@Wildlife.ca.gov]; gordon.stephanieS@epa.gov; Paccassi, Michael@Wildlife [Michael.Paccassi@Wildlife.ca.gov]; stephen.maurano@noaa.gov; Sumer, Derya [dsumer@usbr.gov]
CC: Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]; Kevin Spesert [kspesert@sitesproject.org]; Jerry Brown [jbrown@sitesproject.org]; Marcia Kivett [MKivett@sitesproject.org]; Morgan, Joseph [Morgan.Joseph@epa.gov]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Thayer, Reed/SAC [Reed.Thayer@jacobs.com]; Unger, Sophie [Sophie.Unger@icf.com]
Subject: RE: Sies Project Joint Agency Workshop
Attachments: Aquatics Workshop 20210704_final.pdf

Good Morning,

Thanks to taking the time to participate in the workshop, attached is a .pdf of the presentation. We are working up a timeline for future meetings and topics and will get that out to this group.

Regards,
John

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----
From: Spranza, John
Sent: Thursday, April 29, 2021 8:08 AM
To: Spranza, John; Leaf, Rob/SAC (Rob.Leaf@jacobs.com); Davis-Fadtke, Kristal@Wildlife; Davis, Ryan A; Kundargi, Kenneth (Kenneth.Kundargi@wildlife.ca.gov); Williams, Jonathan@Wildlife; Hendrick, Mike (Mike.Hendrick@icf.com); Melissa Dekar (mdekar@usbr.gov); Cordova, Daniel (dcordova@usbr.gov); Wilder, Rick; La Luz, Felipe@Wildlife; Chris Fitzer (CFitzer@esassoc.com); Hassrick, Jason (Jason.Hassrick@icf.com); Greenwood, Marin; Evan Sawyer - NOAA Federal; Jim Lecky (jim.Lecky@icf.com); Erin Heydinger (Erin.Heydinger@hdrinc.com); Micko, Steve/SAC; Monique Briard (monique.briard@icf.com); Cathy Marcinkevage - NOAA Federal; Perry, Russell W; ebuttermore@usbr.gov; mbeakes@usbr.gov; smanugian@usbr.gov; Alicia Forsythe; Schoenberg, Steven; cyril.michel@noaa.gov; Bauer, Nick@Wildlife; Huneycutt, Andrew@Wildlife; King, Vanessa M; Johnson, Matt@Wildlife; Sherrick, Robert@Wildlife; Nelson, Jonathan@Wildlife; Meyers, Erica@Wildlife; annmarie.ore@waterboards.ca.gov; Biondi, Oscar@Waterboards; Kurth, Ryon@Wildlife; gordon.stephanieS@epa.gov; Paccassi, Michael@Wildlife; stephen.maurano@noaa.gov; Derya Sumer (dsumer@usbr.gov)

Cc: Arsenijevic, Jelica; Kevin Spesert (kspesert@sitesproject.org); Jerry Brown (jbrown@sitesproject.org); Marcia Kivett; Morgan, Joseph; Laurie Warner Herson; Thayer, Reed/SAC; Unger, Sophie
Subject: Sies Project Joint Agency Workshop
When: Friday, May 14, 2021 9:00 AM-10:30 AM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Joint Agency Workshop to discuss the analytical framework, operational criteria and initial aquatics analysis for the Sites Project

Agenda to follow

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Or call in (audio only)
+1 213-514-6883,,855752524# United States, Los Angeles
(833) 255-2803,,855752524# United States (Toll-free)
Phone Conference ID: 855 752 524#
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Learn More | Meeting options

Sites Project Joint Aquatic Workshop

PULSE FLOWS FOR SALMON:
SITES RESERVOIR PROJECT DIVERSION CRITERIA

May 14, 2021 Workshop

Agenda

- Introductions and Objectives
  - Objectives and Approach for Today
- Agency Prioritized Questions Received
- Rationale Discussion
- Exchanges and Upper Sacramento River Temps
- Next Steps

Objectives and Approach

- Sites review prioritized comments received
- Diversion rationale
  - Biological and/or otherwise
  - Q&A session on operational components and rearing impact assessment
- Exchanges and temperature of upper Sacramento River
- Water quality questions will have a dedicated workshop

General Comment Areas

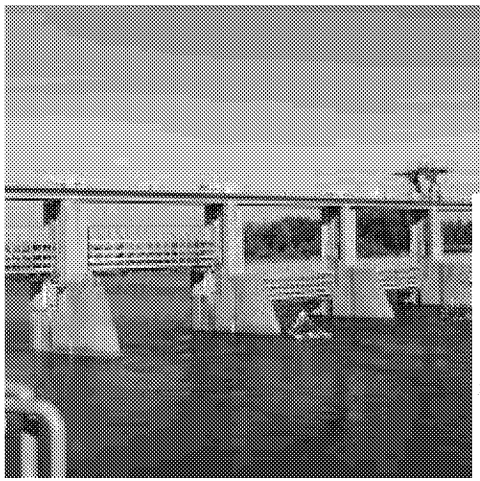
- Biological rationale for diversion and operation criteria
- Methodology of water delivery and analysis of water sent through Yolo bypass, south-of-delta and North Bay Aqueduct
- Fish presence monitoring for operations
- Temperature effects to Sacramento River and Yolo Bypass due to deliveries
- Shasta exchanges and biological benefits vs diversion impacts
- Oroville and Folsom exchanges and impact assessment methodology
- Effects of operations to Funks and Stone Corral Creeks

Rationale

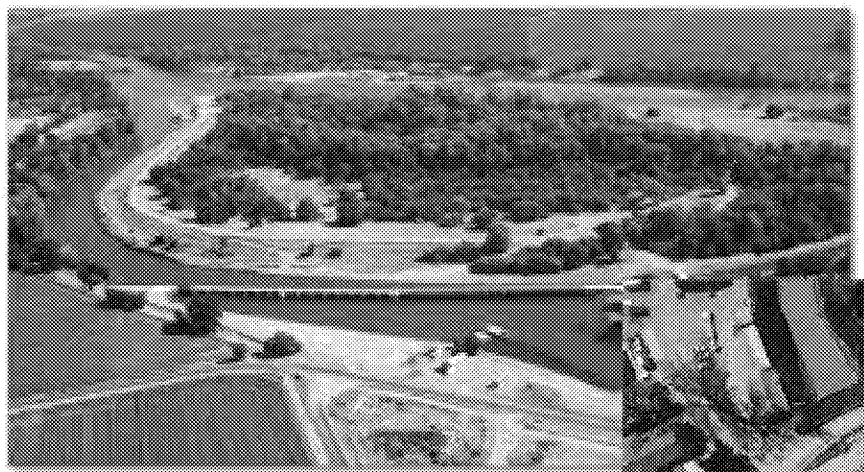
Rationale – Regulatory Framework

- Among all the statutory and permit requirements Environmental review and ESA compliance under the respective state and federal laws is paramount
- The framework for decision making under those statutes is: a comparison of future conditions with and without the project
- To make these workshops meaningful we would like to shift to focus to determination of effects and where appropriate identification of mitigation

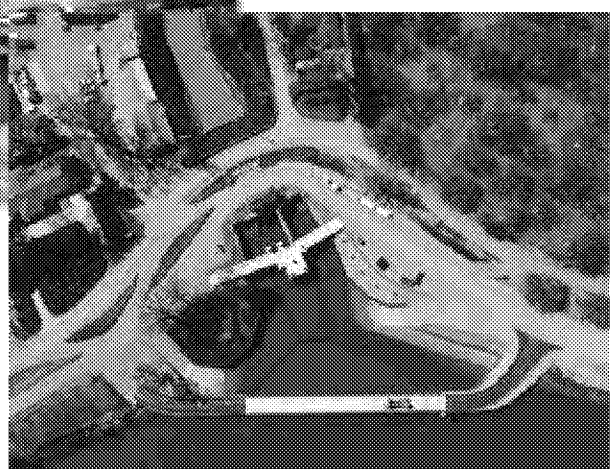
Biological Rationale – existing standards



RBDD



GCID



RD 108

Biological Rationale – Bend Bridge Pulse flow

Focus of April 9, 2021 workshop

- Rich body of literature on the value or flood plains, side channels, and tributary streams as rearing habitat
- Recent literature on flow survival relationship for emigrating smolts (Michel et al. 2015, Henderson et al. 2018, Notch et al. 2020)
- Recent literature on the importance of variability in the hydrograph, particularly in drier year, in survival of emigrating smolts (Michel et al. 2021, Hassrick et al. in prep)

Biological Rationale – Bend Bridge Pulse flow

Challenges with existing literature

- There isn't a good metric to relate flow to survival through the rearing phase of the life cycle
- The flow survival relationships presented in the literature (e.g. Michel 2015 and Henderson 2018) are based on a comparison of smolt survival in wet years and dry years.
- Fish survive better in wet years, however, the application of these studies to within year operational decisions is limited
- The literature on variability in the hydrograph (Michel et al. 2021 and Hassrick et al. in prep) appears more relevant to within year operations

Biological Rationale – Operations

- Real-time monitoring will be key, but
- We need input from this group
  - Hydrology
  - Fish presence
- What point do we turn on the pumps?
- How does the project gain access to the existing monitoring program?
- Would Sites project need to augment monitoring for real-time presence absence? If so, how?

Biological Rationale – How to Assess Impacts to Rearing Habitat?

- Literature is sparse with options
  - Relationship between flow and habitat is the current metric
  - Seems like more side channel is beneficial
    - We are modeling change with and without project
    - How does that relate to quantifiable effect?
      - What is the threshold where an effect would be realized?
        - 2,900 cfs max diversion
      - What has been used in the past or in development?

Exchanges and Upper Sacramento Temperatures

Exchanges and Temperatures Upper Sac

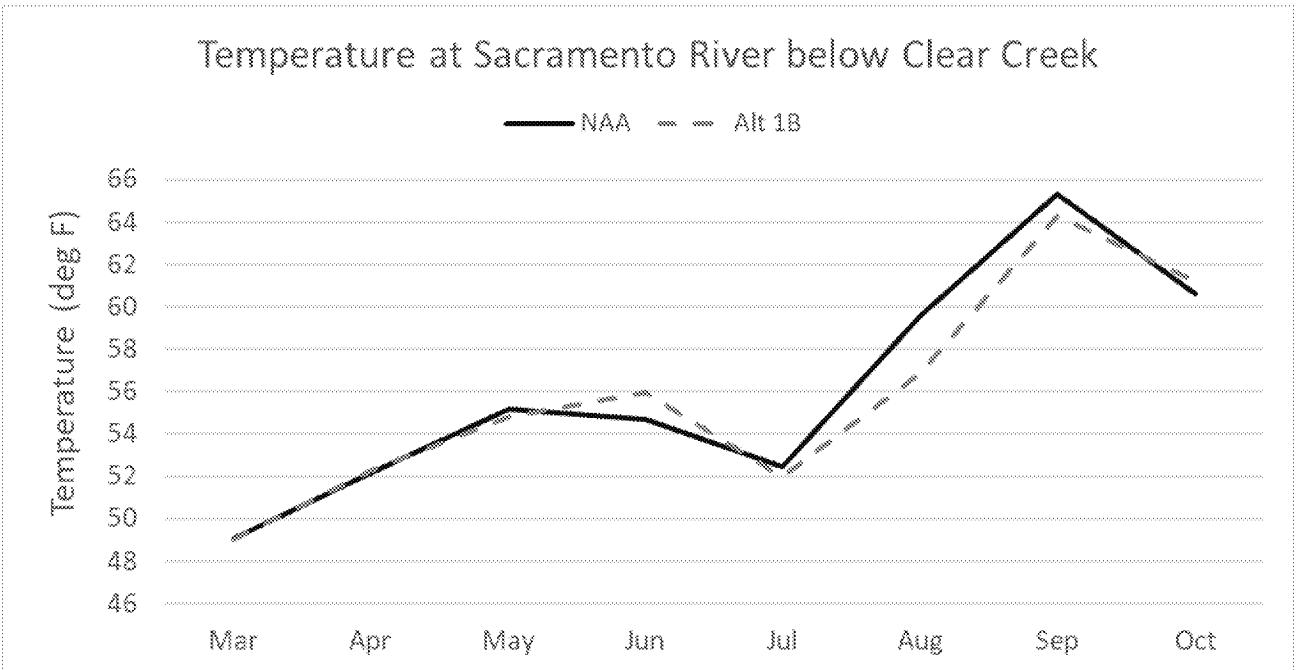
- Modeled exchange criteria:
  - Time Period: April through June
  - Water Year Types: Dry and Critically Dry water years
  - Temperature Management Tiers: 2, 3 and 4
  - Minimum flow requirement at Keswick:
    - 6,000 cfs in April and May
    - 10,000 cfs in June
- Release criteria
  - Time Period: August through November

Exchanges and Benefits

- Frequency of exchange
  - 8 years of 82-year planning simulation period with exchange volume greater than 50 TAF
- Volume of exchange
  - From 50 TAF to 230 TAF
- **Temperature benefits**
  - Decreases of up to 2 deg F in Sac River at Clear Creek
- **Early life stage temperature-based mortality**
  - Martin: Decreases of up to 9% in a given year
  - Anderson: Decreases of up to 17% in a given year

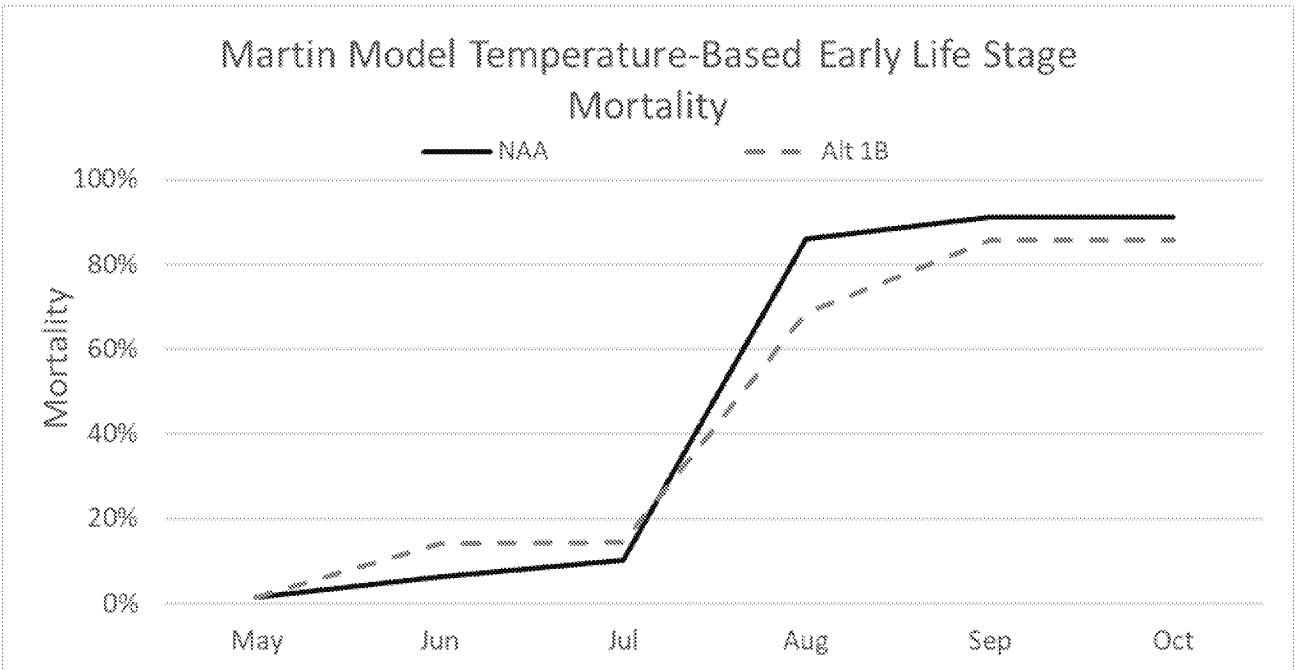
Exchanges and Temperatures

- Year: 1977
- Water Year Type: Critically Dry
- Temperature Tier: 4



Exchanges and Temperatures

- Year: 1977
- Water Year Type: Critically Dry
- Temperature Tier: 4



Exchanges and Temperatures

- Year: 1977
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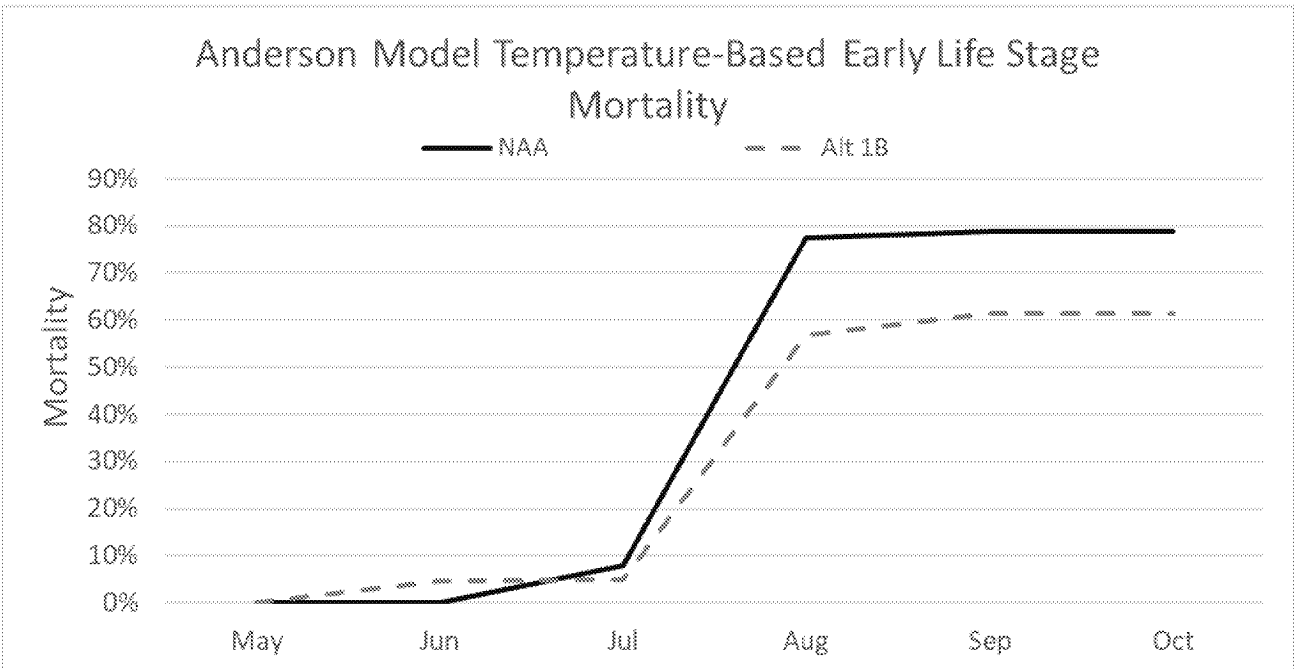
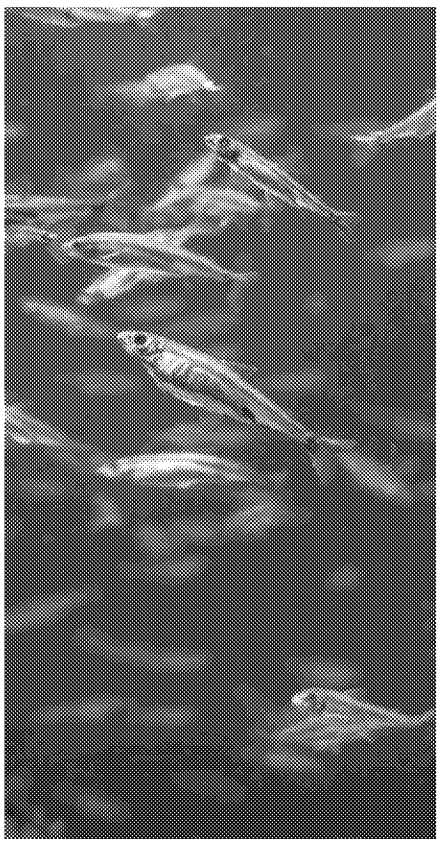


Next Steps

- Topics for next workshop
  - Change in approach for workshop?
    - What would be more effective?
- Schedule for next meeting



Sites

Sites Project Diversion Criteria

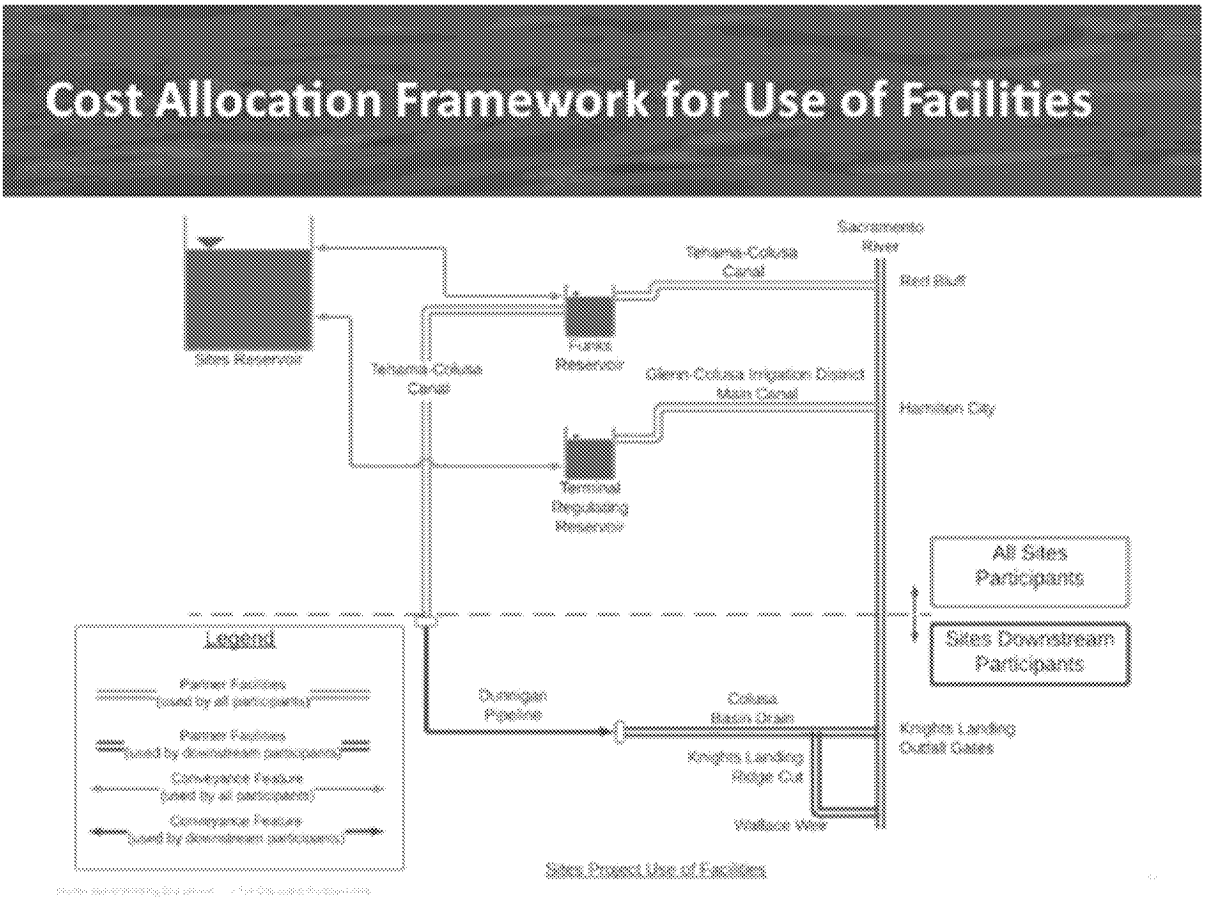
	Sites Diversion Criteria
Bend Bridge Pulse Protection Season	October - May
Bend Bridge Pulse Protection Initiation Criteria	3-day average Sacramento River must exceed 8,000 cfs; 3-day average tributary flow must exceed 2,500 cfs
Bend Bridge Pulse Protection Duration	7 days upon initiation
Bend Bridge Pulse Protection Re-setting Criteria	After completion of pulse protection period, resetting criteria must be met for another pulse protection period to commence: 3-day Sacramento River flow must go below 7,500 cfs for 7 consecutive days; 3-day moving average tributary flow must go below 2,500 cfs for 7 consecutive days
Wilkins Slough Bypass Flow	8,000 cfs April - May; all other times, 5,000 cfs
Fremont Weir Notch Criteria	Prioritize the Fremont Weir Notch, Yolo Bypass preferred alternative, flow over weir within 10% when spill range between 600 cfs and 6,000 cfs; First 600 cfs of spill are protected within 1%
Flows into the Sutter Bypass System	None
Freeport Bypass Flow	None
Surplus Delta Outflow	7 days of flow availability in February – March is required before diversions can be made in those months
SWP ITP Delta Outflow	44,500 cfs April - May

From: JP Robinette [JRobinette@BrwnCald.com]
Sent: 5/20/2021 10:06:27 AM
To: jeff.herrin@aecom.com; Brian Grubbs [grubbs@montaguederose.com]; Luu, Henry [henry.luu@hdrinc.com]; Spranza, John [john.spranza@hdrinc.com]
CC: michael.forrest [michael.forrest@aecom.com]; Smith, Jeff/SAC [jeff.smith1@jacobs.com]; Pete.Rude [Pete.Rude@jacobs.com]; Cheyanne Harris [CHarris@BrwnCald.com]; Doug Montague [montague@montaguederose.com]; Alicia Forsythe [aforsythe@sitesproject.org]
Subject: RE: [EXTERNAL] RE: RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Team,

I think we have this covered (separate email). The only outstanding question is what % of the mitigation lump sum is for the Dunnigan pipeline and any use of CBD facilities (which has been requested from Ali/John).

FYI for this team, this is what has been presented to the boards on this topic.



Sites Downstream Participants

- State of California
- Bureau of Reclamation
- Antelope Valley -East Kern
- City of American Canyon
- Coachella Valley
- Desert
- Irvine Ranch
- Metropolitan WD of Southern California
- Rosedale -Rio Bravo
- San Bernardino Valley
- San Gorgonio Pass
- Santa Clara Valley
- Santa Clarita Valley
- Wheeler Ridge -Maricopa
- Zone 7
- Others?

Costs Allocated to Sites Downstream Participants Only

Sites Downstream Participants pay capital, mitigation, and OM&R costs related to:

- Dunnigan Pipeline
- Improvements (if needed) Related to Partner Facilities:
  - Tehama Colusa Canal
  - Colusa Basin Drain
  - Knights Landing Outfall Gates
  - Wallace Weir
  - Associated mitigation and monitoring costs

A wheeling agreement will be developed in Phase 3 for other Sites participants to use Downstream Facilities for transfers.

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

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Thursday, May 20, 2021 7:58 AM
To: Brian Grubbs <grubbs@montaguederose.com>; Luu, Henry <henry.luu@hdrinc.com>; Spranza, John <john.spranza@hdrinc.com>
Cc: michael.forrest <michael.forrest@aecom.com>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>; Pete.Rude <Pete.Rude@jacobs.com>; JP Robinette <JRobinette@BrwnCald.com>; Cheyanne Harris <CHarris@BrwnCald.com>; Doug Montague <montague@montaguederose.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: [EXTERNAL] RE: RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Brian,

I'm not in the loop for that determination. Henry may have the answer.

Jeff

From: Brian Grubbs <grubbs@montaguederose.com>
Sent: Wednesday, May 19, 2021 7:40 PM
To: Luu, Henry <Henry.Luu@hdrinc.com>; John <john.spranza@hdrinc.com>; Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; JP Robinette <JRobinette@brwncald.com>; Cheyanne Harris <CHarris@brwncald.com>; Doug Montague <montague@montaguederose.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: [EXTERNAL] RE: RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Henry, Jeff,
The other piece of info needed, if it's available, is the split for the various HR and HC facilities by usage as far as who pays the capital costs. I understand the terms are that facilities are paid for by "All" or "Downstream"

Brian

Brian Grubbs | Managing Director
Montague DeRose and Associates
916-712-1747

From: Brian Grubbs <grubbs@montaguederose.com>
Sent: Tuesday, May 18, 2021 4:56 PM
To: 'Luu, Henry' <Henry.Luu@hdrinc.com>; 'John' <john.spranza@hdrinc.com>; 'Herrin, Jeff' <jeff.herrin@aecom.com>
Cc: 'Forrest, Michael' <michael.forrest@aecom.com>; 'Smith, Jeff/SAC' <jeff.smith1@jacobs.com>; 'Rude, Pete/RDD' <Pete.Rude@jacobs.com>; 'JP Robinette' <JRobinette@BrwnCald.com>; 'Cheyanne Harris' <CHarris@BrwnCald.com>; Doug Montague <montague@montaguederose.com>; 'Alicia Forsythe' <aforsythe@sitesproject.org>
Subject: RE: [EXTERNAL] RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

All,
Here is the current construction phasing spreadsheet based on data from Henry Luu and Jeff Herrin today. Please review for any edits:
Some more questions:

1. John Spranza? Need phasing of Mitigation?
2. John Spranza? What escalation for Mitigation costs?

3. Recreational Facilities phasing (less important as it's a small number), any thoughts on what year to put the entire cost into?
4. Herrin/Luu? What construction cost escalation to go from Mar 2021 to future years 2024-2029?
5. 2021-2023 costs? Cash calls?

Brian Grubbs | Managing Director
Montague DeRose and Associates
916-712-1747

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, May 18, 2021 1:41 PM
To: Brian Grubbs <grubbs@montaguederose.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>; Herrin, Jeff <jeff.herrin@aecom.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>
Subject: RE: [EXTERNAL] RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Brian,

1. It looks like the $154.5M for HR in 2024 is missing in the total column, and the remainder of the difference is related to Mitigation ($540M) and Recreation ($32M). Total project cost in 2019 dollars should come out to around $3,795M with these 3 items included.
2. Reference Pete's email below. I recommend assuming construction timing and cost as a summation of the following line items: Transmission Powerlines/Substations and Interconnection Facilities – PGE, TRR (West), TRR West/Funks Pipelines, Funks PGP, and TRR West PGP.
3. Correct – the 3% is **not** an annual de-escalation; it is the assumed total de-escalation between March 2021 and July 2019.

Henry H. Luu, PE
D 916.679.8857 M 916.754.7566

hdrinc.com/follow-us

From: Rude, Pete/RDD <Pete.Rude@jacobs.com>
Sent: Tuesday, May 18, 2021 1:08 PM
To: Herrin, Jeff <jeff.herrin@aecom.com>; Brian Grubbs <grubbs@montaguederose.com>; Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>
Subject: RE: [EXTERNAL] RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Brian and Henry,

On Item 2 – the maxwell intertie is accomplished by 40 feet of pipe and a valve between one of the TRR Pipes and one of the Funks Pipes, just west of Funks Reservoir. However in order for it to work it needs the TRR pipelines, the Funks Pipelines and both PGP's.

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

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Tuesday, May 18, 2021 12:56 PM
To: Brian Grubbs <grubbs@montaguederose.com>; Luu, Henry <Henry.Luu@hdrinc.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Smith, Jeff/SAC <Jeff.Smith1@jacobs.com>
Subject: RE: [EXTERNAL] RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Brian,

I suspect the additional cost may be for mitigation and recreation/O&M buildings. I believe the 3% de-escalation is a total and not an annual de-escalation. I'm not sure on item 2.

Jeff

From: Brian Grubbs <grubbs@montaguederose.com>
Sent: Tuesday, May 18, 2021 12:45 PM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Herrin, Jeff <jeff.herrin@aecom.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>
Subject: [EXTERNAL] RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Henry, Jeff,
Thanks much…
I put both of your info into the attached. Two questions:
1. totaling the costs in both your data sets is $3,067 million, but the last cost from Henry was $3,795 million. Where is the difference of $727.05 made up? Is that 2021-2023 costs?
2. When is the Maxwell Intertie completed and what is it's stand alone cost as that will determine the timing and amount of the USDA loan?
3. Henry to verify, the 3% de-escalation you offered from your Mar-2021 analysis is NOT an annual de-escalation, but the total de-escalation for the total 20 months?

Brian

Brian Grubbs | Managing Director
Montague DeRose and Associates
916-712-1747

From: Luu, Henry <Henry.Luu@hdrinc.com>
Sent: Tuesday, May 18, 2021 10:36 AM
To: Brian Grubbs (grubbs@montaguederose.com) <grubbs@montaguederose.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>; Herrin, Jeff <jeff.herrin@aecom.com>; Rude, Pete/RDD <Pete.Rude@jacobs.com>; Smith, Jeff/SAC <jeff.smith1@jacobs.com>
Subject: RE: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Brian,

Cash flow for HC Alternative 1 facilities in 2021 dollars are attached. For consistency, you can assume an escalation/de-escalation of about 3% between July 2019 and March 2021 dollars.

Henry M. Luu, PE
D 916.679.8857 M 916.754.7566

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Tuesday, May 18, 2021 10:19 AM
To: Luu, Henry <Henry.Luu@hdrinc.com>; Brian Grubbs (grubbs@montaguederose.com) <grubbs@montaguederose.com>
Cc: Forrest, Michael <michael.forrest@aecom.com>
Subject: FW: Sites HR - Alternative 1 - Construction Cost Per Year for HR Facilities

Our time-phased construction cost is provided below. You will need a similar cost from the HC (conveyance contract) for the facilities that they are working on.

Jeff

Sites HR - Alternative 1 - Construction Cost vs Year
(July 2019 Dollars)

Year	Estimated Expenditure (Approx.) $M	%
2024	$154.5	6.8%
2025	$415.4	18.2%
2026	$627.5	27.5%
2027	$555.1	24.3%
2028	$403.6	17.7%
2029	$124.2	5.4%
Total (2019 dollars)	**$2,280.3**	**100.0%**

Sites Reservoir Project - Yocha Dehe Meeting Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity

Our Commitment – To live up to these values in everything we do

Meeting Information:

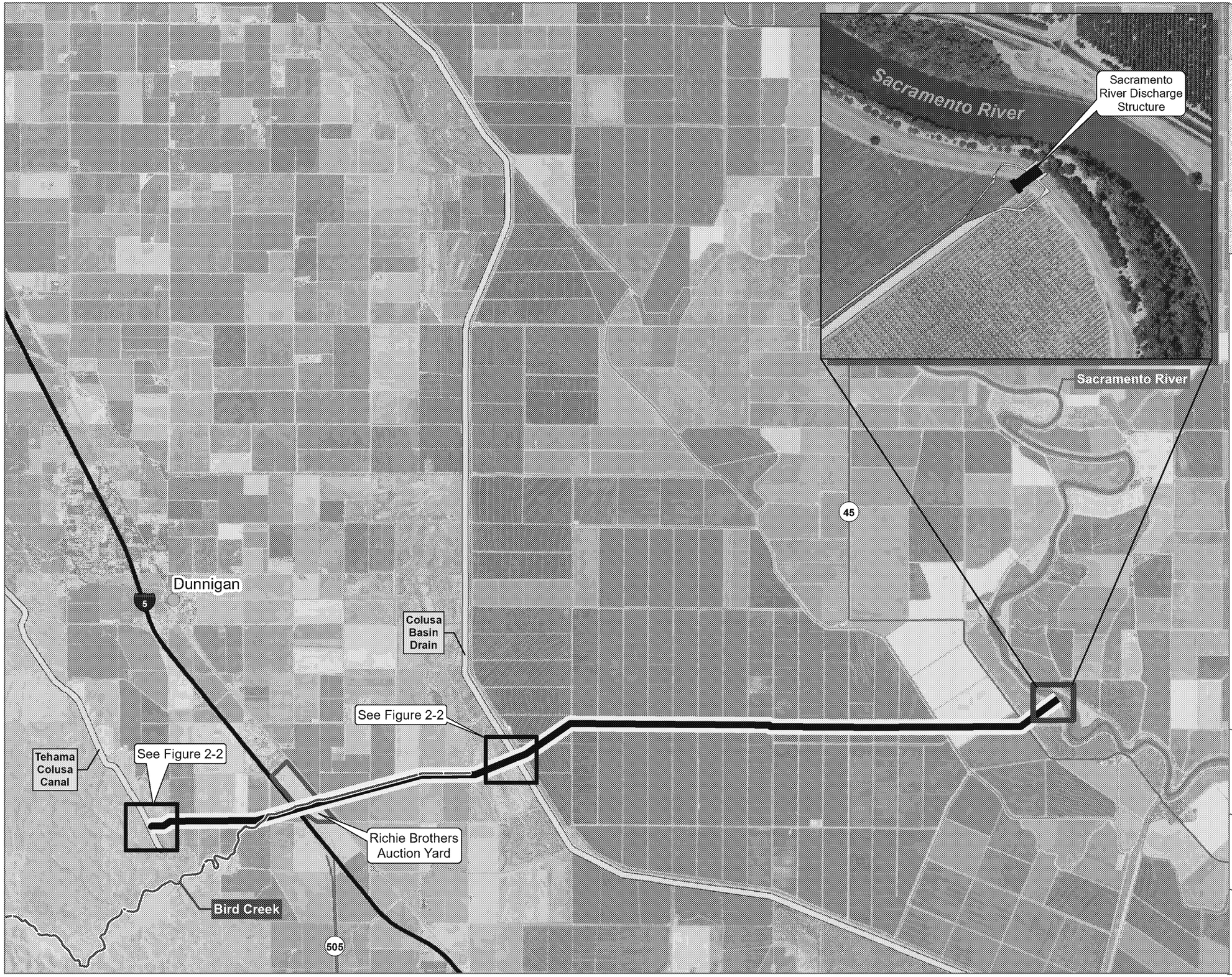
Date:	May 21, 2021	**Location:**	
Start Time:	2:00 p.m.	**Finish Time:**	3:00 p.m.
Purpose:	Ongoing AB 52 Consultation with Representatives of the Yocha Dehe Wintun Nation		

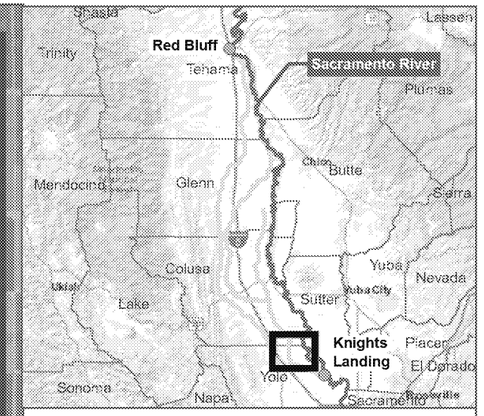
Meeting Participants:

Laverne Bill, Yocha Dehe	Kevin Spesert, Sites Authority	Janis Offermann, Horizon
Rebekah Canavesio, Yocha Dehe		Laurie Warner Herson, Sites Integration

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Introductions/Purpose of Meeting	Kevin	5 mins
2. RDEIR/SDEIS Status Update a. Current Status of Project b. RDEIR/SDEIS Release Date	Laurie	10 min
3. Tribal Cultural Resources a. Current Status of Cultural Research b. Need to Identify TCRs	Janis	15 min
4. Yocha Dehe Questions and Concerns	Laverne	20 mins
5. Next Steps	All	10 min





LEGEND

- City/Town/Community
- Bird Creek
- Dunnigan Underground Pipeline

DATA SOURCES: City\Town - GNIS, 2020; Project Features - AECOM, 2020; Canals (NHD) - USGS, 2018; Aerial Imagery (NAIP) - USDA, 2020.

DISCLAIMER: This exhibit is preliminary and is subject to change.

MAP DATE: 3/24/2021

FIGURE 2-4

ALTERNATIVE 2 CONVEYANCE TO SACRAMENTO RIVER COMPONENTS

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MILES

Sites

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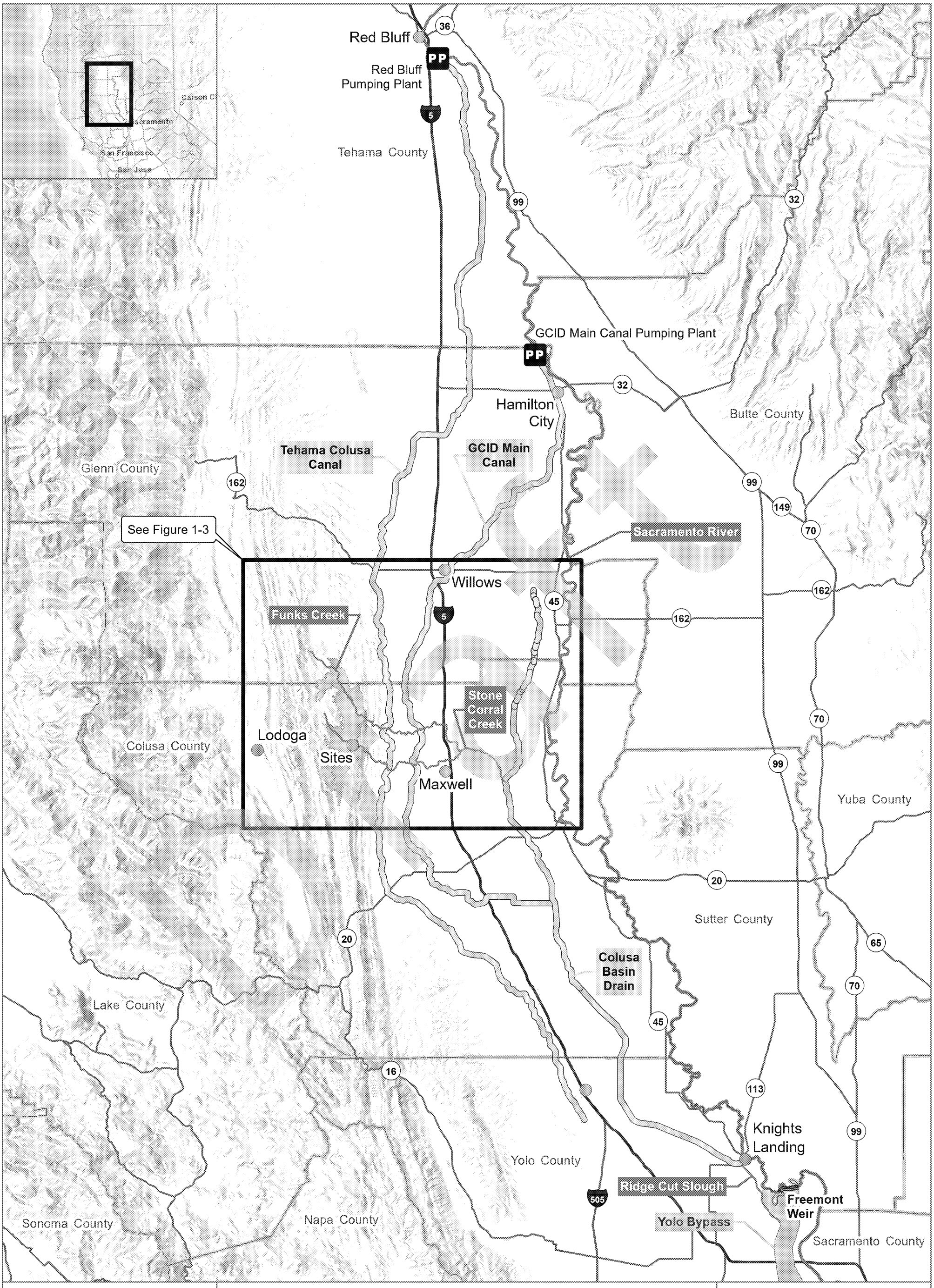

FIGURE 1-2
VICINITYL MAP

DATA SOURCES: Pumping Plants - ICF, 2020; City\Town - GNIS, 2020; Canal, River and Creek/Slough (NHD) - USGS, 2018; Proposed Sites Reservoir - AECOM, 2020; World Hillshade - ESRI, 2020; Counties - CALFIRE-FRAP, 2019.

DISCLAIMER: This exhibit is preliminary and is subject to change.

MAP DATE: 2/23/2021

Sites

PATH: \\PDCCITRDSGIS1\PROJECTS_1\SITES_PA\00528_20\FIGURES\DOC\EIREIS\1_DEIR\01_ADEIR\CHAPTER1\FIG1_2_VICINITY_MAP.MXD - USER: 19105 - DATE: 2/23/2021

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/24/2021 1:57:18 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Monique Briard (monique.briard@icf.com) [monique.briard@icf.com]; Oakes, Harry [Harry.Oakes@icf.com]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: FW: Mitigation Cost Review
Attachments: SitesReservoir_MitigationCostEstimate_05102021.xlsx

I asked Jeff H to take a look at the mitigation sheet and he has provided a few comments. I think we have good rational behind all of the assumptions that he has hit on, but its nice to get a different perspective. Please let me know if you see any comments that we should address further.

Thanks.

John Spranza

D 916.679.8858 M 818.640.2487

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Monday, May 24, 2021 10:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Luu, Henry <Henry.Luu@hdrinc.com>
Subject: FW: Mitigation Cost Review

John,

My comments are as follows:

- The cost per acre for annual grassland mitigation banking is about exactly double the cost that we used. Maybe the cost for the mitigation bank is double. Your cost may be for irrigated grassland. If we can use unirrigated rangeland, that should suffice to mitigate for the valley inundated by Sites and I believe it may be less expensive. Irrigation is a pretty big cost driver. I don't think we want to use a mitigation bank with irrigation if it can be avoided.
- I'm not sure if the stream mitigation includes Funks and Stone Corral Creeks. We are spending a lot of money to put in pipelines and to maintain flows in the creeks prior to construction that would interrupt flow to Funks and Stone Corral Creeks. Maybe you are mitigating a different creek, but the cost seems high for these two creeks.
- The mitigation cost for blue oak woodlands/oak savannah is also a much higher per acre than we were using (about 6 times our cost). Suggest you check the cost per acre ($35,000/acre may generate some questions).
- Here is what we had on elderberry previously:

There are two elderberry shrubs located within the potential construction disturbance area for Sites Reservoir and Dams that could be completely avoided by establishing and maintaining a 100-foot-wide or wider buffer around them. Construction crews shall be briefed regarding the need to avoid these plants, and signs shall be posted during construction to avoid the buffer area. After Project construction is complete, this area would not be affected by Project operation or maintenance.

The elderberry shrub immediately adjacent to the footprint of the Delevan Pipeline Intake/Discharge Facility is located on the edge of an irrigation canal that is situated along an existing access road. Because of its proximity to the road, it would not be possible to establish a 100-foot-wide buffer. It would also not be possible to establish a 100-foot-wide buffer for the shrubs located immediately adjacent to the existing Maxwell Sites Road. Consultation with USFWS would be initiated for possible approval to encroach on the buffer. Otherwise, appropriate mitigation measures shall be implemented.

The elderberry shrubs within the footprint of Sites Reservoir, Sites Dam, and Golden Gate Dam, as well as the one shrub within the footprint of the Delevan Pipeline Intake/Discharge Facility, would not be avoided by Project construction, and therefore, shall be transplanted or replaced, depending on the likelihood of survival post-transplantation. Transplantation procedures shall comply with USFWS's 1999 Conservation Guidelines for the Elderberry Longhorn Beetle (USFWS, 1999). If transplantation is not feasible, USFWS general guidelines require replacement of elderberry plants in designated mitigation areas. Elderberry plants are typically replaced at a ratio of 2:1 for stems greater than one inch in diameter at ground level with no adult emergence holes, 3:1 for stems where emergence holes are documented in less than 50 percent of the shrubs, and 5:1 for stems greater than one inch in diameter with emergence holes.

Mitigation measures already required for the loss of riparian habitat pursuant to the mitigation for loss of wildlife habitat types described above could potentially compensate for the native planting requirement for elderberry plant mitigation.

- Red-legged Frog is a much bigger issue now than it was when the prior estimate was put together due to USFW focus. It is a pretty significant contributor to cost growth.
- We have a pretty significant difference on Williamson Act associated costs. We had assumed that contracts could be rescinded for many acres. The current estimate did not take this approach. The delta is about $26M.
- Henry mentioned this was a 2019 cost estimate. Given the cost per acre, you may want to consider making it 2020 or 2021.

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

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T +1-916-414-5800
aecom.com

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Friday, May 21, 2021 10:27 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Subject: [EXTERNAL] Mitigation Cost Review

Hi Jeff,
Could you take a look at the attached mitigation cost estimate and get back to me with comments on items you see as potential issues? We're looking to finalize it the first week in June so if you could get those over to me by the end of next week I would appreciate it.

Let me know if you can't squeeze this in or if you have any questions.

Thanks
John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

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

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Aquatics
Mitigation Discussion - Agenda

Affordable Water, Sustainably Managed

Our Core Values – Safety, Trust and Integrity, Respect for Local Communities, Environmental Stewardship, Shared Responsibility and Shared Benefits, Accountability and Transparency, Proactive Innovation, Diversity and Inclusivity
Our Commitment – To live up to these values in everything we do

Meeting Information:

Date:	May 25, 2021	**Location:**	Webex
Start Time:	1:30 p.m.	**Finish Time:**	3:00 p.m.
Purpose:	Discuss EIR/EIS impact determinations and mitigation options for aquatics chapter.		

Meeting Participants:

Monique Briard, ICF	Marin Greenwood, ICF	Laurie Warner Herson, Sites Integration
Chris Fitzer, ESA	Mike Hendrick, ICF	Rick Wilder, ICF
Linda Fisher, Sites Integration	Jim Lecky, ICF	Nicole Williams, ICF
Ali Forsythe, Sites Authority	Harry Oakes, ICF	Jeff Kozlowski, ICF
	John Spranza, Sites Integration	Sophie Unger, ICF

Agenda:

Discussion Topic	Topic Leader	Time Allotted
1. Welcome/Introductions	Linda/All	5 mins
2. Overall Status	Mike	80 mins
a. Generally Complete		
i. Fish 1 – Construction Effects and BMPs	Jeff	
ii. Analysis and conclusions of inundation of Funks Creek and Stone Corral Creek	Jeff/Mike/Jim	
iii. Environmental Setting for Delta - Mercury/pesticides/metals downstream = LTS for fish	Marin	
iv. Fish 6 -19 – Operations Effects on species of management concern	Rick/Marin/Sophie/Mike	
v. Fish 11 – Stone Corral and Funks Creeks release temperatures	Mike	
b. Currently Evaluating		

	i. Impacts Fish 2, 3, 4, and 5 – Operations effects on salmonids and steelhead need data related to side-channel analysis to finalize rearing habitat analysis.	Rick/Sophie	
	ii. Cumulative Effects section	Mike/Chris	
3.	Commitments/Monitoring/Adaptive Management Plans	All	
4.	Action Items	All	5 min

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/25/2021 7:52:23 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton

Hi,
See below for my thoughts on your questions.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Monday, May 24, 2021 1:45 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites - Follow up on Discussion with Jeff Sutton
Importance: High

Hi John and Laurie –

Here's the action items that I had from our Friday discussion with Jeff.

1. Schedule and complete briefing for Jeff on all other relevant EIR/EIS Chapters – Ali to schedule for Group 1; Laurie, I will need help with a presentation to walk him through the Group 1 Chapters
2. Verify CRLF mapping east of Funks Reservoir – John, can you work with ICF on this? : JJS will do
3. Fix Keck's KMZ mapping – mapped in reservoir – John, can you work with ICF on this? JJS will do
4. DWR surveys – did they find Western pond turtle in Funks? – John can you verify this? See #8 below. JJS: There was no reference for where they found the turtle.
5. Pull our portions of Funks write-ups from Group 1 Chapters (and future chapters) and send to Jeff – Ali to take a stab at this and get to Laurie for review
6. Develop approach for CRLF for addressing with BOR and USFWS – Ali to develop, send to John for review
7. Get Jeff presentation and graphics from Friday's meeting – Ali will send presentation. John, how should we do the maps? Print them out of Google earth or ask ICF to develop rough maps for this? We should also send maps of habitat and any species mapped at the Red Bluff PP and at the Dunnigan Turnout. JJS: I'll work on this with ICF.

8. Summary of all DWR surveys and findings for Reclamation lands – John, can you take a stab at this? We didn't talk about this at our meeting, but Jeff called me today and I think this might be really useful JJS: So they don't really map locations, just that they found or did not find a particular species. They then use the general location references, "Western pond turtles were found in the project area, as well as outside the reservoir footprint, both upstream and downstream." We can't take that and determine if it was found on reclamation land or other locations. Still, I will put together a summary for the "Sites and Colusa Project" results.

I would like to follow up with Jeff by this Friday if we can with all of these. I realize that might be hard for some of these. Let me know what you think.

Let me know ASAP if I missed anything or miss characterized anything as I plan to follow up with Jeff first thing tomorrow with these items.

Ali

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

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/25/2021 9:46:55 AM
To: Fisher, Linda [Linda.Fisher@hdrinc.com]; Fisher, Linda [Linda.Fisher@hdrinc.com]; Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Monique Briard (Monique.Briard@icf.com) [Monique.Briard@icf.com]; Hendrick, Mike [mike.hendrick@icf.com]; Greenwood, Marin [Marin.Greenwood@icf.com]; Chris Fitzer [cfitzer@esassoc.com]; Wilder, Rick [Rick.Wilder@icf.com]; Lecky, Jim [jim.lecky@icf.com]; Oakes, Harry [Harry.Oakes@icf.com]
CC: Williams, Nicole [Nicole.Williams@icf.com]; Unger, Sophie [Sophie.Unger@icf.com]
Subject: RE: Sites - Aquatics Mitigation Discussion

HI,
I would like to add one item to the end of the agenda for today. The ICF team indicated that the aquatic analysis is showing less than significant effect without mitigation, which is what we'd expect from how the project has been designed. However, CDFW brought up that "death by a 1,000 cuts" is something that they are concerned with and we should look at the entire ecosystem when determining effects to fish. Is this something we would want to discuss in the document? Would it be covered under the cumulative analysis?

Thanks.

John Spranza

D 916.679.8858 M 818.640.2487

-----Original Appointment-----
From: Fisher, Linda <Linda.Fisher@hdrinc.com>
Sent: Wednesday, May 12, 2021 5:44 PM
To: Fisher, Linda; Alicia Forsythe; Laurie Warner Herson; Spranza, John; Monique Briard (Monique.Briard@icf.com); Hendrick, Mike; Greenwood, Marin; Chris Fitzer; Wilder, Rick; Lecky, Jim; Oakes, Harry
Cc: Williams, Nicole; Unger, Sophie
Subject: Sites - Aquatics Mitigation Discussion
When: Tuesday, May 25, 2021 1:30 PM-3:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Microsoft Teams Meeting

Agenda attached

Microsoft Teams meeting

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Sites Reservoir Project

American River Modeling

Sites

Baseline

- Baseline/No Action Alternative used 2020 Benchmark
  - CalSim II
  - Developed by Reclamation in coordination with DWR and CDFW
  - Includes both ROC on LTO and the SWP ITP
  - Includes the American River Flow Management Standard
- All operations/actions included in the baseline were incorporated into the action alternatives ("with Sites")

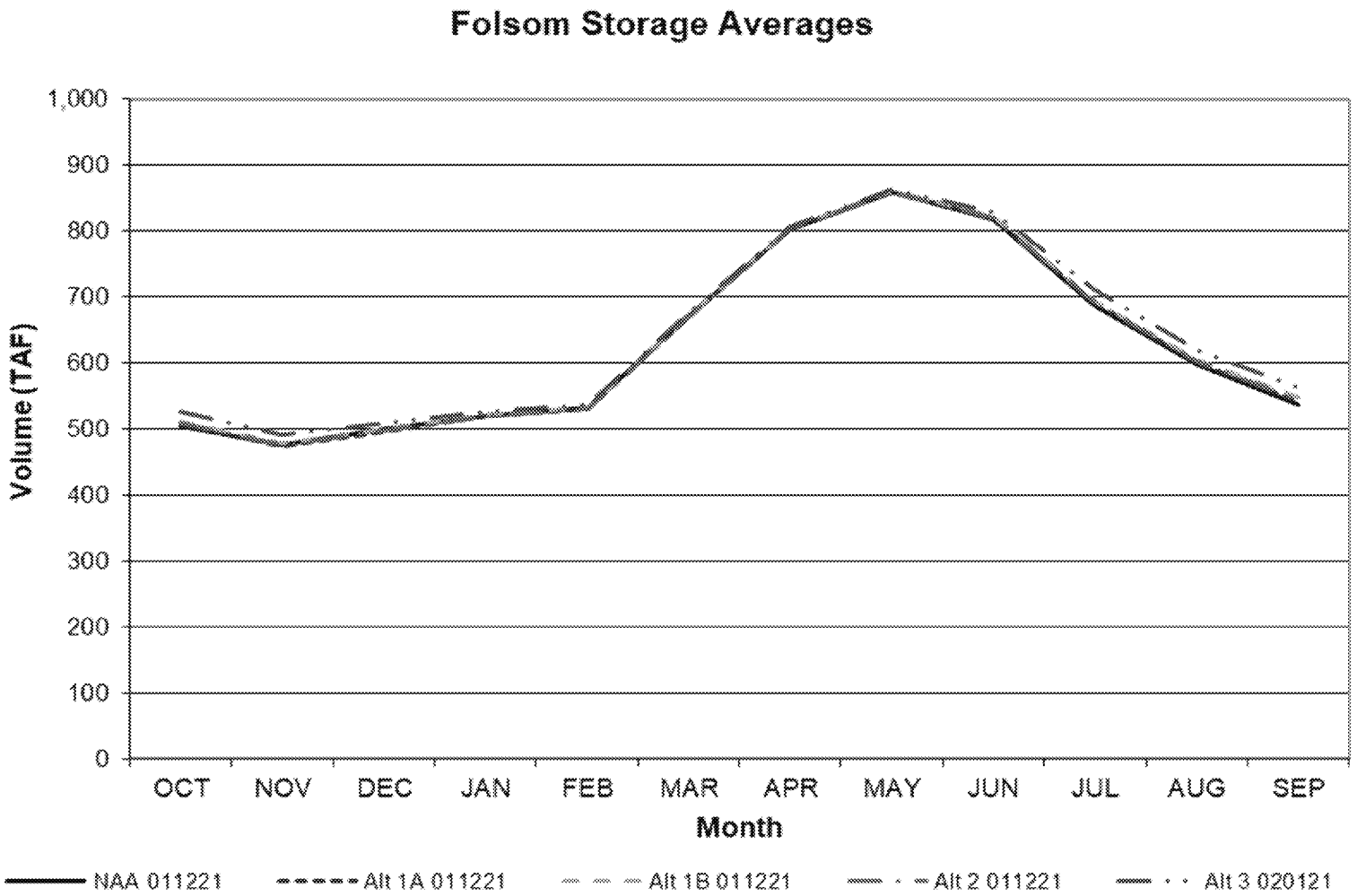
Alternatives Considered

- Alternative 1:
  - 1.5 MAF Reservoir
  - Release pipeline to the Colusa Basin Drain
  - Alternative 1A – No Reclamation investment
  - Alternative 1B – Reclamation investment of up to 7%
    - Reclamation has storage in Sites of up to 91 TAF
- Alternative 2:
  - 1.3 MAF Reservoir
  - Release pipeline to the Sacramento River
    - Partial release to Colusa Basin Drain
  - No Reclamation investment
- Alternative 3:
  - Same facilities as Alternative 1
  - Federal investment up to 25%
    - Reclamation has storage in Sites of up to 345 TAF

Alternatives Considered

- All alternatives include modeling for a possible exchange with Reclamation out of Shasta
- Environmental document describes the potential for exchanges with Folsom, but this exchange is not modeled
- Changes on the American River are generally due to changes in the way Reclamation operates the CVP with Sites

Results – Folsom Lake



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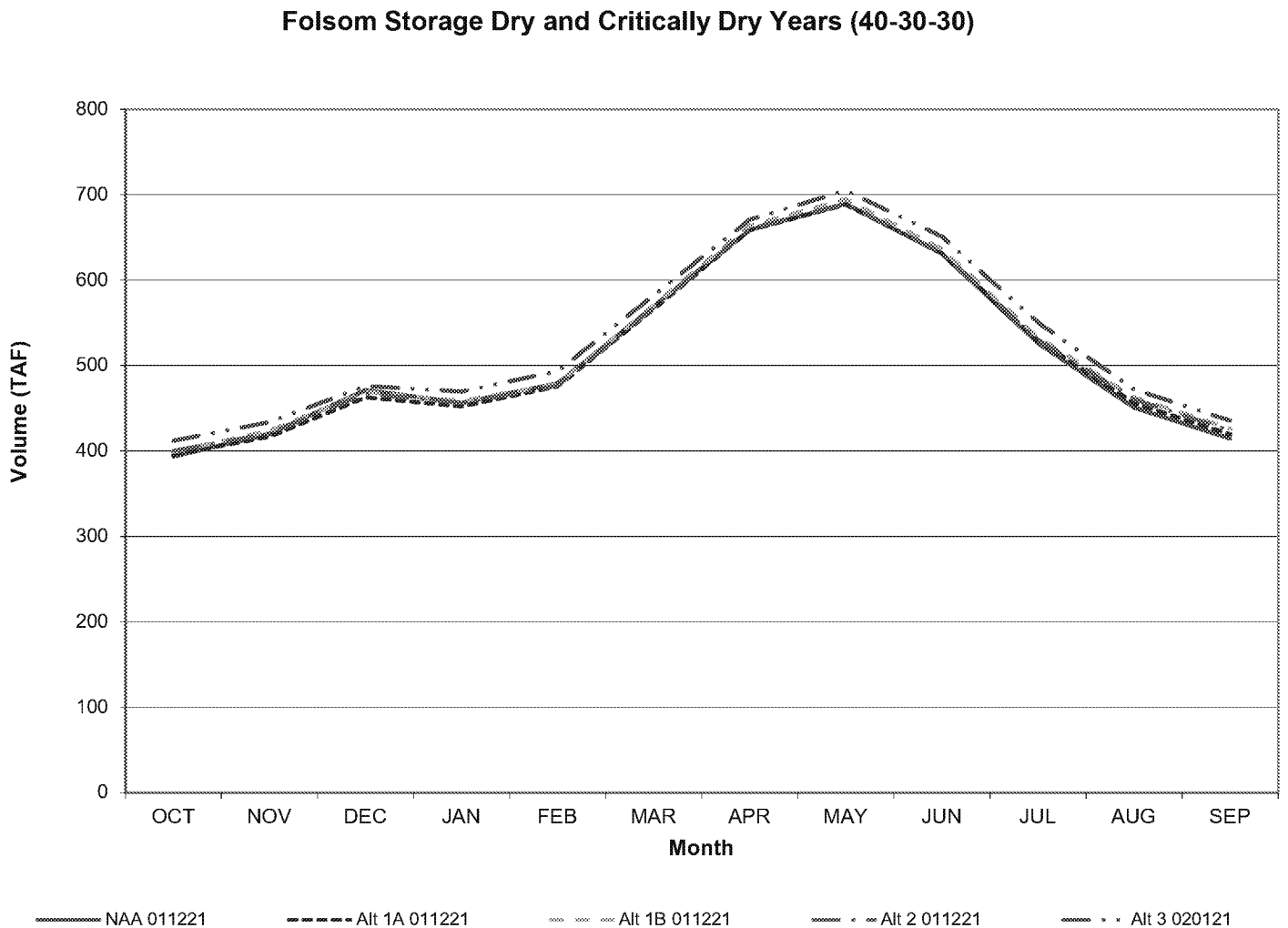
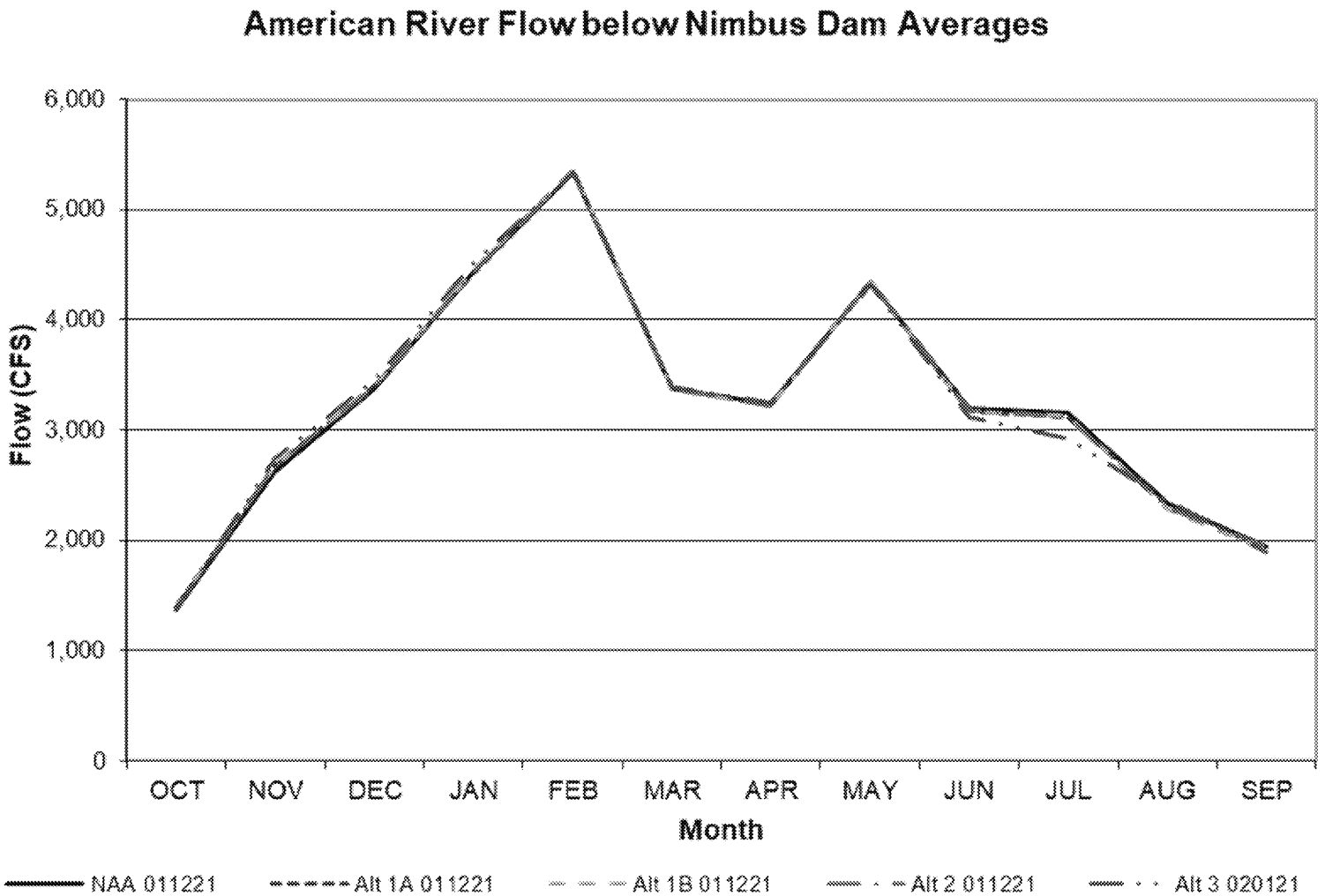


Results – American River Flows



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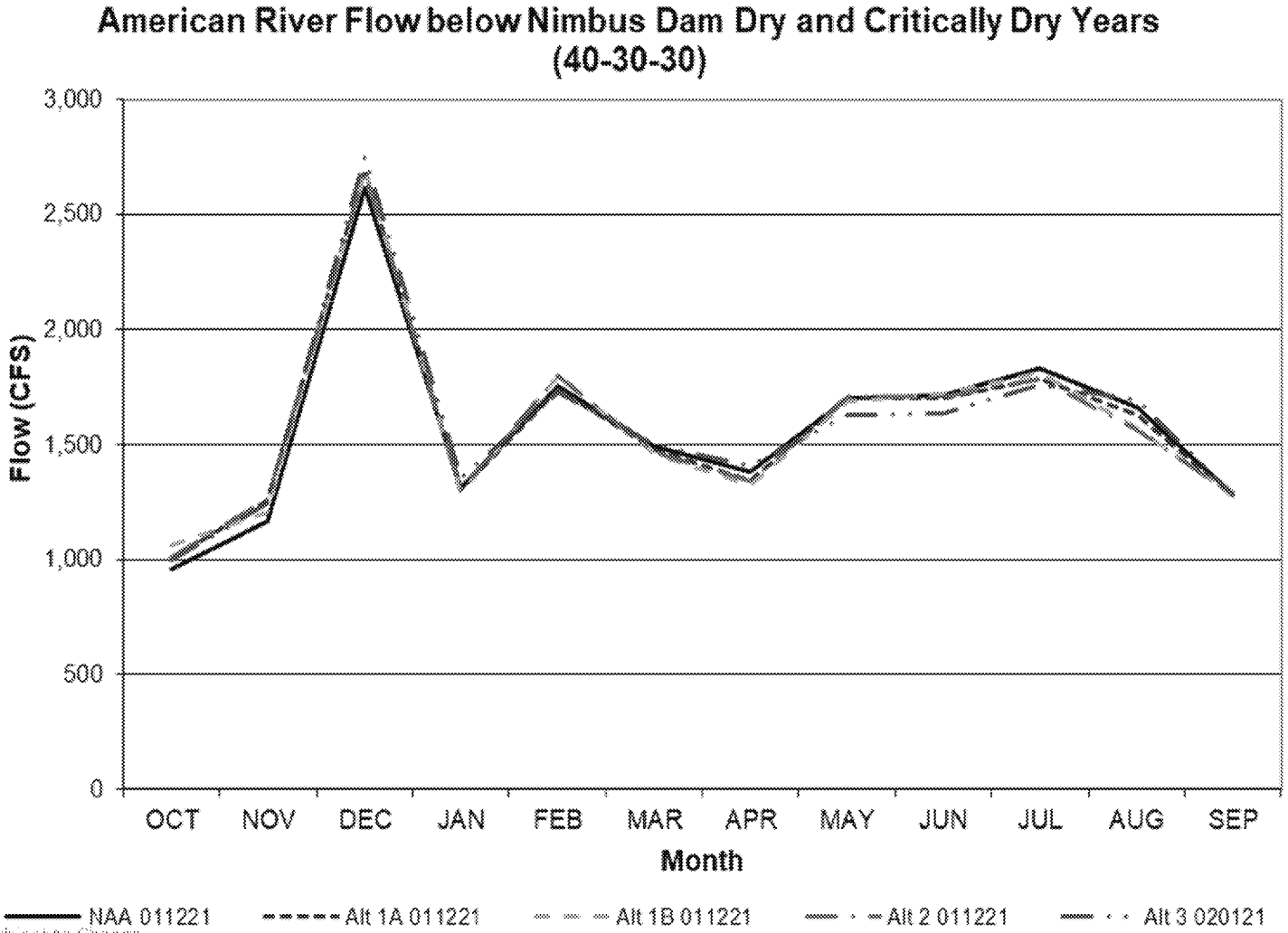

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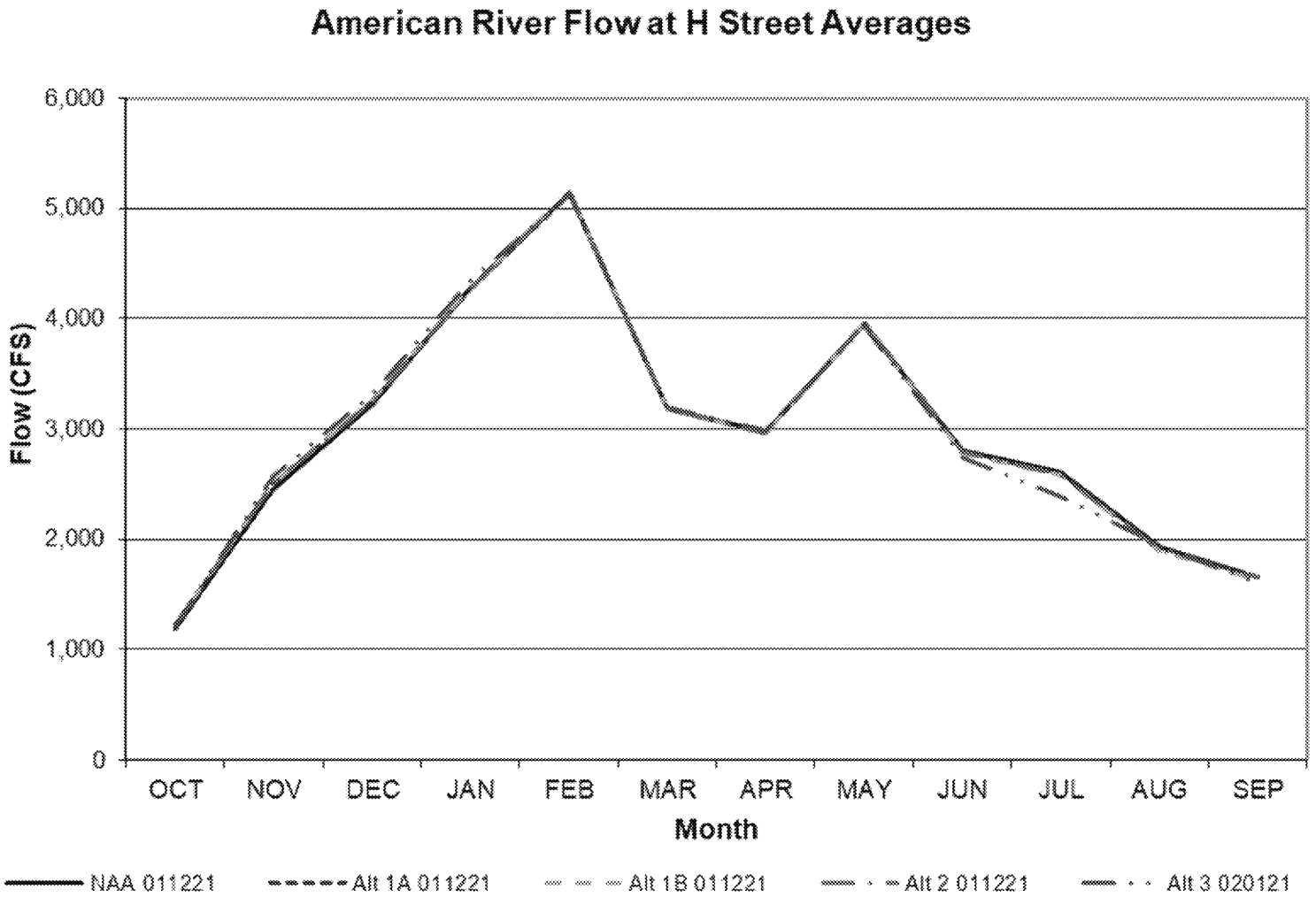

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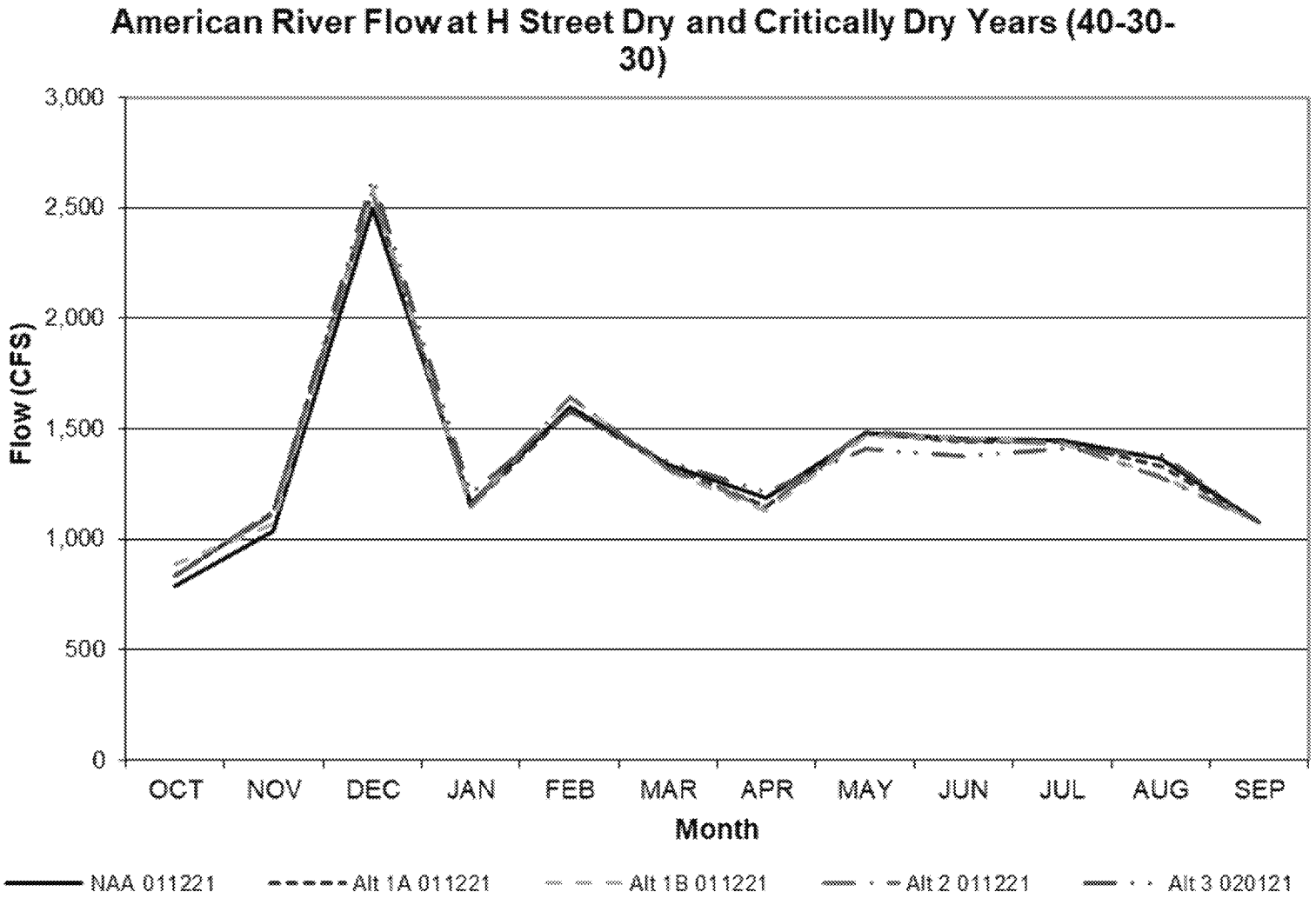

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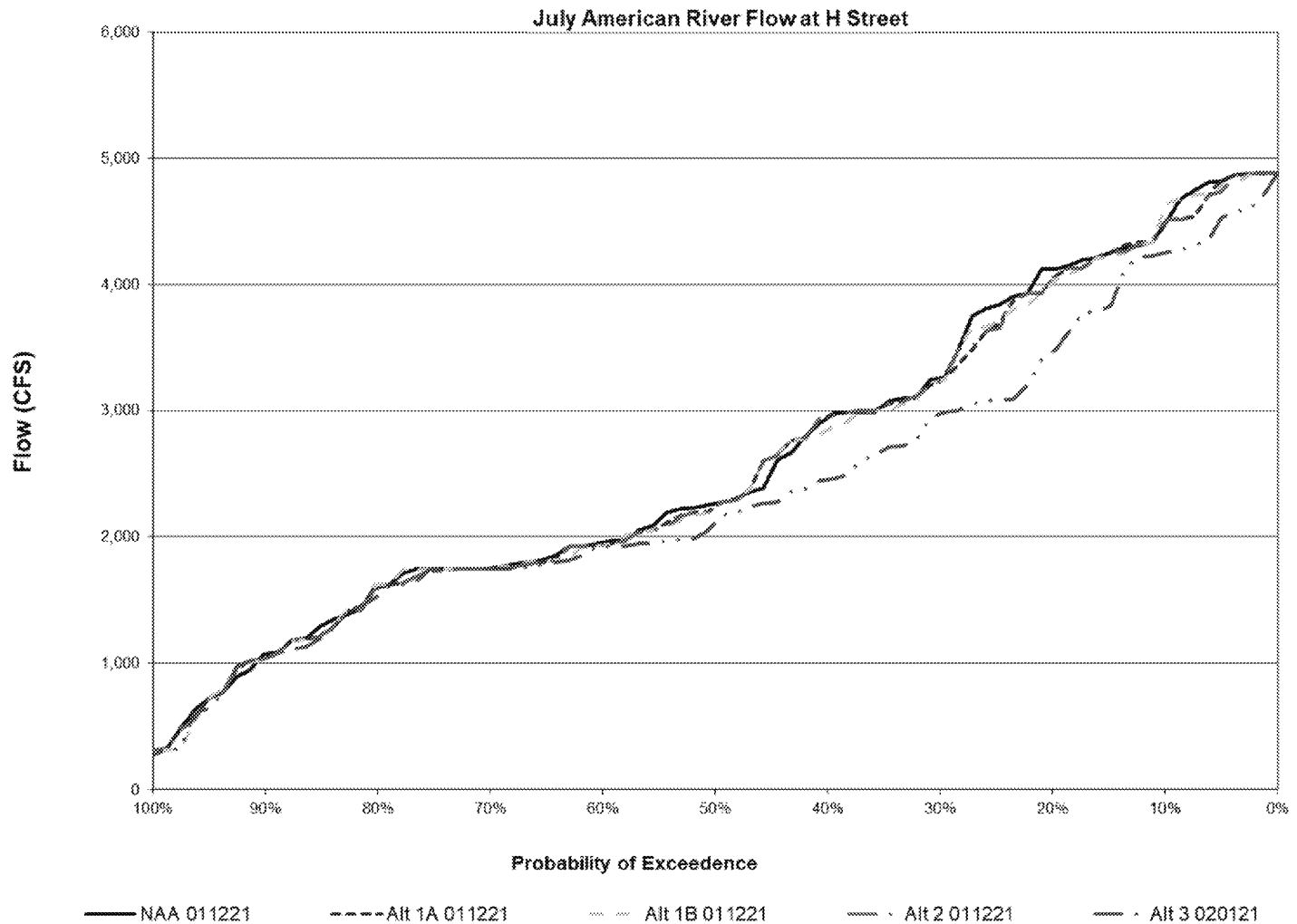
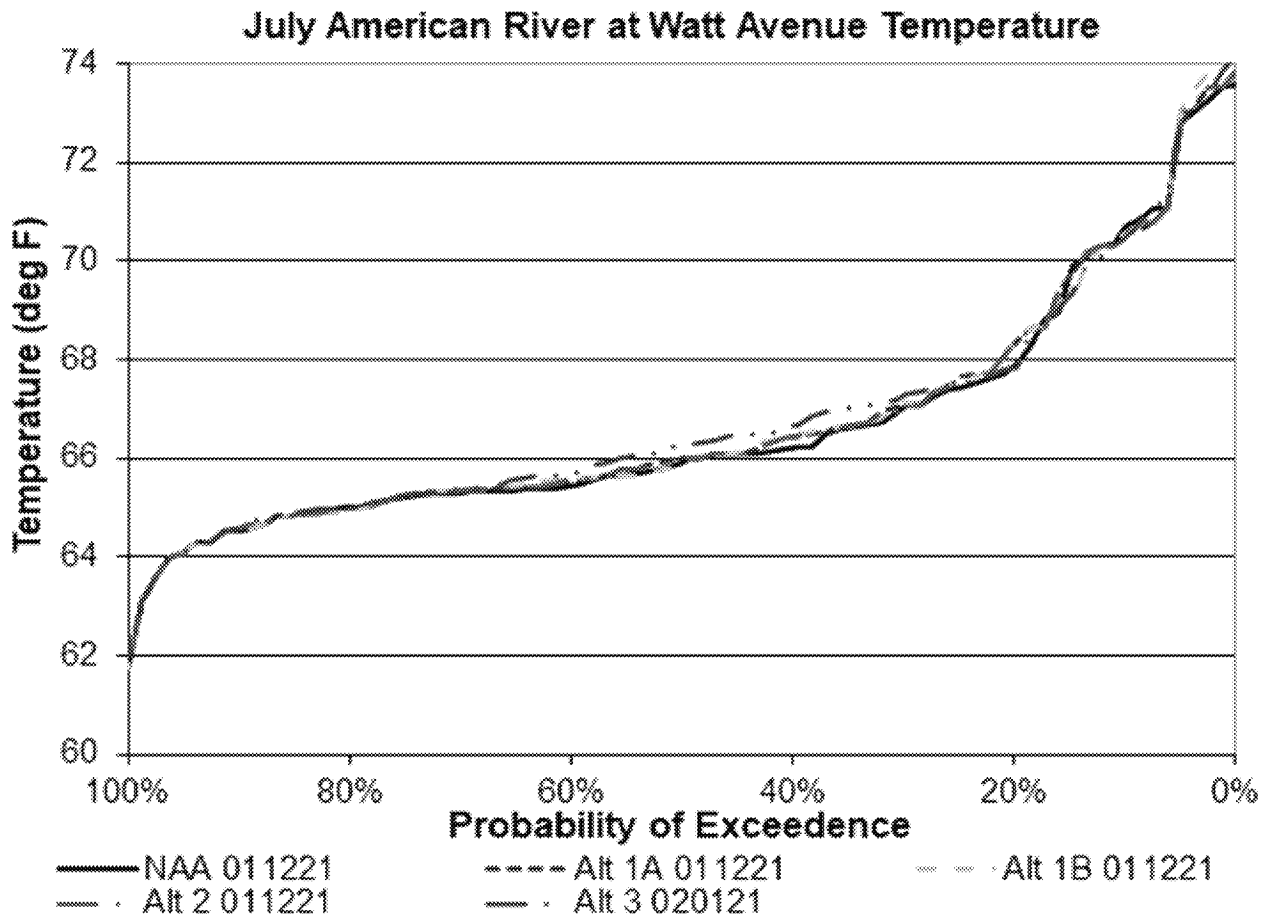
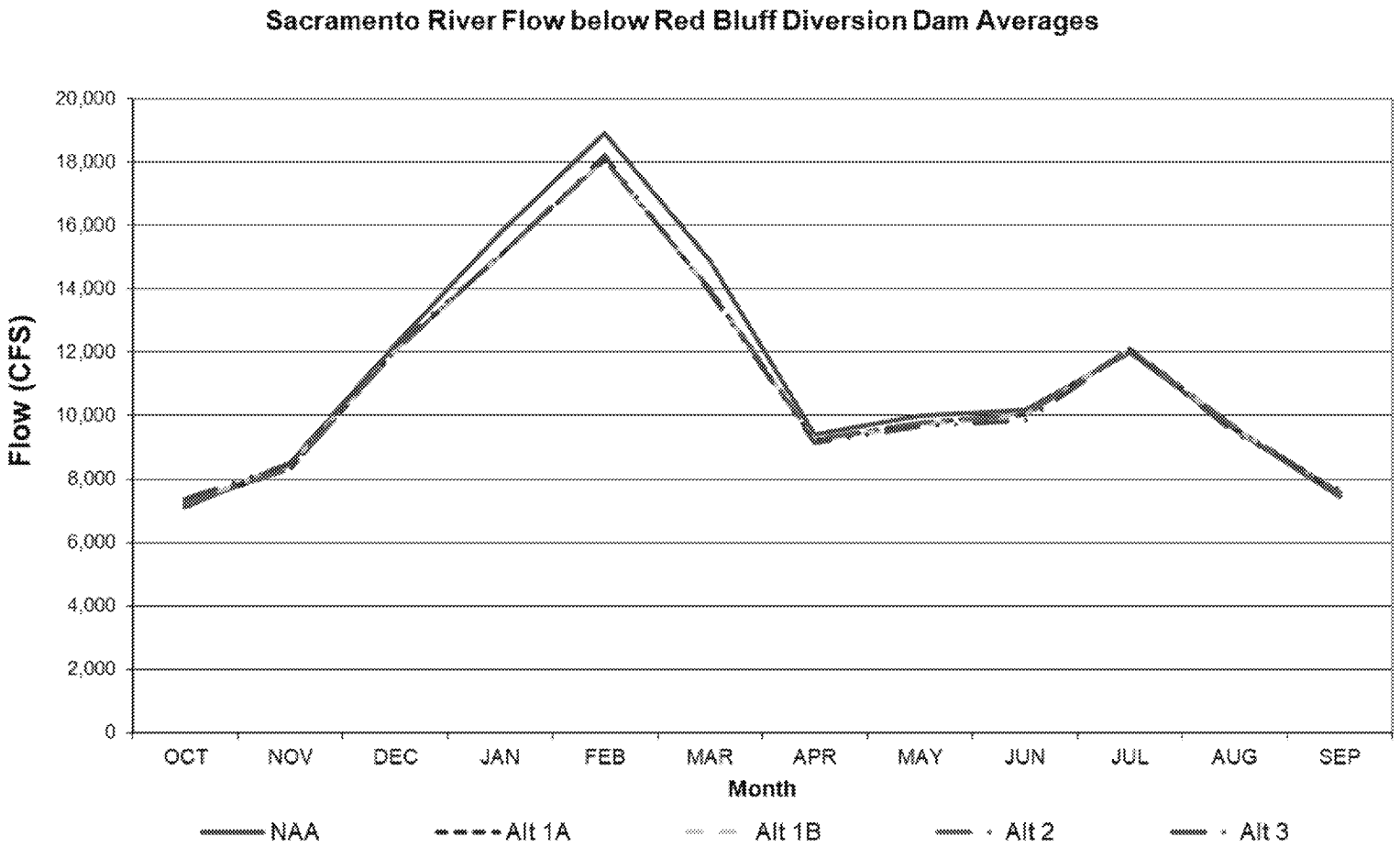


Results – American River Temperature



Results – Sacramento River Flows



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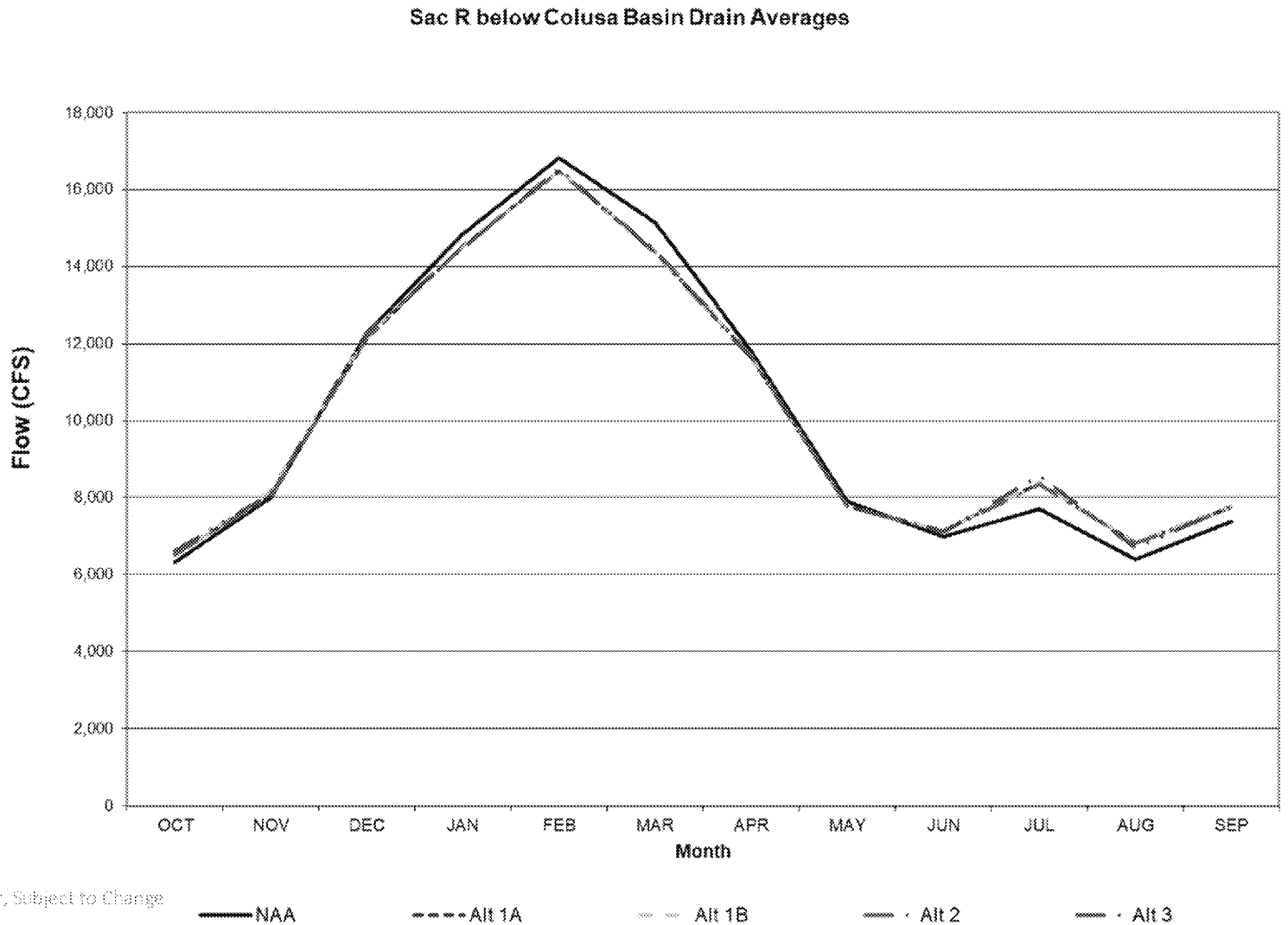

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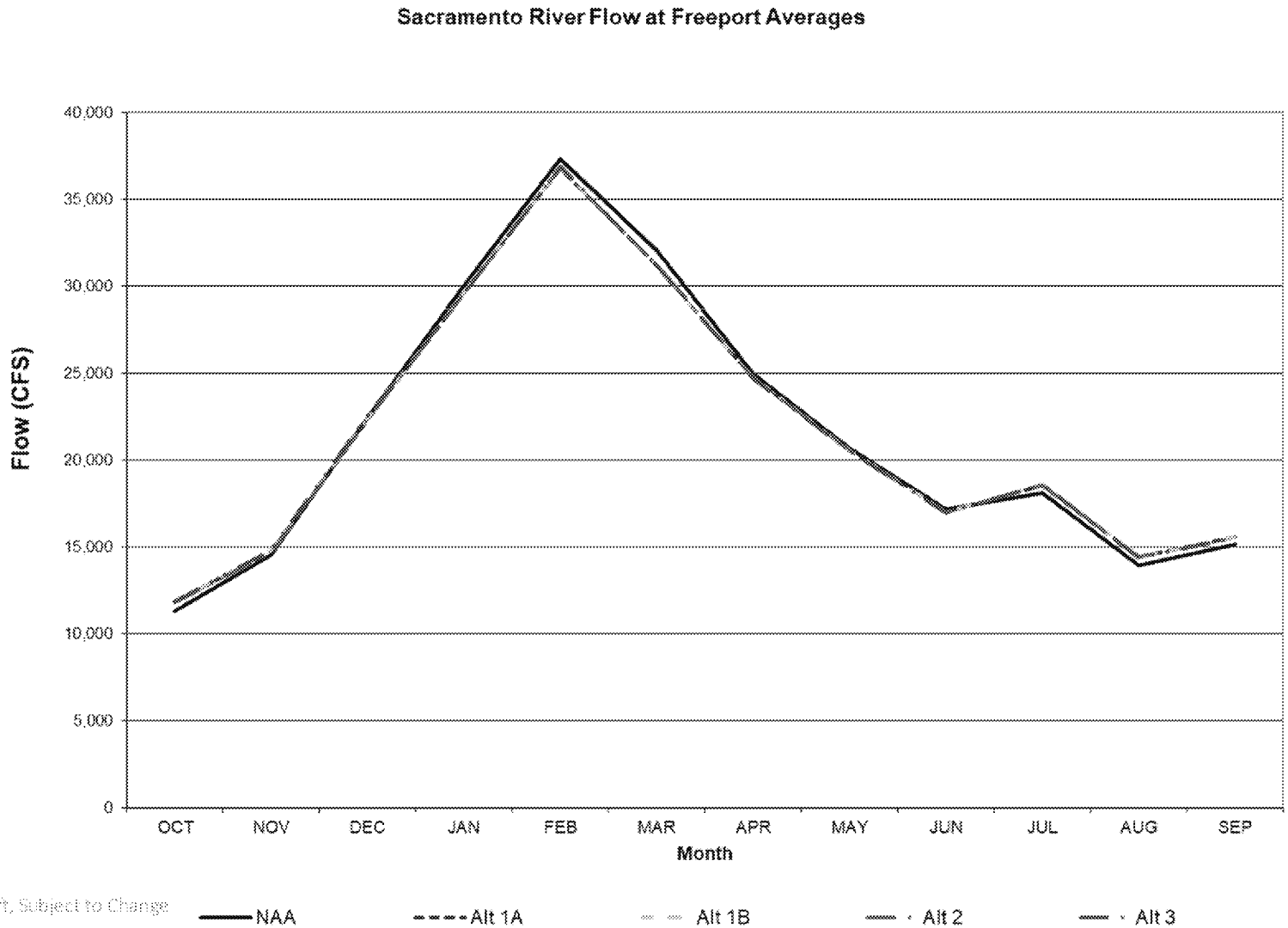

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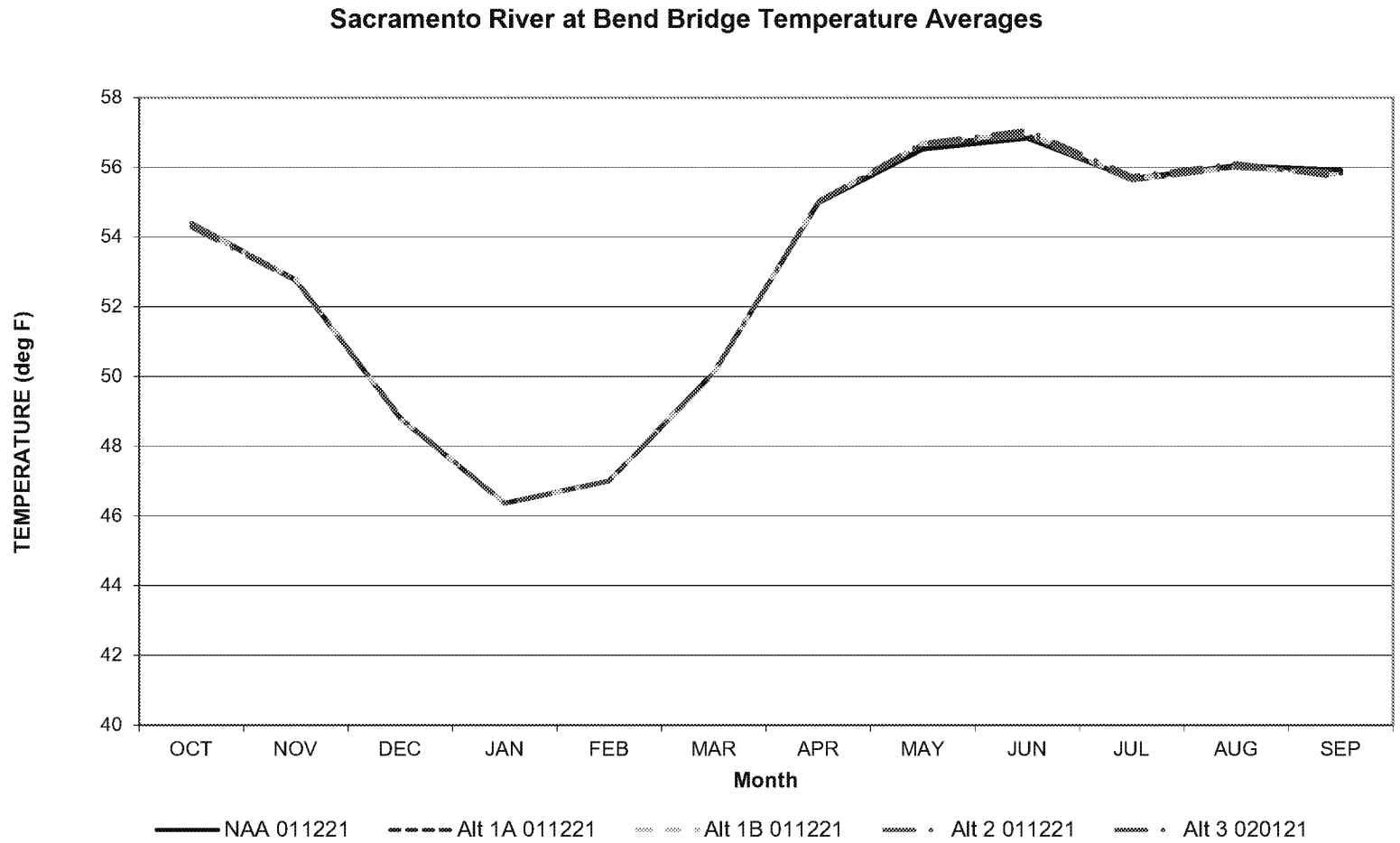
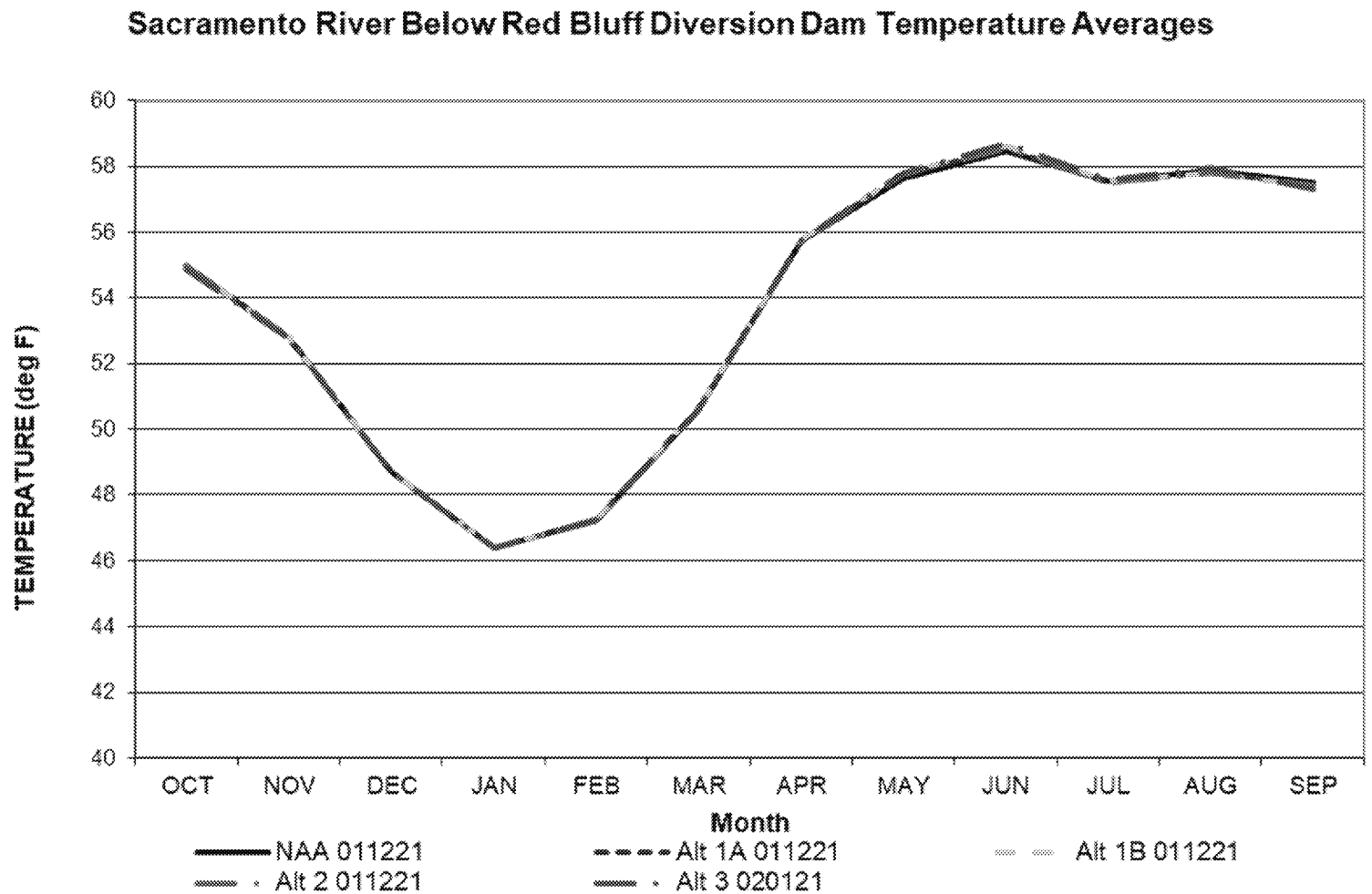


Results – Sacramento River Temperature




Sites

Sites Reservoir Project

American River Modeling

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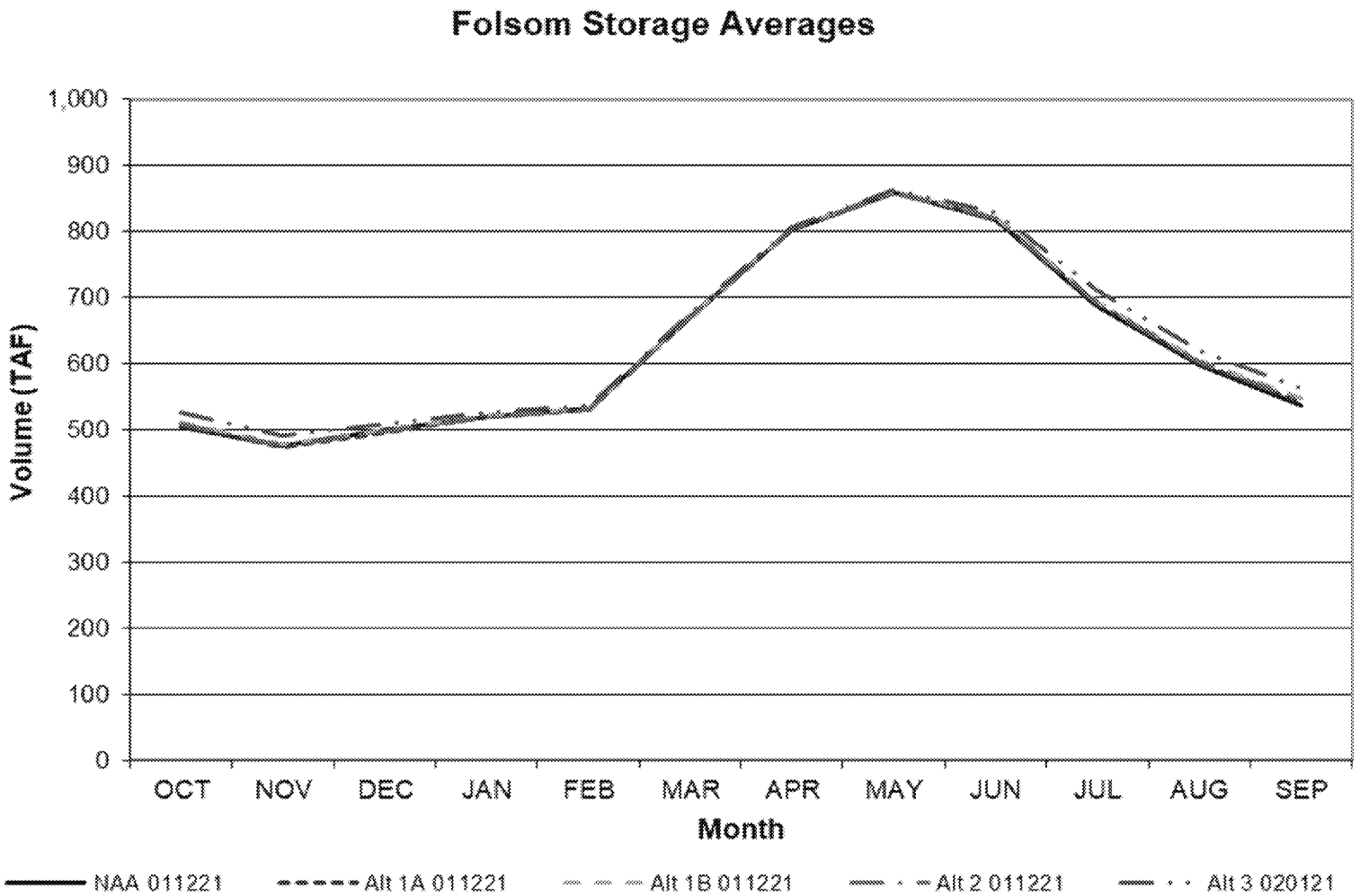

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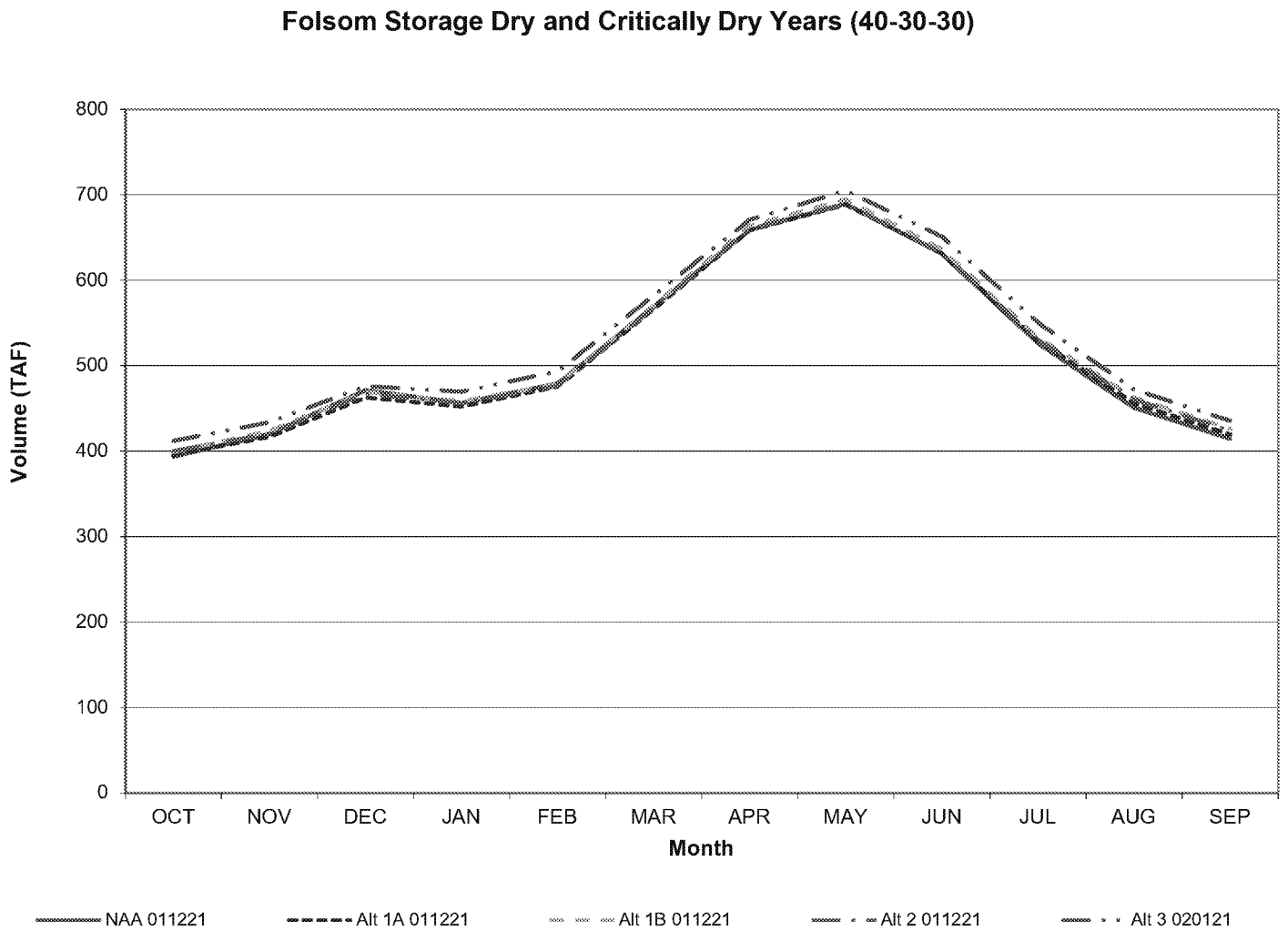
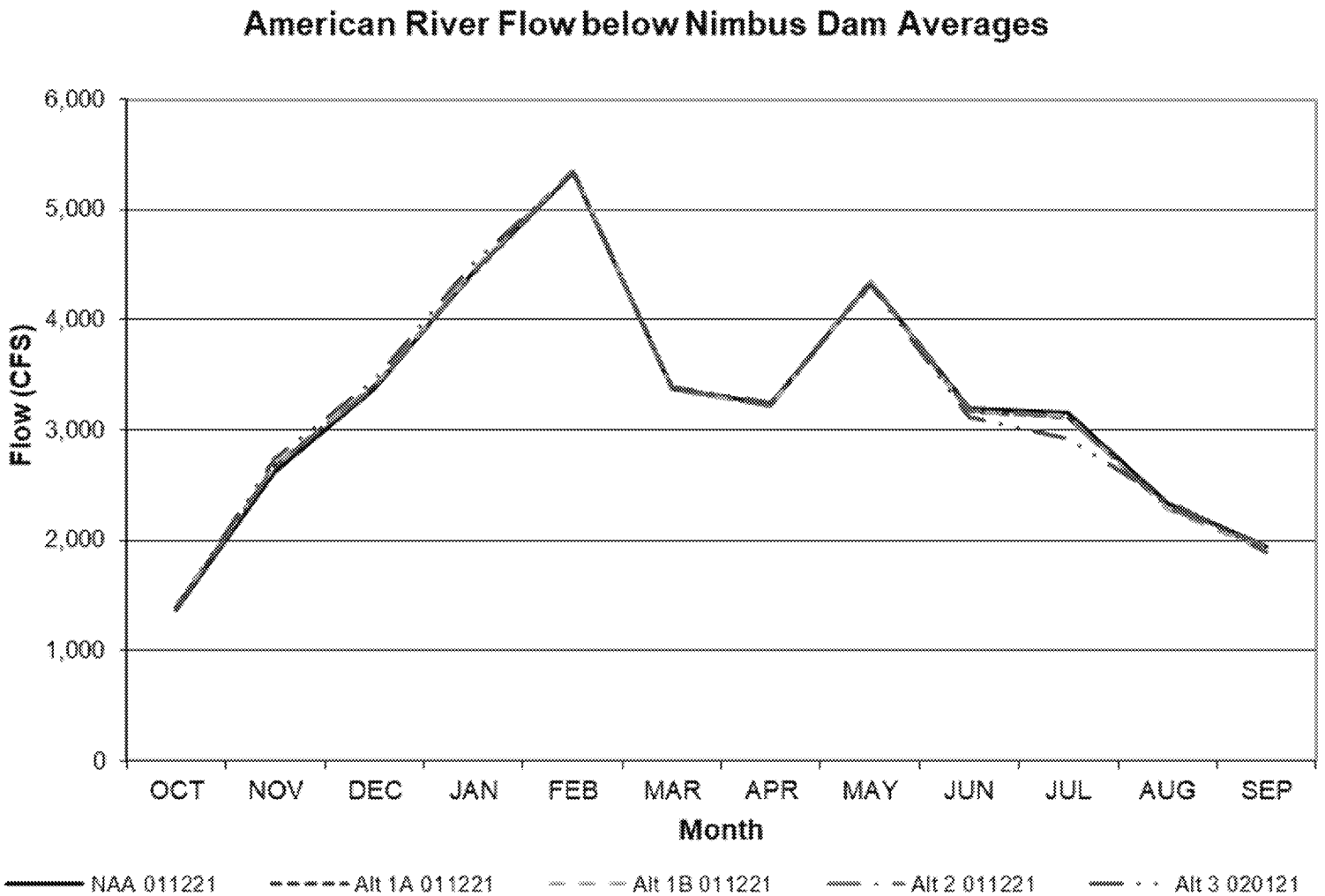


Results – American River Flows



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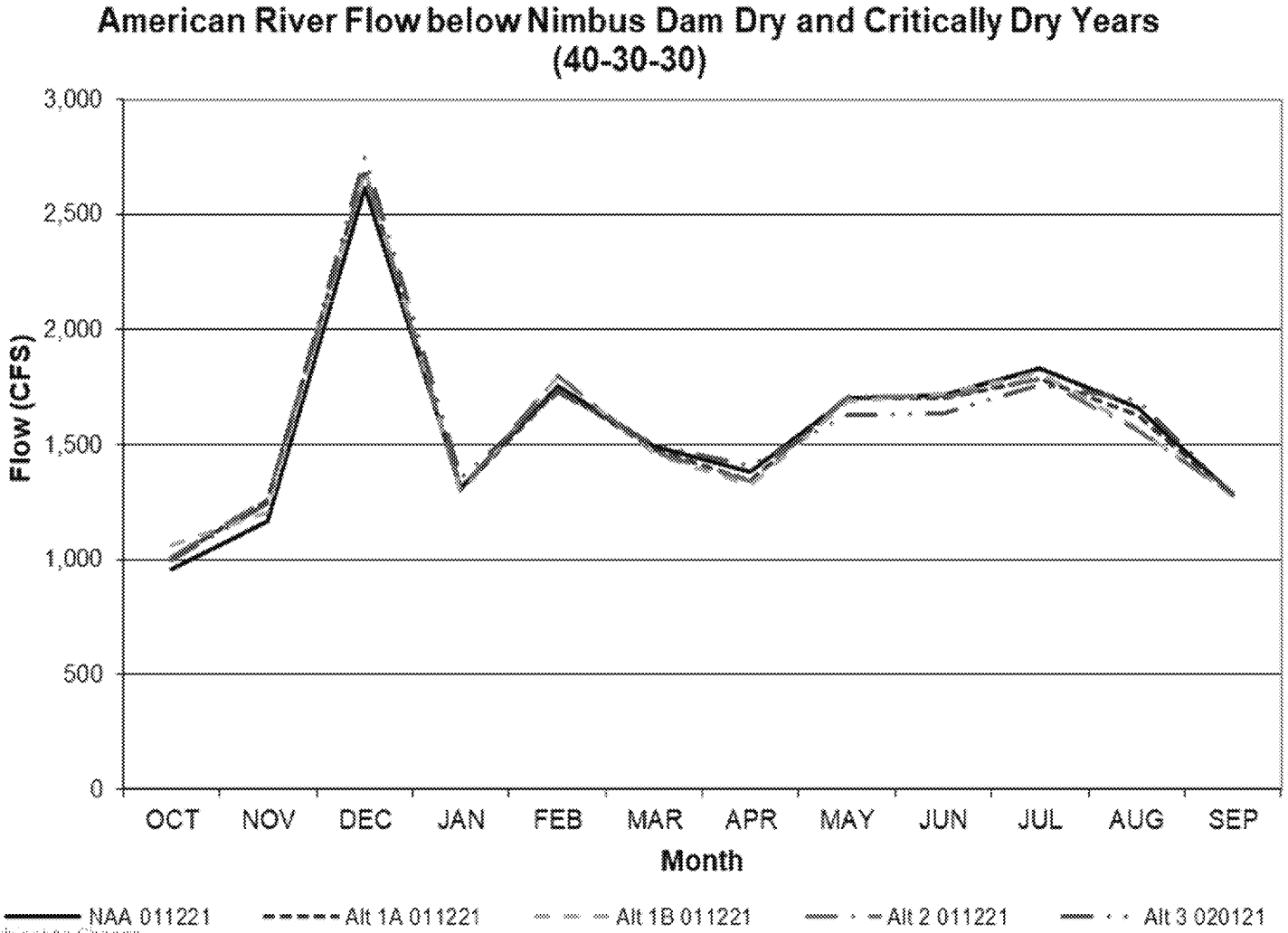

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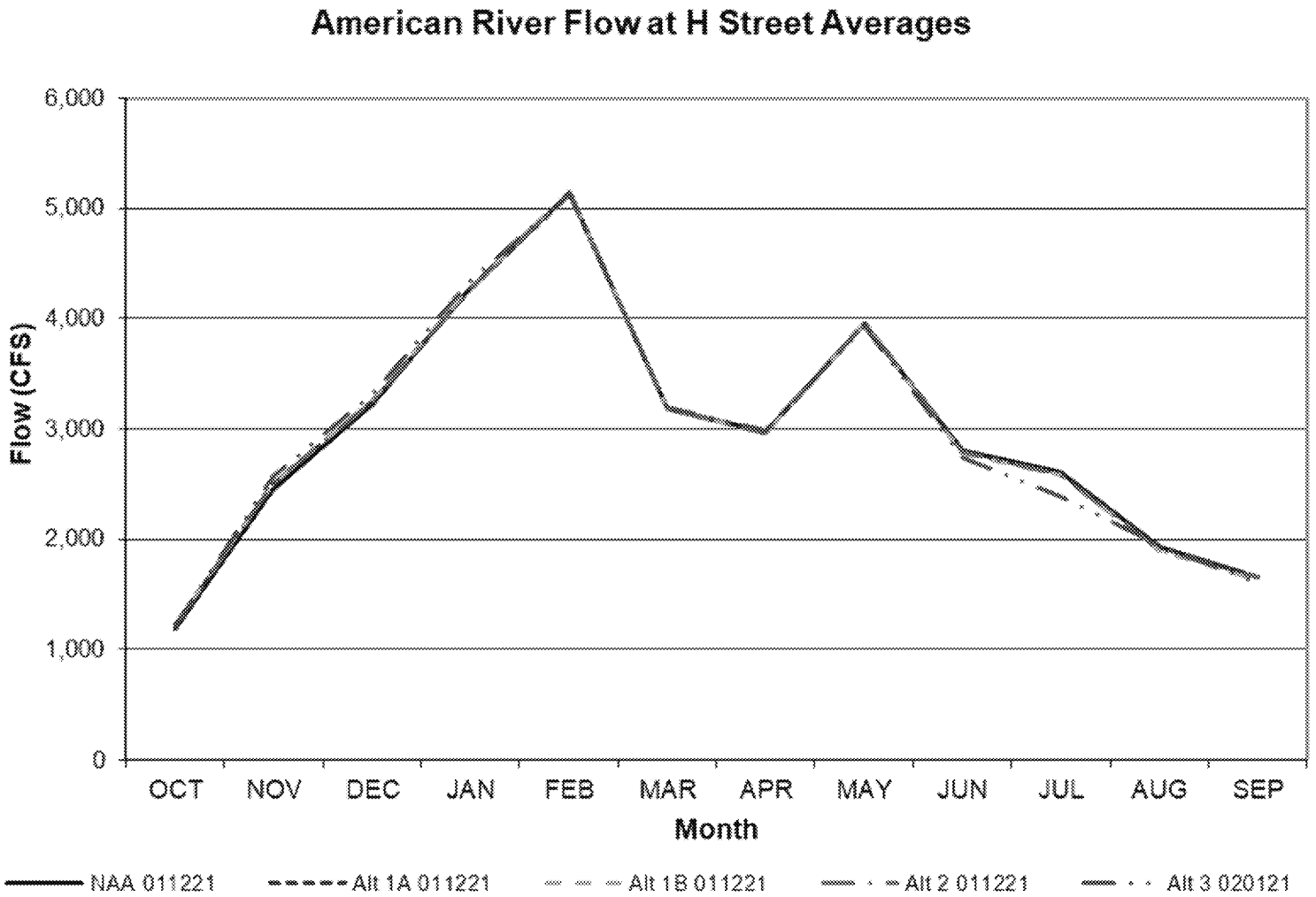

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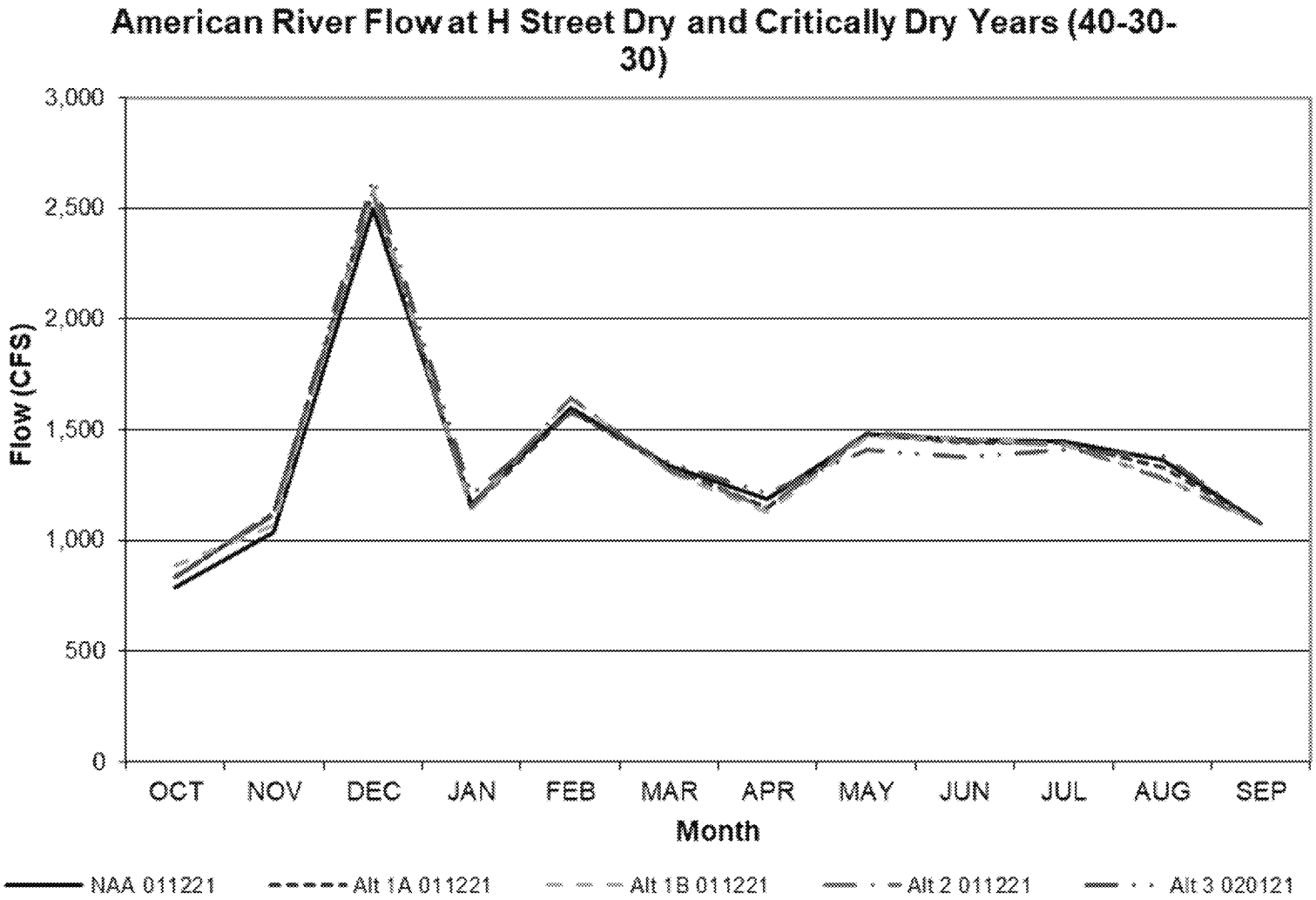
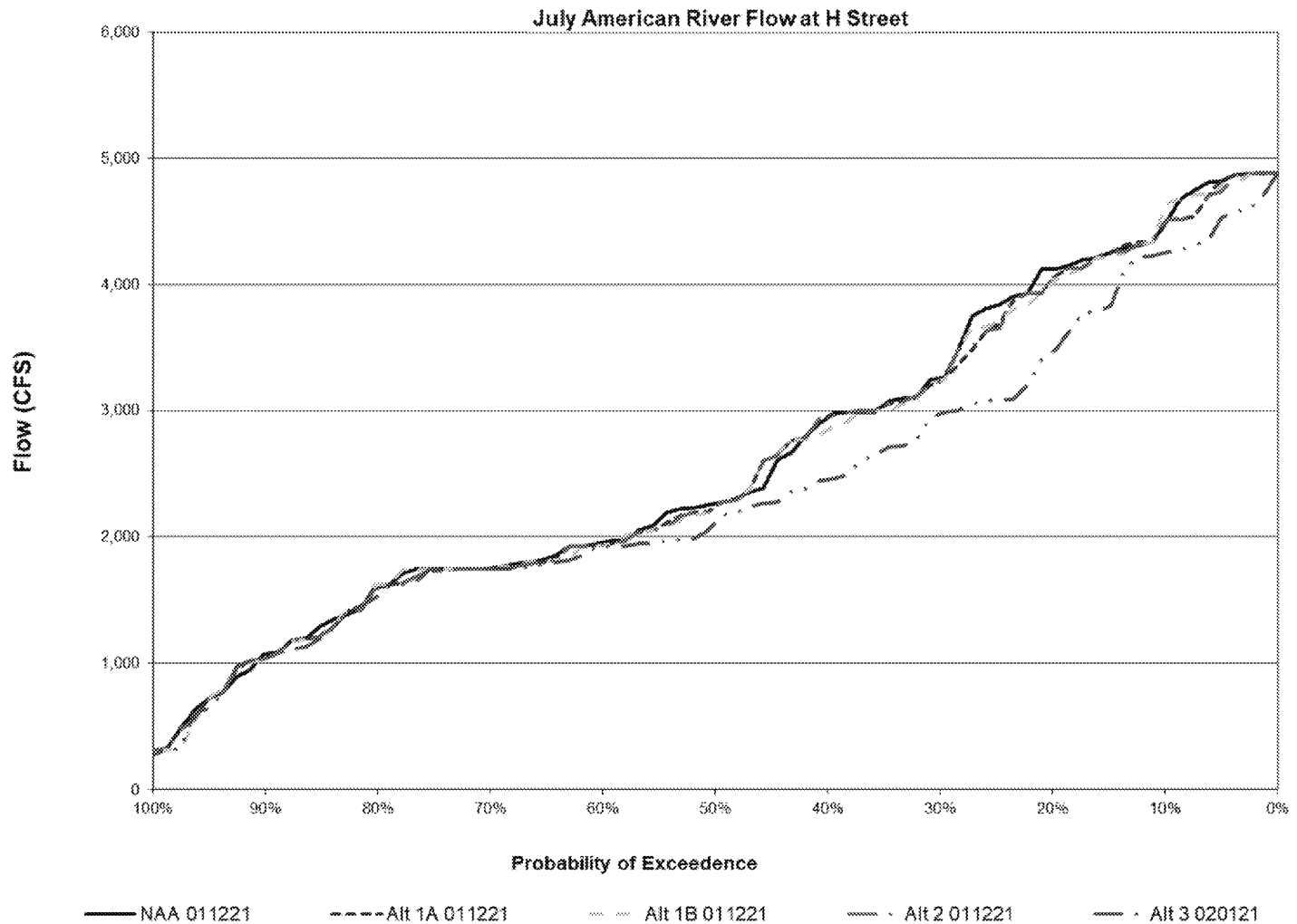
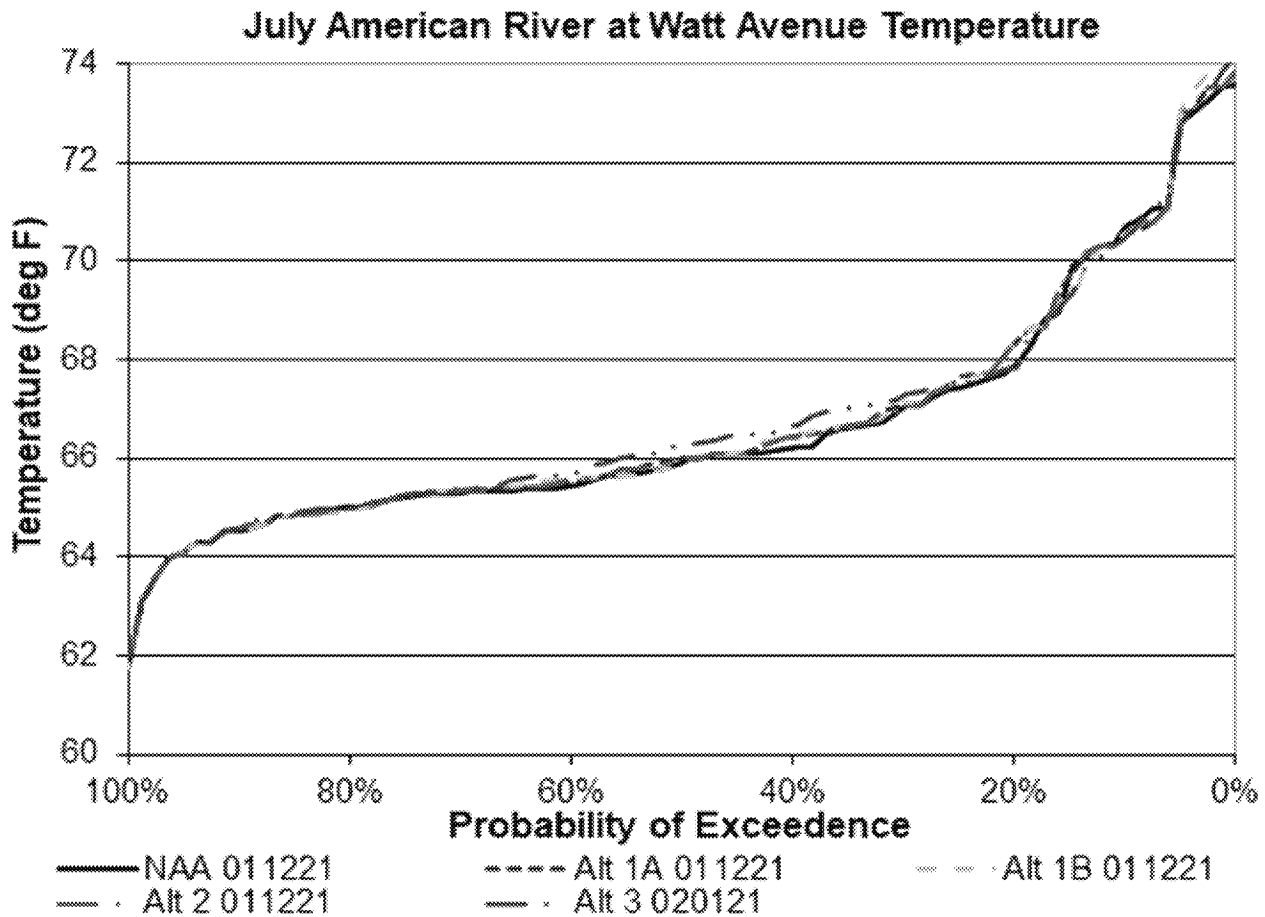


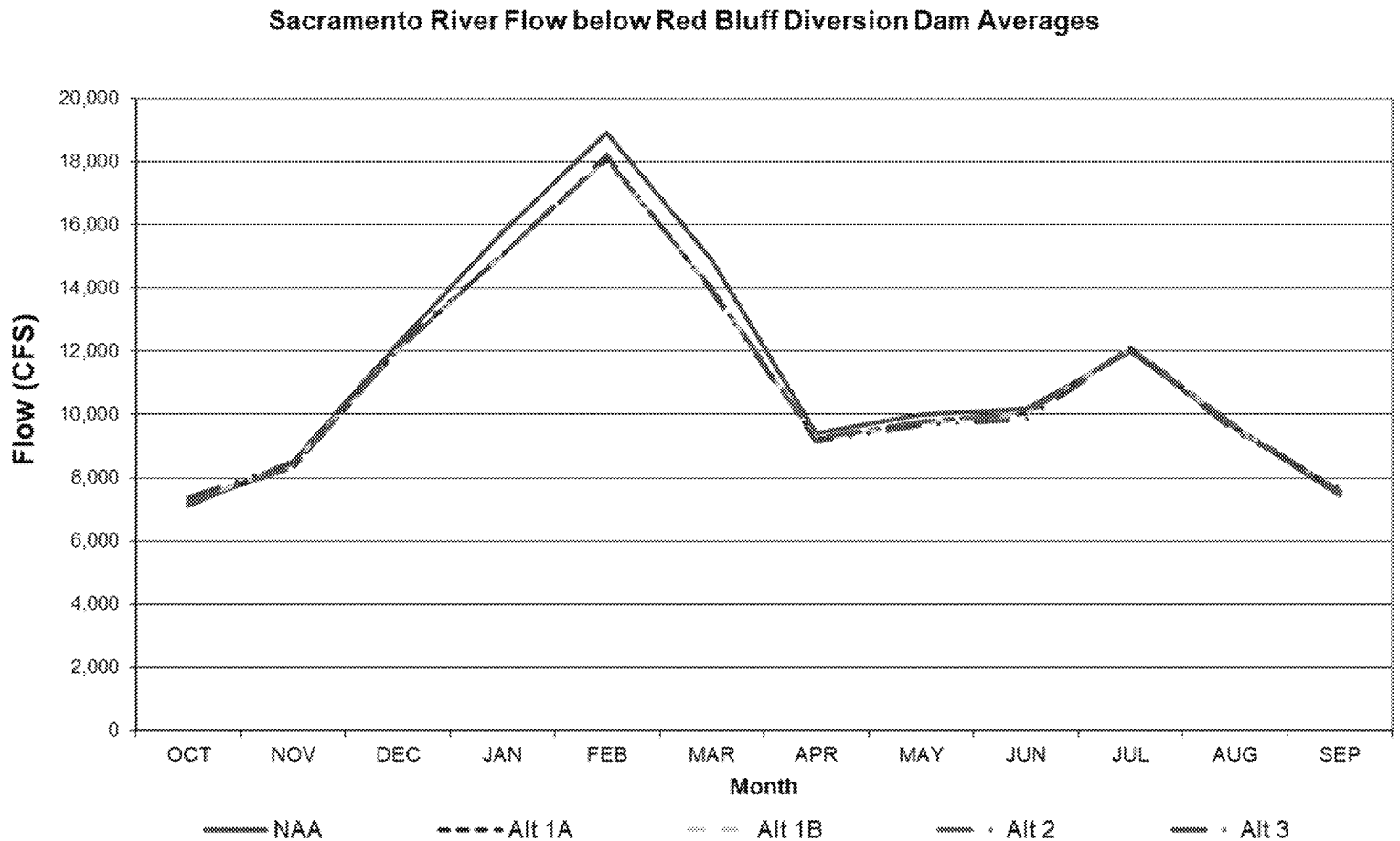
Results – American River Flows



Results – American River Temperature



Results – Sacramento River Flows



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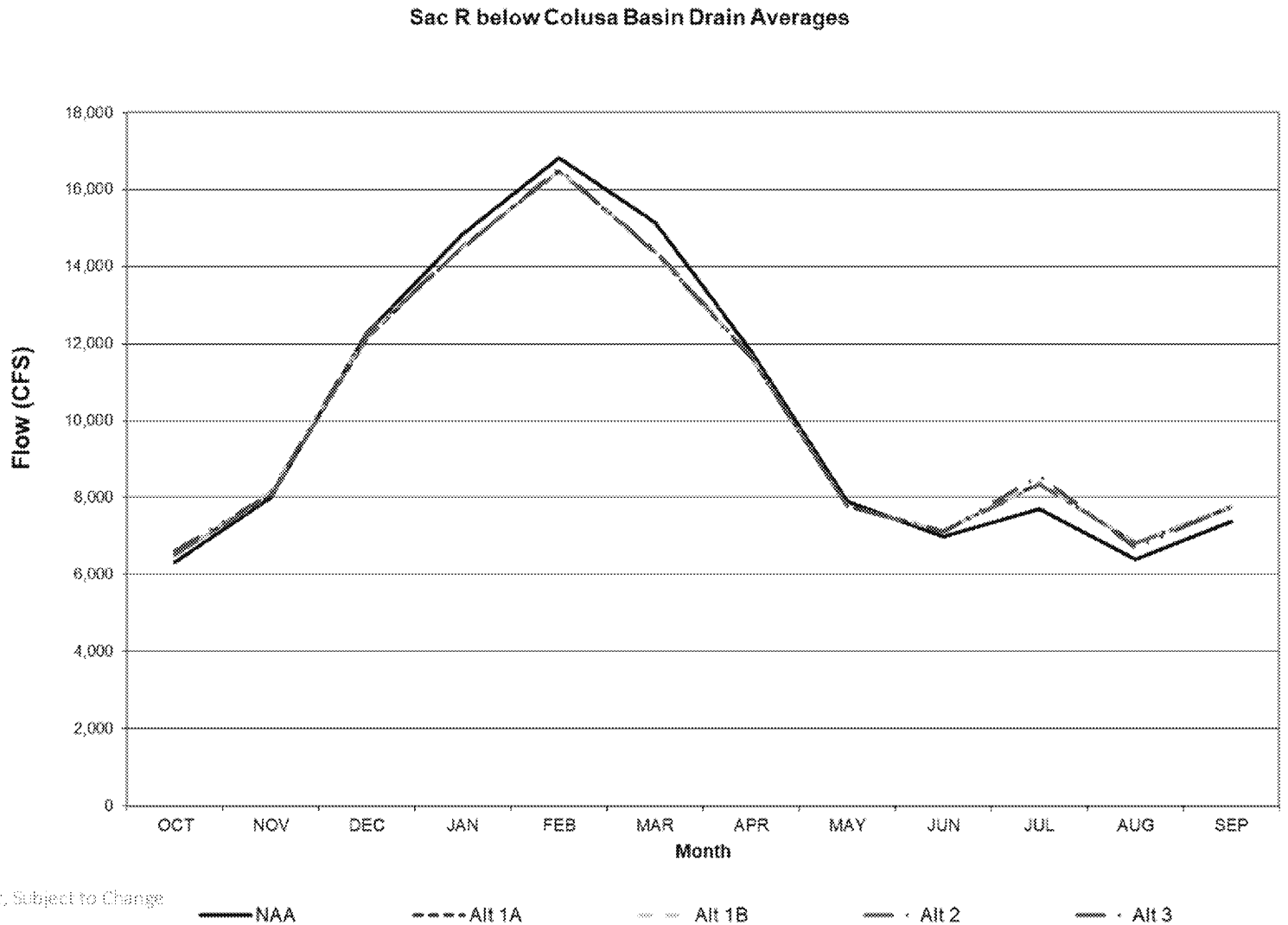
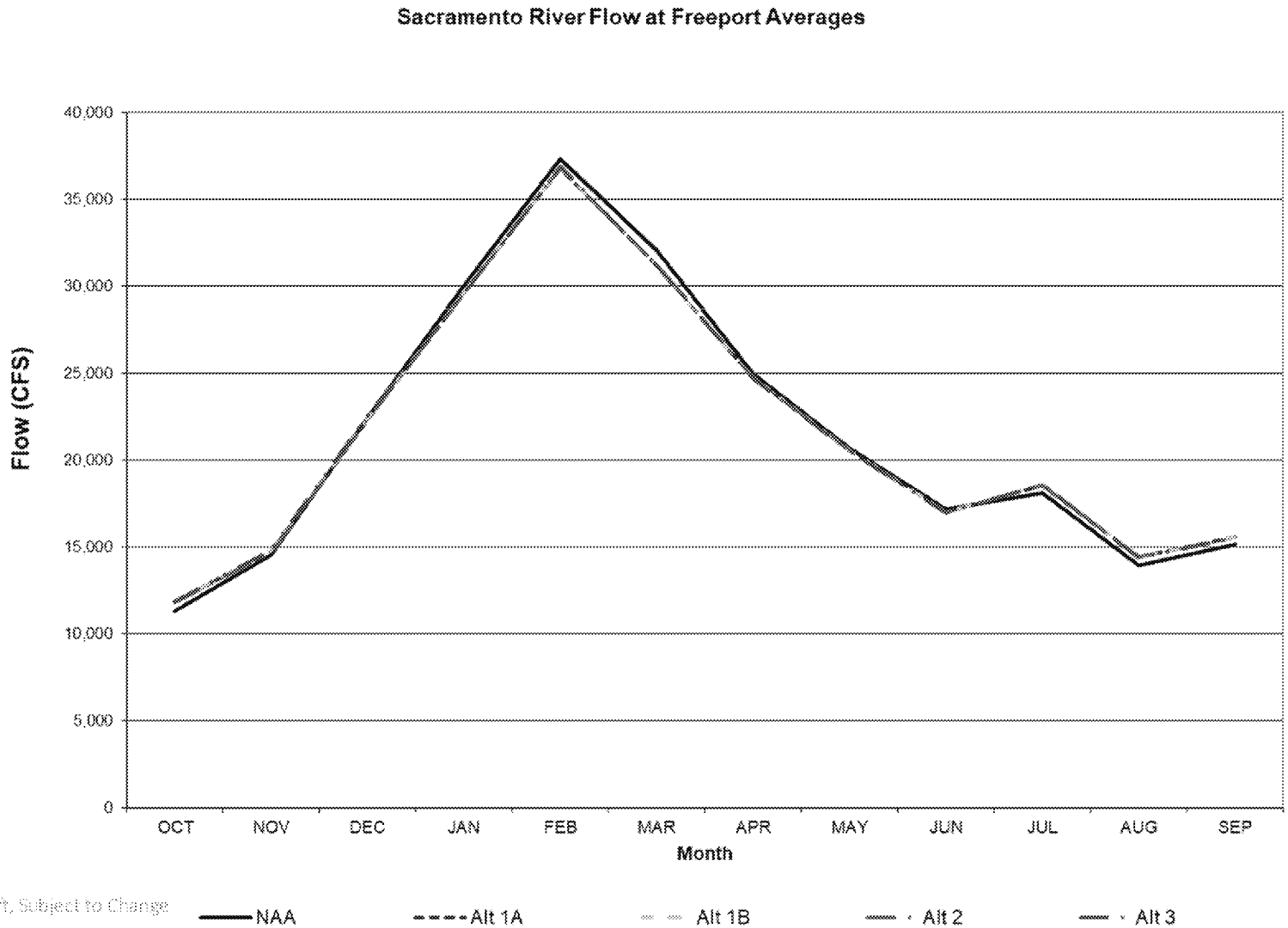
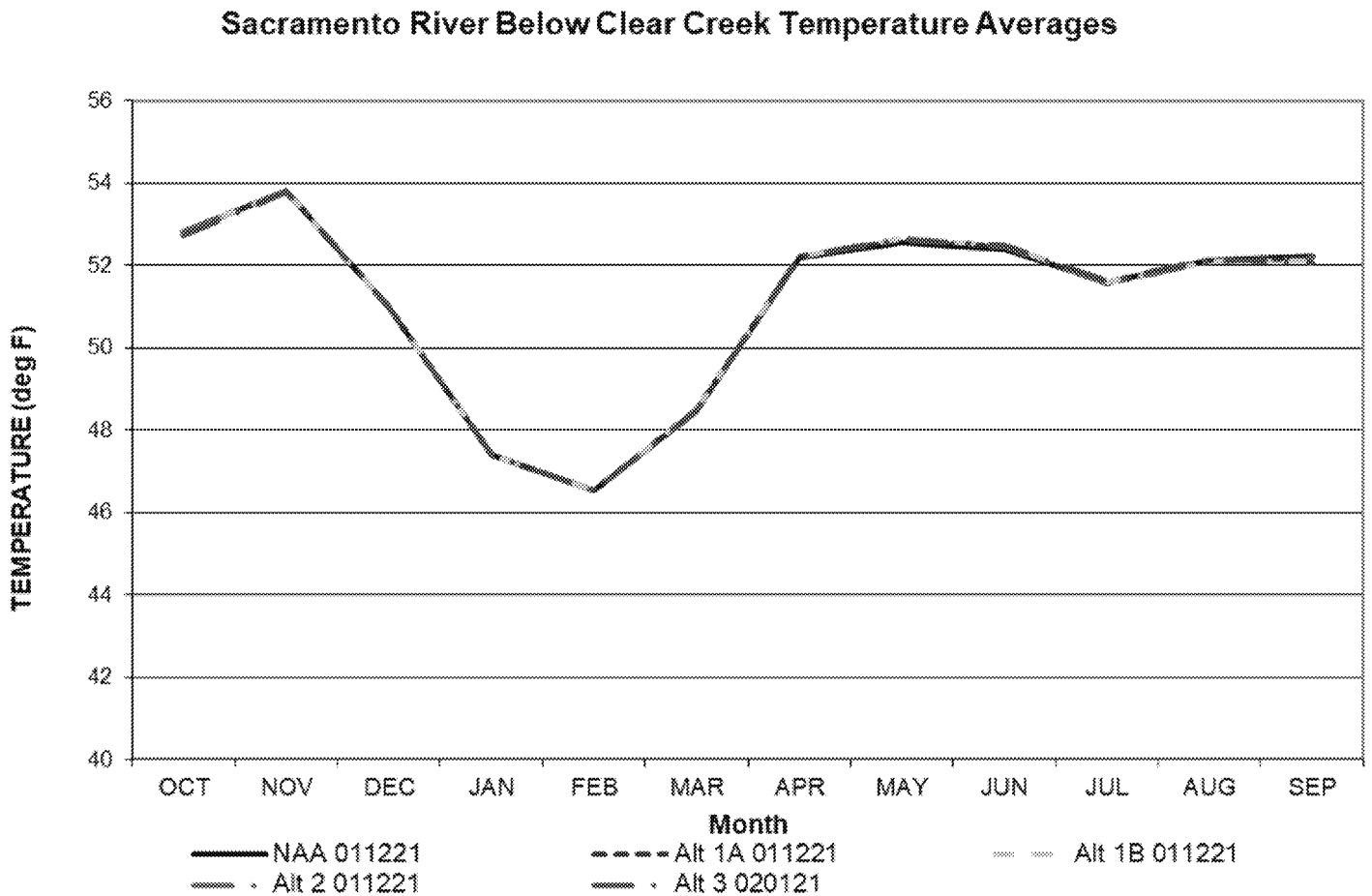


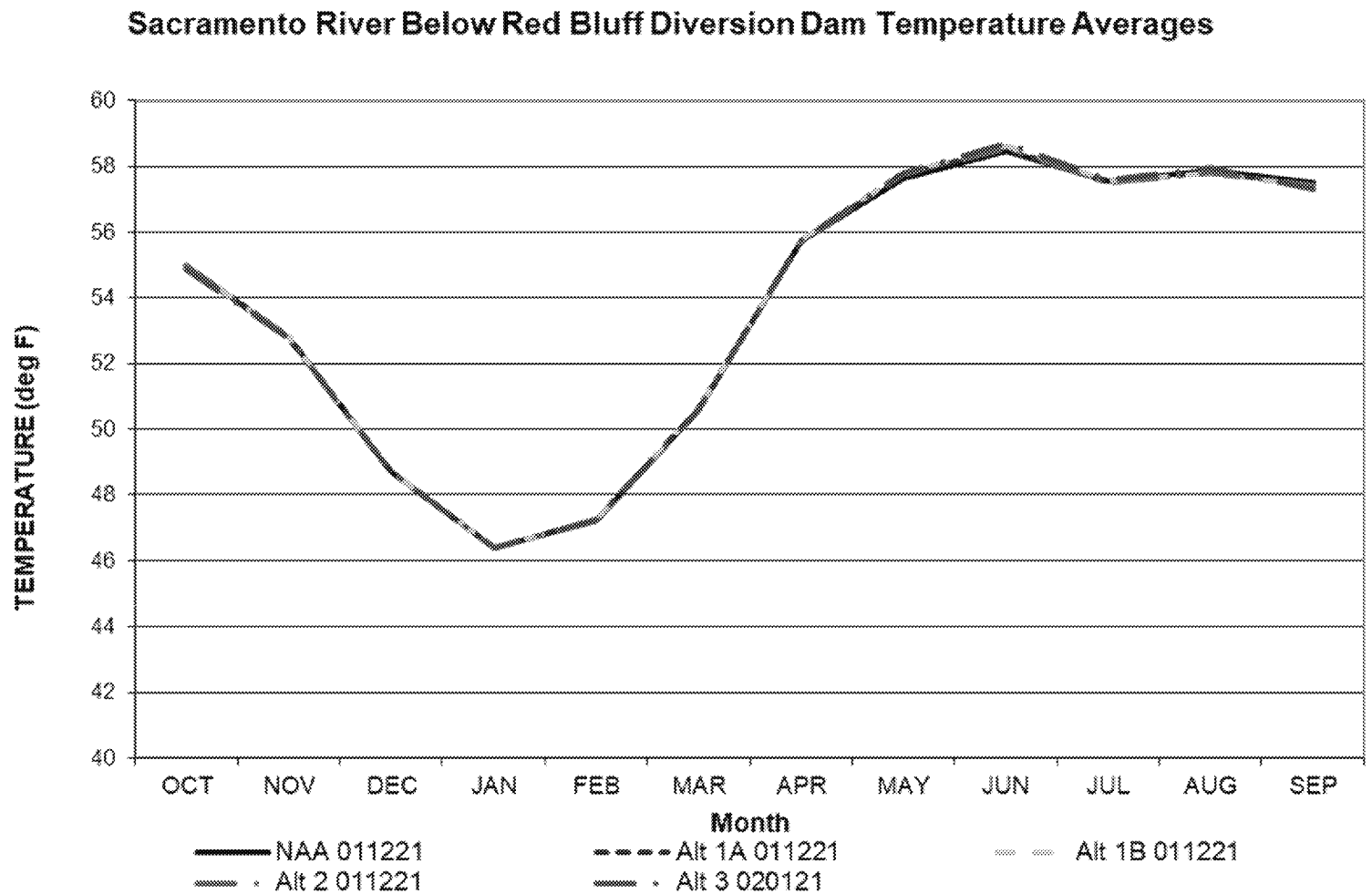
Results – Sacramento River Flows



Results – Sacramento River Temperature



Results – Sacramento River Temperature




Sites

From: Davis-Fadtke, Kristal@Wildlife [Kristal.Davis-Fadtke@wildlife.ca.gov]
Sent: 5/26/2021 12:02:25 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Fisher, Linda [Linda.Fisher@hdrinc.com]; Young, Amy@DWR [Amy.Young@water.ca.gov]; Montgomery, Amanda@Waterboards [Amanda.Montgomery@waterboards.ca.gov]; Okita, David@DWR [David.Okita@water.ca.gov]; Kearns, Zachary@Wildlife [Zachary.Kearns@Wildlife.ca.gov]; Torres, Juan@Wildlife [Juan.Torres@wildlife.ca.gov]; Uttley, Paige@Wildlife [Paige.Uttley@wildlife.ca.gov]; Barker, Kelley@Wildlife [Kelley.Barker@wildlife.ca.gov]; Purdy, Colin@Wildlife [Colin.Purdy@wildlife.ca.gov]; Huneycutt, Andrew@Wildlife [Andrew.Huneycutt@Wildlife.ca.gov]; Williams, Jonathan@Wildlife [Jonathan.Williams@wildlife.ca.gov]; Cooke, Robert@DWR [Robert.Cooke@water.ca.gov]; Biondi, Oscar@Waterboards [Oscar.Biondi@waterboards.ca.gov]
CC: Laurie Warner Herson [laurie.warner.herson@phenixenv.com]; Heydinger, Erin [erin.heydinger@hdrinc.com]; Linda Fisher (linda.fisher@hdrinc.com) [linda.fisher@hdrinc.com]
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

Hi Ali,

Thank you for providing the aquatic resource appendices a little earlier. We will provide comments on those appendices with comments on the associated chapters.

Kristal

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Wednesday, May 26, 2021 11:05 AM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

CEQA Responsible Agencies – Thank you for your comments on the "Group 1" Chapters. We now have Group 2 Chapters ready for your review. Below are the Group 2 Chapters along with the Responsible Agencies identified for review. Please let me know if you would like to review additional chapters not currently identified for your organization. Comments are due June 14.

6 – Surface Water Quality – CDFW, SWRCB, DWR
11 – Aquatic Resources, Some Appendices ONLY – CDFW and SWRCB
12 – Geology and Soils – DWR, would you want this one for DSOD?
13 – Minerals
14 – Land Use
16 – Recreation Resources
19 – Noise
21 – Greenhouse Gas Emissions
23 – Tribal Cultural Resources

24 – Visual Resources
25 – Population and Housing
26 – Public Services and Utilities
27 – Public Health and Environmental Hazards
29 – Indian Trust Assets
32 – Other Required Analyses
33 – Consultation and Coordination
34 – Document Distribution

We had originally envisioned getting Chapter 5, Surface Water Resources, in this group also. However, this chapter needs a little more work and is being pushed back to Group 3 (coming next week). For CDFW, SWRCB, and DWR, there are some appendices for Chapter 5 that are posted and ready for review.

Let me know if you would like any additional chapters not currently identified for your agency review. Linda can help if you have any challenges connecting to OneDrive.

We look forward to your comments.

Ali

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

From: Alicia Forsythe
Sent: Wednesday, May 12, 2021 10:35 AM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Hi Kristal – We are also struggling with the amount of work/review in the time we have. We can extend to June 18, but really no later. With trying to get the document out for public review in late August, we have just got to make sure we leave enough time for ICF and the Authority team to address comments/make changes and then final format and get into our and Reclamation's final review process. I realize this is tight and we are struggling with this with our own internal review.

I'd encourage the group to review the Group 2 chapters ASAP once you receive them to leave schedules open for that last Group 3 chapters.

I will also talk with the team to see if we can get any of the Fisheries appendices out early.

Ali

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

From: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>
Sent: Wednesday, May 12, 2021 9:58 AM
To: Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Good morning,

Thank you for the list of chapters and projected timeline – it is very helpful. I see you are requesting comments on all the remaining chapters by June 14. I anticipate the review of the aquatic and water quality resources and associated modeling will be a significant effort on our part and we are in a time of year when a lot of staff are in the field. We would like to provide meaningful input and request more time for review. Understanding that you have a schedule to meet, I propose we provide comments on the last batch of chapters by June 30.

Kristal

From: Fisher, Linda <Linda.Fisher@hdrinc.com>
Sent: Tuesday, May 11, 2021 9:26 PM
To: Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Please find below the list of Chapters and Appendices being delivered this month. If you have any additional questions please let us know.

Deliverable	Review Period
May 3, 2021	

Chapter 7, Fluvial Geomorphology	5/11/2021-5/24/2021
Chapter 8, Groundwater Resources	5/11/2021-5/24/2021
Chapter 9, Vegetation Resources	5/11/2021-5/24/2021
Chapter 10, Wildlife Resources	5/11/2021-5/24/2021
Chapter 17, Energy	5/11/2021-5/24/2021
Chapter 18, Navigation, Transportation, and Traffic	5/11/2021-5/24/2021
Chapter 22, Cultural Resources	5/11/2021-5/24/2021
Appendix 8A, Groundwater Resources Basin Setting	5/11/2021-5/24/2021
Appendix 8B, Groundwater Modeling	5/11/2021-5/24/2021
Appendix 9A, Special-Status Plant Species	5/11/2021-5/24/2021
Appendix 9B, Vegetation and Wetland Methods and Information	5/11/2021-5/24/2021
Appendix 10A, Special-status Wildlife Table and Non-listed Wildlife Species Accounts	5/11/2021-5/24/2021
Appendix 10B, Wildlife Habitat Models and Methods	5/11/2021-5/24/2021
Appendix 10C, Special-status Wildlife Impact Tables	5/11/2021-5/24/2021
Appendix 17A (formerly 31B), CVP/SWP Power Modeling	5/11/2021-5/24/2021
May 24, 2021	
Chapter 5, Surface Water Resources	5/25/2021-6/14/2021
Chapter 6, Surface Water Quality	5/25/2021-6/14/2021
Chapter 12, Geology and Soils (includes Faults and Seismicity and Paleo)	5/25/2021-6/14/2021
Chapter 13, Minerals	5/25/2021-6/14/2021
Chapter 14, Land Use	5/25/2021-6/14/2021
Chapter 15, Agriculture and Forestry Resources	5/25/2021-6/14/2021
Chapter 16, Recreation Resources	5/25/2021-6/14/2021
Chapter 19, Noise	5/25/2021-6/14/2021
Chapter 23, Tribal Cultural Resources	5/25/2021-6/14/2021
Chapter 24, Visual Resources	5/25/2021-6/14/2021
Chapter 25, Population and Housing	5/25/2021-6/14/2021
Chapter 26, Public Services and Utilities	5/25/2021-6/14/2021]
Chapter 27, Public Health and Environmental Hazards (includes hazards and hazardous materials and wildfires)	5/25/2021-6/14/2021

Chapter 29, Indian Trust Assets	5/25/2021-6/14/2021
Chapter 30, Environmental Justice and Socioeconomics	5/25/2021-6/14/2021
Chapter 32, Other Required Analyses (includes Growth Inducing, Relationship Between Short-term Uses and Long-term Productivity and Irreversible or Irretrievable Resource Commitments)	5/25/2021-6/14/2021
Chapter 33, Consultation and Coordination and List of Preparers	5/25/2021-6/14/2021
Chapter 34, EIR/EIS Document Distribution	5/25/2021-6/14/2021
Appendix 5A (formerly 6A), Surface Water Resources Modeling of Alternatives	5/25/2021-6/14/2021
Appendix 5B (formerly 6B), Water Resources System Modeling	5/25/2021-6/14/2021
Appendix 5B1 (formerly 6B1), Project Operations	5/25/2021-6/14/2021
Appendix 5B2 (formerly 6B2), River Operations	5/25/2021-6/14/2021
Appendix 5B3 (formerly 6B3), Delta Operations	5/25/2021-6/14/2021
Appendix 5B4 (formerly 6B4), Regional Deliveries	5/25/2021-6/14/2021
Appendix 5C (formerly 6C), Upper Sacramento River Daily River Flow and Operations Models	5/25/2021-6/14/2021
Appendix 6A (formerly 7A), California State Water Resources Control Board Constituents of Concern	5/25/2021-6/14/2021
Appendix 6B (formerly 7B), Sacramento-San Joaquin Delta Modeling	5/25/2021-6/14/2021
Appendix 6C (formerly 7C), River Temperature Modeling	5/25/2021-6/14/2021
Appendix 6D (formerly 7C), Sites Reservoir Discharge Temperature Modeling	5/25/2021-6/14/2021
Appendix 6E, Water Quality Data	5/25/2021-6/14/2021
Appendix 6F (new), Mercury	5/25/2021-6/14/2021
Appendix 12A, Soils Survey Map	5/25/2021-6/14/2021
Appendix 12B, Soils Plan	5/25/2021-6/14/2021
Appendix 19A, Noise Calculations	5/25/2021-6/14/2021
Appendix 24A, Aesthetics	5/25/2021-6/14/2021
Appendix 24B, Aesthetics Existing Conditions/Setting	5/25/2021-6/14/2021
Appendix 27A, Environmental Records Search	5/25/2021-6/14/2021
Appendix 30A, Regional Economics Modeling (No change from 2017 Appendix 22C)	5/25/2021-6/14/2021
Appendix 32A (formerly 34A), Growth Inducing Considerations for Municipal and Industrial Water Users	5/25/2021-6/14/2021
Appendix 33A, 2017 Draft EIR/EIS Chapter 36 Consultation and Coordination	5/25/2021-6/14/2021

May 31, 2021	
Executive Summary – text only	6/1/2021-6/14/2021
Chapter 11, Aquatic Biological Resources	6/1/2021-6/14/2021
Chapter 20, Air Quality	6/1/2021-6/14/2021
Chapter 21, Greenhouse Gases	6/1/2021-6/14/2021
Chapter 28, Climate Change	6/1/2021-6/14/2021
Chapter 31, Cumulative Impacts	6/1/2021-6/14/2021
Appendix 2C, Construction Means, Methods, and Assumptions	6/1/2021-6/14/2021
Appendix 2D, Environmental Commitments and BMPs	6/1/2021-6/14/2021
Appendix 4A, Regulatory Requirements	6/1/2021-6/14/2021
Appendix 11A (formerly 12A), Aquatic Species Life Histories	6/1/2021-6/14/2021
Appendix 11B (formerly 12B), Fisheries Impact Assessment Methodology	6/1/2021-6/14/2021
Appendix 11C (formerly 12C), Fisheries Impact Summary	6/1/2021-6/14/2021
Appendix 11D (formerly 12E), Fisheries Water Temperature Assessment Summary Table	6/1/2021-6/14/2021
Appendix 11E (formerly 12F), Reservoir Water Surface Elevation Summary Table	6/1/2021-6/14/2021
Appendix 11F, (formerly 12G), Smelt Analysis	6/1/2021-6/14/2021
Appendix 11H Salmonid Population Modeling	6/1/2021-6/14/2021
Appendix 11I (formerly 12J), Winter Run Chinook Salmon Life Cycle Modeling	6/1/2021-6/14/2021
Appendix 11J (formerly 12K), Through Delta Survival of Juvenile Salmonids	6/1/2021-6/14/2021
Appendix 11K (formerly 12L), Weighted Usable Area Analysis	6/1/2021-6/14/2021
Appendix 11L (formerly 12M), Sturgeon Analysis	6/1/2021-6/14/2021
Appendix 11M (formerly 12N), Yolo and Sutter Bypass Flow and Weir Spill Analysis	6/1/2021-6/14/2021
Appendix 11N (new), Other Flow-Related Upstream Analyses	6/1/2021-6/14/2021
Appendix 11O (new), *Anderson-Martin Models*	6/1/2021-6/14/2021
Appendix 11P (new), Riverine Flow-Survival	6/1/2021-6/14/2021
Appendix 11Q (new), Other Bay-Delta Species Analyses	6/1/2021-6/14/2021
Appendix 20A (formerly 24A), Methodology for Air Quality and GHG Emissions Calculations	6/1/2021-6/14/2021

Appendix 28A (new), Climate Change	6/1/2021-6/14/2021

Linda Fisher, M.S.
D 916.817.4962 M 530.400.3212

hdrinc.com/follow-us

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Monday, May 10, 2021 5:12 PM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <amanda.montgomery@waterboards.ca.gov>; Davis-Fadtke, Kristal@Wildlife <kristal.davis-fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Responsible Agency Reps – The Group 1 Chapters are posted to a SharePoint site for your review and input. You will be receiving an email from Linda Fisher shortly with access information. It would likely be best if you download the files and share in your organization and then re-post them with comments. We can give others access to SharePoint also if you would like. If you have any issues accessing the files or need access for anyone else, please contact Linda.

Just a reminder that these chapters are due by COB, Monday, May 24. We appreciate your review and input on these chapters.

Also a few folks have asked for a listing of all chapters to understand the bigger picture. We will get that out tomorrow.

Ali

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

From: Alicia Forsythe
Sent: Tuesday, May 4, 2021 4:15 PM
To: 'Amy.Young@water.ca.gov' <Amy.Young@water.ca.gov>; 'Montgomery, Amanda@Waterboards' <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; 'Okita, David@DWR' <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; 'Biondi, Oscar@Waterboards' <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Responsible Agency Reps – Thank you for taking the time to review Chapters 1 to 4 of the Revised Draft EIR/Supplemental Draft EIS. We are working to incorporate the comments we received.

We are diligently working on the remainder of the Admin Draft document. Chapters are coming to the Authority in "Groups" from ICF as they are completed. We expect to be able to transmit the following chapters as associated appendices on Monday, May 10 for your review. Note that I have identified the Responsible Agency review by chapter. If you would like chapters that I currently do not have identified for your review, please let me know.

Chapter 7, Fluvial Geomorphology – CDFW, SWRCB
Chapter 8, Groundwater Resources – DWR
Chapter 9, Vegetation Resources – CDFW, SWRCB
Chapter 10, Wildlife Resources – CDFW, SWRCB
Chapter 17, Energy
Chapter 18, Navigation, Transportation and Traffic
Chapter 22, Cultural Resources

Comments on these "Group 1" chapters will be due Monday, May 24.

The next batch of Chapters will be available around May 31.

Ali

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

From: Alicia Forsythe
Sent: Wednesday, March 24, 2021 10:13 AM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review of Chapters 1 to 4; Due 4/21 (2 of 2 Emails)

Attached is Chapter 2. This is the same version of Chapter 2 that the Authority released to the public on February 19.

Ali

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

From: Alicia Forsythe
Sent: Wednesday, March 24, 2021 10:07 AM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards

<Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir Project - Responsible Agency Review of Chapters 1 to 4; Due 4/21 (1 of 2 Emails)

Responsible Agency Reps – The Sites Authority has prepared preliminary drafts of Chapters 1, 2, 3, and 4 of the our upcoming Revised Draft EIR, which is scheduled for release in August. These chapters cover the following topics:

1 – Introduction
2 – Project Description (same as previously sent to some of you)
3 – Environmental Analysis Approach
4 – Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements

These preliminary draft chapters are attached. As an agency that may be taking a CEQA action on the Project, we welcome your review and input on these preliminary chapters. We would like to received input by April 21. Please feel free to make changes, using track changes and/or comment bubbles in the files.

These preliminary draft chapters have also been distributed by Reclamation to a number of federal agencies that are Cooperating Agencies under NEPA. And as a reminder, these preliminary chapters are not for public review and should not be distributed to the public unless required to do so by law.

We continue to work on the remainder of the document and will get you additional preliminary draft chapters as they become available.

We appreciate and look forward to your feedback. If you have any questions or concerns, please feel free to contact me. We are also happy to host a call and walk the group through these chapters if folks would find that helpful – just let me know.

(Note, this email includes Chapters 1, 3, and 4. Chapter 2 will be sent in a separate email due to file size.)

Ali

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

From: Spranza, John [John.Spranza@hdrinc.com]
Sent: 5/27/2021 2:41:11 PM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Laurie Warner Herson [laurie.warner.herson@phenixenv.com]
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton
Attachments: Summay of NODOS Surveys In Sites Reservoir_ 20210526.docx

Ali,
Attached for your review and comment is a draft summary of NODOS survey results for the Sites project area.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, May 25, 2021 3:00 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <John.Spranza@hdrinc.com>
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton

Sounds good. Lets see if we can do all chapters relevant to GCID in one meeting except biological (habitat, veg, fish, wildlife). So that would actually include parts of Groups 1, 2, and 3. I've asked Marcia to try to schedule for the last week in June – so we have time.

John, we would do one meeting on all biological. Including fisheries – since we wont meet until late June/early July.

Ali

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

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Tuesday, May 25, 2021 2:50 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Spranza, John <john.spranza@hdrinc.com>
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton

Ok, go it. Since we have Group 2 now I was thinking it would be easy to add. Limiting to Group 1 will make it easy. As you know, our presentations to WG, RC and Board this month were not based on the ICF submittal groups but were based on footprint vs. operations based chapters/appendices – some Batch 1A ans 1B chapters were included.

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, May 25, 2021 1:33 PM
To: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Spranza, John <john.spranza@hdrinc.com>
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton

Thanks Laurie. Lets group the presentations based on the "Groups". Not based on Batch 1A and 1B.

And no on the cultural resources survey. Lets look at it and see if we have anything around funks. If we do, lets talk about it. But I am uncomfortable in how we received that information in the first place, so not inclined to share it further until we can figure things out.

Ali

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

From: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Sent: Tuesday, May 25, 2021 9:10 AM
To: Spranza, John <john.spranza@hdrinc.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton

Adding my notes to John's

From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Tuesday, May 25, 2021 7:52 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites - Follow up on Discussion with Jeff Sutton

Hi,
See below for my thoughts on your questions.

John Spranza

D 916.679.8858 M 818.640.2487

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Monday, May 24, 2021 1:45 PM
To: Spranza, John <John.Spranza@hdrinc.com>; Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites - Follow up on Discussion with Jeff Sutton
Importance: High

Hi John and Laurie –

Here's the action items that I had from our Friday discussion with Jeff.

1. Schedule and complete briefing for Jeff on all other relevant EIR/EIS Chapters – Ali to schedule for Group 1; Laurie, I will need help with a presentation to walk him through the Group 1 Chapters – LWH will prepare, based on prior presentations and summary info provided by ICF. The effects for Batch 1A and 1B chapters have been revised but we

have those now and I can rune through to confirm any changes. Will try to start today but have it done by COB tomorrow for Ali's review Thursday. I'll ask Nicole to read through as well.

2. Verify CRLF mapping east of Funks Reservoir – John, can you work with ICF on this? : JJS will do
3. Fix Keck's KMZ mapping – mapped in reservoir – John, can you work with ICF on this? JJS will do
4. DWR surveys – did they find Western pond turtle in Funks? – John can you verify this? See #8 below. JJS: There was no reference for where they found the turtle.
5. Pull our portions of Funks write-ups from Group 1 Chapters (and future chapters) and send to Jeff – Ali to take a stab at this and get to Laurie for review
6. Develop approach for CRLF for addressing with BOR and USFWS – Ali to develop, send to John for review
7. Get Jeff presentation and graphics from Friday's meeting – Ali will send presentation. John, how should we do the maps? Print them out of Google earth or ask ICF to develop rough maps for this? We should also send maps of habitat and any species mapped at the Red Bluff PP and at the Dunnigan Turnout. JJS: I'll work on this with ICF.

8. Summary of all DWR surveys and findings for Reclamation lands – John, can you take a stab at this? We didn't talk about this at our meeting, but Jeff called me today and I think this might be really useful JJS: So they don't really map locations, just that they found or did not find a particular species. They then use the general location references, "Western pond turtles were found in the project area, as well as outside the reservoir footprint, both upstream and downstream." We can't take that and determine if it was found on reclamation land or other locations. Still, I will put together a summary for the "Sites and Colusa Project" results. Does Jeff want cultural survey results? We typically don't share that info with the public but as the operator of Funks, TCC, etc., we can share the recent map(s) from the ICF survey report on the condition that he not circulate the maps.

I would like to follow up with Jeff by this Friday if we can with all of these. I realize that might be hard for some of these. Let me know what you think.

Let me know ASAP if I missed anything or miss characterized anything as I plan to follow up with Jeff first thing tomorrow with these items.

Ali

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

Sites

Topic: **Summary of NODOS Biological Resources Surveys** **2021 May 26**

Subject: **Overview and summary of the NODOS biological and botanical surveys as they relate to the Sites Reservoir project area.**

The following information has been excised and summarized from the following documents:

- North of the Delta Offstream Storage (NODOS) Investigation Progress Report to CALFED, July 2000
- North-Of-The-Delta Offstream Storage Investigation Final Initial Alternatives Information Report, May 2006
- Preliminary Administrative Draft North-Of-The-Delta Offstream Storage Project EIR/EIS. California Department of Water Resources (DWR) and U.S Department of the Interior (DOI), Bureau of Reclamation, Mid-Pacific Region (Reclamation). December 2013

Initial surveys were performed in the NODOS "Sites and Colusa Project Area" from approximately 1997 to 2000, additional surveys by DWR and California Department of Fish and Wildlife (CDFW) were performed from 2001 – 2004, then again in 2010 to 2011 at newer proposed Project facility locations (Delevan Pipeline and associated facilities).

Reptiles and Amphibian

Surveys for reptiles and amphibians were conducted by CDFW from August 1997 through spring 1999 in the Sites and Colusa Project areas. Amphibian and reptile surveys included night driving, dip-netting, seining, ground searches, habitat assessment, consultation with United States Fish and Wildlife (USFWS), and the use of the USFWS and CDFW's protocol guidelines for red-legged frog and California tiger salamander surveys.

The major objectives of these surveys were to search for California red-legged frogs, federally threatened; California tiger salamanders, candidate for federal listing and California Stat State Species of Concern; and to conduct general herpetology surveys. Four species listed as federal and California State Species of Concern that could potentially occur in the Sites and Colusa Project areas—foothill yellow-legged frogs, western pond turtles, western spadefoot toads, and California horned lizard—were also looked for during the course of this survey.

Results

A total of 2,400 hours in the spring and summer of 1998 and 1999 were spent in the Sites and Colusa Project areas looking for reptiles and amphibians. A total of 19 species, 5 amphibians and 14 reptiles, were found during this survey. Only one special species targeted by these surveys was found in the Sites Project study area, the western pond turtle. California red-legged frogs and California tiger salamanders were not found.

Mammal Surveys

A variety of field survey methods were used by CDFW biologists in 1998 and 1999 to sample the mammal populations at the Sites Project study area. These methods included small mammal trapping, mist netting, acoustical surveys, roost searches, track plates, camera stations, spotlighting, general habitat measurements and assessment, and incidental observation.

Results for Sites Project Area

No federally or state listed species were found during field surveys in the Sites Project study area. Six mammal California State Species of Special Concern were documented at the four project areas. Table 1 identifies those found within the Sites Reservoir study area.

Table 1. Special Status Mammals Observed in Sites Study Area

Species	Status
American badger	SSC
Pallid bat	SSC
San Joaquin pocket mouse	SSC
Western red bat	SSC

Source: North-Of-The-Delta Offstream Storage Investigation Final Initial Alternatives Information Report, May 2006

Avian Surveys

Avian surveys in the Sites Reservoir study area included general line transects and focused bank swallow, yellow-billed cuckoo, and owl surveys. The most relevant studies were confined primarily to the area of the reservoir footprint. However, line transects extended up to 2.5 miles from the reservoir footprint along key drainages. In addition to the surveys in the reservoir footprint, surveys were also initiated at Funks Reservoir to document which state or federally listed avian species would use a reservoir within low elevation grassland habitats. Sites Reservoir data are most comprehensive, being surveyed monthly from March 1997 to at least March 2000.

Results for Sites Project Area

No federally or state listed species identified as potentially occurring were found during field surveys in the Sites Project study area. Eleven avian species classified as either California Species of Special Concern or federal Migratory Nongame Birds of Management Concern were observed during the surveys at Funks Reservoir and are listed in Table 2.

Table 2. Special Status Species Observed at Funks Reservoir

Species	Status
American white pelican	SSC (breeding only)
Common loon	SSC (breeding only)
Golden eagle	FP
Grasshopper sparrow	SSC (breeding only)
Lawrence's goldfinch	MNBMC
Loggerhead shrike	SSC (breeding only)
Long-billed curlew	MNBMC
Northern harrier	SSC (breeding only)
Short-eared owl	SSC (breeding only), MNBMC
Bald eagle	SE
White-tailed kite	FP

Source: North-Of-The-Delta Offstream Storage Investigation Final Initial Alternatives Information Report, May 2006.
Key
CSSC = California Species of Special Concern
MNBMC = Migratory Nongame Birds of Management Concern (USFWS)
SE = State Endangered
FP = State Fully Protected

Valley Elderberry Longhorn Beetle (VELB)

A survey of all potential reservoir sites for the VELB and its habitat was conducted during the periods January through July 1998 and April through June 1999. Surveys focused on identifying potential habitat for VELB, the number of elderberry stems found measuring more than one inch, and the presence of exit holes. A total of 45 days was spent field surveying the drainages.

Results for Sites Project Area

Six hundred seventy-two stems were counted within the proposed Sites Project area. Emergence holes were found on 18 individual stems. The plants within this area tend to be individuals with multiple trunks and range from unhealthy stressed plants to occasional large healthy individuals. The majority of plants at this site and the riparian vegetation in general tend to be in poor condition.

Table 3. Elderberry Stems and Emergence Holes Found at Sites Reservoir

Sites Reservoir NODOS VELB 1998/99 Survey Results	
Number of elderberry stem	672
Number of stems with emergence hole	18
Percentage of stems with emergence holes:	2.7

Vernal Pool Brachiopods

Surveys of potential special status shrimp habitat at the potential reservoir sites were performed in 1998 and 1999. The 1999 surveys were conducted to verify potential special status shrimp habitat mapped in 1998 and to survey in areas where access was unavailable in the previous surveys because of flooded creeks, washed-out roads, and issues with property owners.

Special status shrimp include species in the following categories:

- Shrimp listed or proposed for listing as Threatened or Endangered Species under the federal Endangered Species Act (50 Code of Federal Regulations [CFR] 17.11 for listed animals and various Federal Register notices for proposed species).
- Other shrimp species meeting the definition of Rare, Threatened, or Endangered Species under the California Environmental Quality Act (CEQA) Guidelines (Section 15380).

Potential special status shrimp habitat is defined as seasonal wetlands and other temporarily ponded areas of sufficient size (depth and area) and seasonality to support specific vegetation. Grasslands and vernal pools characterize the majority of the potential landcover where special status shrimp could be found within the Sites Reservoir study area.

Results for Sites Project Area

A summary of potential special status shrimp habitat mapped in the 1998 and 1999 surveys is presented in Table 4. The majority of the areas identified as potential habitat is degraded by cattle activity, erosion, and debris from cattle feeding areas.

Table 4: Total Acreage of Potential Special Status Shrimp Habitat

Survey Year	Total Extent of Potential Special Status Species
1998	73
1999	71

Plant Surveys

Focused habitat-specific surveys were conducted, using wandering transect methodology, between February and October 1998 and 1999 and within potential routes for conveyances, recreation areas, and road relocations for the Sites Project area in 2000 through 2003. These months coincided with the appropriate flowering and fruiting stages necessary for the identification of most plant species occurring in the area, including all special-status species.

Results for Sites Project Area

No federally or state listed species identified as potentially occurring were found in the Sites Project study area. Five species with California Rare Plant Rank (CNPR) status were found during field surveys that were conducted within the Primary Study Area. This status is considered for purposes of CEQA analysis.

Table 5. Rare Plant Species Found in the Sites Project Study Area

Species	Status
Adobe lily	California Rare Plant Rank (CRPR) of 1B.2
Bent-flowered fiddleneck	CRPR of 1B.2
Red-flowered bird's-foot trefoil	CRPR of 1B.1
Brittlescale	CRPR of 1B.2
San Joaquin spearscale	CRPR of 1B.2

California Rare Plant Rank:
1A = presumed extinct in California
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California, but more common elsewhere
3 = more information is needed to determine whether assigning a rank is appropriate
4 = plants of limited distribution that are on a watch list
0.1 = seriously endangered in California
0.2 = fairly endangered in California

Sites Reservoir Project

2021 Water Estimate

May 28, 2021

Sites

Overview

- Objective
  - Evaluated potential Sites Project operations for recent years not covered by the CalSim II simulation period
- Approach
  - Simple mass balance spreadsheet calculations
  - Estimated annual Sites Project diversion to fill and release using correlations between modeled results (DEIRS Alternative 1B) and historical information
- Results
  - Through the relatively dry period of 2009 – 2020, the average annual Sites Project fill and release values are 269 TAF and 216 TAF respectively
  - Average EOY September storage in Sites Project is 510 TAF

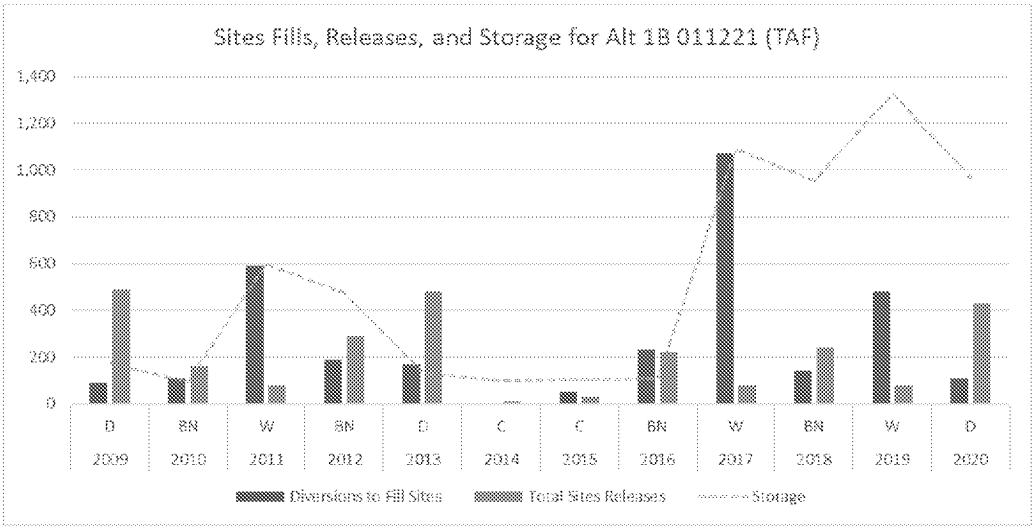
Analysis Performed

- Simple mass balance spreadsheet calculations
- Storage capacity of 1.5 MAF (Alternative 1B)
- Period of record analyzed 2009 – 2020
- Starting Storage for WY 2009 assumed at600 TAF
- Sites Project Fills for WY 2009 – 2018 were estimated based on historical flow and water operations information (values determined for Alternative 1B using the Daily Divertible & Storable Flow Tool)
- Daily Divertible & Storable Flow Tool was developed in 2018 to estimate the daily diversion potential for the Sites Project in WY 2009 – 2018 and potential effects of diversions on river hydrographs based on observed flow availability, and assumed Sites Project intake/conveyance constraints, and diversion criteria; tool simulates each year as a separate event and does not include storage or release operations

Analysis Performed

- Sites Project fills for WY 2019 – 2020 were estimated based on regression between historical full natural flows for Sacramento River at Bend Bridge and CalSim II results for diversions to fill Sites Project (Alt 1B)
- Sites Project releases are estimated based on a "similar years" relationship developed from CalSim II results for total releases from the Sites Project (Alt 1B) using historical Sacramento Valley Water Supply Index as the indicator of wettness
- Sites Project fills are constrained by available storage capacity based on annual mass balance calculations
- Sites Project releases are constrained to not exceed storage availability based on annual mass balance calculations (previous month's storage plus the current month's fill minus dead pool storage)

Results



- Results show Sites Project operations for generally dry conditions
- Project accrues fills in wet years to make releases during drier years

Results

Water Year	Year Type	Diversions to Fill Sites	Total Sites Releases	Total Sites Storage (EOY)
2009	D	90	490	170
2010	BN	110	160	100
2011	W	590	80	600
2012	BN	190	290	470
2013	D	170	480	130
2014	C	0	20	100
2015	C	50	30	110
2016	BN	230	220	110
2017	W	1,070	80	1,090
2018	BN	140	240	950
2019	W	480	80	1,320
2020	D	110	430	970
Average		269	216	510

Limitations

- Sites Project operations for the last ten years are not evaluated at the same level of rigor as done in CalSim II
- Project fill quantities for 2008 – 2018 are developed rigorously accurately reflecting hydrologic and operation constraints, however 2019 – 2020 values are approximate
- Project release quantities are approximate and have not been evaluated for consideration of benefits, schedules and associated operations constraints


Questions
and
Discussion


Sites

Sites Reservoir Project

2021 Water Estimate

May 28, 2021

Sites

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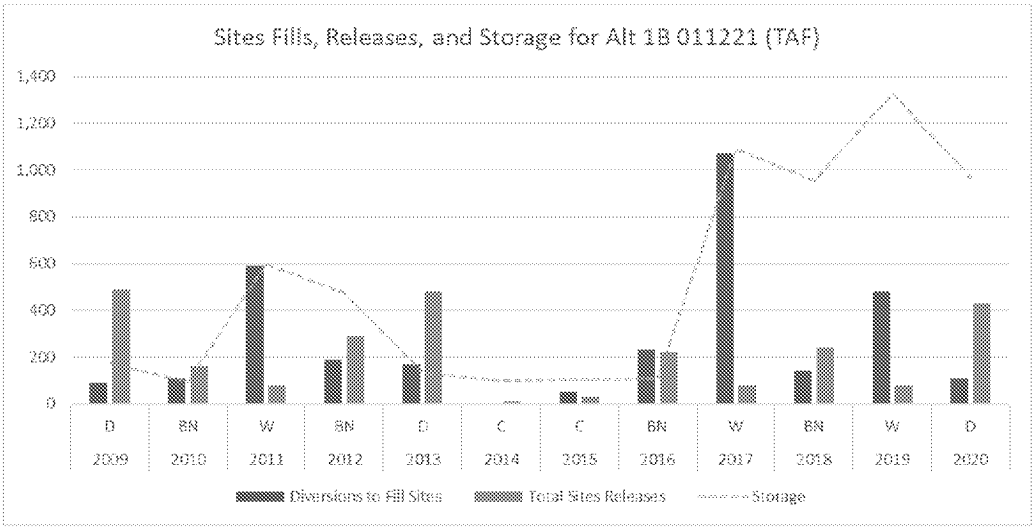
Results



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- Sites Project operations for the last twelve years are not evaluated at the same level of rigor as done in CalSim II
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- Project release quantities are approximate and have not been evaluated for consideration of benefits, schedules, and associated operations constraints


Questions
and
Discussion


Sites

From: Okita, David@DWR [David.Okita@water.ca.gov]
Sent: 5/28/2021 6:22:40 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]
Subject: Re: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

For DWR review of Administrative Draft - we are only reviewing those chapters dealing with operations and contracting issues.

Broader DWR issues such as groundwater and Oroville recreation will be reviewed at the public draft stage. We don't think these types of issues need scrutiny at this stage. DWR has a formal process for reviewing draft CEQA documents, but not Admin Drafts.

David Okita, PE
Department of Water Resources
530 902-7588

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 27, 2021 3:55 PM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

Hi all – I was just reviewing the attached file that thought it would be useful for those that are reviewing appendices. (Especially for the Chapter 11 Appendices as there are a number of them.)

Also, it occurred to me earlier today and we should have DWR look at recreation resources as we look at Oroville.

Linda, can you get recreation loaded for DWR?

Thanks all!

Ali

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

From: Alicia Forsythe
Sent: Wednesday, May 26, 2021 11:05 AM
To: 'Davis-Fadtke, Kristal@Wildlife' <Kristal.Davis-Fadtke@wildlife.ca.gov>; 'Fisher, Linda' <Linda.Fisher@hdrinc.com>; 'Young, Amy@DWR' <Amy.Young@water.ca.gov>; 'Montgomery, Amanda@Waterboards' <Amanda.Montgomery@waterboards.ca.gov>; 'Okita, David@DWR' <David.Okita@water.ca.gov>; 'Kearns, Zachary@Wildlife' <Zachary.Kearns@Wildlife.ca.gov>; 'Torres, Juan@Wildlife' <Juan.Torres@wildlife.ca.gov>; 'Uttley, Paige@Wildlife' <Paige.Uttley@wildlife.ca.gov>; 'Barker, Kelley@Wildlife' <Kelley.Barker@wildlife.ca.gov>; 'Purdy, Colin@Wildlife' <Colin.Purdy@wildlife.ca.gov>; 'Huneycutt, Andrew@Wildlife' <Andrew.Huneycutt@Wildlife.ca.gov>; 'Williams, Jonathan@Wildlife' <Jonathan.Williams@wildlife.ca.gov>; 'Cooke, Robert@DWR' <Robert.Cooke@water.ca.gov>; 'Biondi, Oscar@Waterboards' <Oscar.Biondi@waterboards.ca.gov>
Cc: 'Laurie Warner Herson' <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

CEQA Responsible Agencies – Thank you for your comments on the "Group 1" Chapters. We now have Group 2 Chapters ready for your review. Below are the Group 2 Chapters along with the Responsible Agencies identified for review. Please let me know if you would like to review additional chapters not currently identified for your organization. Comments are due June 14.

6 – Surface Water Quality – CDFW, SWRCB, DWR
11 – Aquatic Resources, Some Appendices ONLY – CDFW and SWRCB
12 – Geology and Soils – DWR, would you want this one for DSOD?
13 – Minerals
14 – Land Use
16 – Recreation Resources
19 – Noise
21 – Greenhouse Gas Emissions
23 – Tribal Cultural Resources
24 – Visual Resources
25 – Population and Housing
26 – Public Services and Utilities
27 – Public Health and Environmental Hazards
29 – Indian Trust Assets
32 – Other Required Analyses
33 – Consultation and Coordination
34 – Document Distribution

We had originally envisioned getting Chapter 5, Surface Water Resources, in this group also. However, this chapter needs a little more work and is being pushed back to Group 3 (coming next week). For CDFW, SWRCB, and DWR, there are some appendices for Chapter 5 that are posted and ready for review.

Let me know if you would like any additional chapters not currently identified for your agency review. Linda can help if you have any challenges connecting to OneDrive.

We look forward to your comments.

Ali

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

From: Alicia Forsythe
Sent: Wednesday, May 12, 2021 10:35 AM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Hi Kristal – We are also struggling with the amount of work/review in the time we have. We can extend to June 18, but really no later. With trying to get the document out for public review in late August, we have just got to make sure we leave enough time for ICF and the Authority team to address comments/make changes and then final format and get into our and Reclamation's final review process. I realize this is tight and we are struggling with this with our own internal review.

I'd encourage the group to review the Group 2 chapters ASAP once you receive them to leave schedules open for that last Group 3 chapters.

I will also talk with the team to see if we can get any of the Fisheries appendices out early.

Ali

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

From: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>
Sent: Wednesday, May 12, 2021 9:58 AM
To: Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>;

Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Good morning,

Thank you for the list of chapters and projected timeline – it is very helpful. I see you are requesting comments on all the remaining chapters by June 14. I anticipate the review of the aquatic and water quality resources and associated modeling will be a significant effort on our part and we are in a time of year when a lot of staff are in the field. We would like to provide meaningful input and request more time for review. Understanding that you have a schedule to meet, I propose we provide comments on the last batch of chapters by June 30.

Kristal

From: Fisher, Linda <Linda.Fisher@hdrinc.com>
Sent: Tuesday, May 11, 2021 9:26 PM
To: Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Please find below the list of Chapters and Appendices being delivered this month. If you have any additional questions please let us know.

Deliverable	Review Period
May 3, 2021	
Chapter 7, Fluvial Geomorphology	5/11/2021-5/24/2021
Chapter 8, Groundwater Resources	5/11/2021-5/24/2021
Chapter 9, Vegetation Resources	5/11/2021-5/24/2021
Chapter 10, Wildlife Resources	5/11/2021-5/24/2021
Chapter 17, Energy	5/11/2021-5/24/2021
Chapter 18, Navigation, Transportation, and Traffic	5/11/2021-5/24/2021
Chapter 22, Cultural Resources	5/11/2021-5/24/2021
Appendix 8A, Groundwater Resources Basin Setting	5/11/2021-5/24/2021
Appendix 8B, Groundwater Modeling	5/11/2021-5/24/2021
Appendix 9A, Special-Status Plant Species	5/11/2021-5/24/2021
Appendix 9B, Vegetation and Wetland Methods and Information	5/11/2021-5/24/2021

Appendix 10A, Special-status Wildlife Table and Non-listed Wildlife Species Accounts	5/11/2021-5/24/2021
Appendix 10B, Wildlife Habitat Models and Methods	5/11/2021-5/24/2021
Appendix 10C, Special-status Wildlife Impact Tables	5/11/2021-5/24/2021
Appendix 17A (formerly 31B), CVP/SWP Power Modeling	5/11/2021-5/24/2021
May 24, 2021	
Chapter 5, Surface Water Resources	5/25/2021-6/14/2021
Chapter 6, Surface Water Quality	5/25/2021-6/14/2021
Chapter 12, Geology and Soils (includes Faults and Seismicity and Paleo)	5/25/2021-6/14/2021
Chapter 13, Minerals	5/25/2021-6/14/2021
Chapter 14, Land Use	5/25/2021-6/14/2021
Chapter 15, Agriculture and Forestry Resources	5/25/2021-6/14/2021
Chapter 16, Recreation Resources	5/25/2021-6/14/2021
Chapter 19, Noise	5/25/2021-6/14/2021
Chapter 23, Tribal Cultural Resources	5/25/2021-6/14/2021
Chapter 24, Visual Resources	5/25/2021-6/14/2021
Chapter 25, Population and Housing	5/25/2021-6/14/2021
Chapter 26, Public Services and Utilities	5/25/2021-6/14/2021]
Chapter 27, Public Health and Environmental Hazards (includes hazards and hazardous materials and wildfires)	5/25/2021-6/14/2021
Chapter 29, Indian Trust Assets	5/25/2021-6/14/2021
Chapter 30, Environmental Justice and Socioeconomics	5/25/2021-6/14/2021
Chapter 32, Other Required Analyses (includes Growth Inducing, Relationship Between Short-term Uses and Long-term Productivity and Irreversible or Irretrievable Resource Commitments)	5/25/2021-6/14/2021
Chapter 33, Consultation and Coordination and List of Preparers	5/25/2021-6/14/2021
Chapter 34, EIR/EIS Document Distribution	5/25/2021-6/14/2021
Appendix 5A (formerly 6A), Surface Water Resources Modeling of Alternatives	5/25/2021-6/14/2021
Appendix 5B (formerly 6B), Water Resources System Modeling	5/25/2021-6/14/2021
Appendix 5B1 (formerly 6B1), Project Operations	5/25/2021-6/14/2021
Appendix 5B2 (formerly 6B2), River Operations	5/25/2021-6/14/2021
Appendix 5B3 (formerly 6B3), Delta Operations	5/25/2021-6/14/2021

Appendix 5B4 (formerly 6B4), Regional Deliveries	5/25/2021-6/14/2021
Appendix 5C (formerly 6C), Upper Sacramento River Daily River Flow and Operations Models	5/25/2021-6/14/2021
Appendix 6A (formerly 7A), California State Water Resources Control Board Constituents of Concern	5/25/2021-6/14/2021
Appendix 6B (formerly 7B), Sacramento-San Joaquin Delta Modeling	5/25/2021-6/14/2021
Appendix 6C (formerly 7C), River Temperature Modeling	5/25/2021-6/14/2021
Appendix 6D (formerly 7C), Sites Reservoir Discharge Temperature Modeling	5/25/2021-6/14/2021
Appendix 6E, Water Quality Data	5/25/2021-6/14/2021
Appendix 6F (new), Mercury	5/25/2021-6/14/2021
Appendix 12A, Soils Survey Map	5/25/2021-6/14/2021
Appendix 12B, Soils Plan	5/25/2021-6/14/2021
Appendix 19A, Noise Calculations	5/25/2021-6/14/2021
Appendix 24A, Aesthetics	5/25/2021-6/14/2021
Appendix 24B, Aesthetics Existing Conditions/Setting	5/25/2021-6/14/2021
Appendix 27A, Environmental Records Search	5/25/2021-6/14/2021
Appendix 30A, Regional Economics Modeling (No change from 2017 Appendix 22C)	5/25/2021-6/14/2021
Appendix 32A (formerly 34A), Growth Inducing Considerations for Municipal and Industrial Water Users	5/25/2021-6/14/2021
Appendix 33A, 2017 Draft EIR/EIS Chapter 36 Consultation and Coordination	5/25/2021-6/14/2021
May 31, 2021	
Executive Summary – text only	6/1/2021-6/14/2021
Chapter 11, Aquatic Biological Resources	6/1/2021-6/14/2021
Chapter 20, Air Quality	6/1/2021-6/14/2021
Chapter 21, Greenhouse Gases	6/1/2021-6/14/2021
Chapter 28, Climate Change	6/1/2021-6/14/2021
Chapter 31, Cumulative Impacts	6/1/2021-6/14/2021
Appendix 2C, Construction Means, Methods, and Assumptions	6/1/2021-6/14/2021
Appendix 2D, Environmental Commitments and BMPs	6/1/2021-6/14/2021
Appendix 4A, Regulatory Requirements	6/1/2021-6/14/2021
Appendix 11A (formerly 12A), Aquatic Species Life Histories	6/1/2021-6/14/2021

Appendix 11B (formerly 12B), Fisheries Impact Assessment Methodology	6/1/2021-6/14/2021
Appendix 11C (formerly 12C), Fisheries Impact Summary	6/1/2021-6/14/2021
Appendix 11D (formerly 12E), Fisheries Water Temperature Assessment Summary Table	6/1/2021-6/14/2021
Appendix 11E (formerly 12F), Reservoir Water Surface Elevation Summary Table	6/1/2021-6/14/2021
Appendix 11F, (formerly 12G), Smelt Analysis	6/1/2021-6/14/2021
Appendix 11H Salmonid Population Modeling	6/1/2021-6/14/2021
Appendix 11I (formerly 12J), Winter Run Chinook Salmon Life Cycle Modeling	6/1/2021-6/14/2021
Appendix 11J (formerly 12K), Through Delta Survival of Juvenile Salmonids	6/1/2021-6/14/2021
Appendix 11K (formerly 12L), Weighted Usable Area Analysis	6/1/2021-6/14/2021
Appendix 11L (formerly 12M), Sturgeon Analysis	6/1/2021-6/14/2021
Appendix 11M (formerly 12N), Yolo and Sutter Bypass Flow and Weir Spill Analysis	6/1/2021-6/14/2021
Appendix 11N (new), Other Flow-Related Upstream Analyses	6/1/2021-6/14/2021
Appendix 11O (new), *Anderson-Martin Models*	6/1/2021-6/14/2021
Appendix 11P (new), Riverine Flow-Survival	6/1/2021-6/14/2021
Appendix 11Q (new), Other Bay-Delta Species Analyses	6/1/2021-6/14/2021
Appendix 20A (formerly 24A), Methodology for Air Quality and GHG Emissions Calculations	6/1/2021-6/14/2021
Appendix 28A (new), Climate Change	6/1/2021-6/14/2021

Linda Fisher, M.S.
D 916.817.4962 M 530.400.3212

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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Monday, May 10, 2021 5:12 PM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <amanda.montgomery@waterboards.ca.gov>; Davis-Fadtke, Kristal@Wildlife <kristal.davis-fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Responsible Agency Reps – The Group 1 Chapters are posted to a SharePoint site for your review and input. You will be receiving an email from Linda Fisher shortly with access information. It would likely be best if you download the files and share in your organization and then re-post them with comments. We can give others access to SharePoint also if you would like. If you have any issues accessing the files or need access for anyone else, please contact Linda.

Just a reminder that these chapters are due by COB, Monday, May 24. We appreciate your review and input on these chapters.

Also a few folks have asked for a listing of all chapters to understand the bigger picture. We will get that out tomorrow.

Ali

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

From: Alicia Forsythe
Sent: Tuesday, May 4, 2021 4:15 PM
To: 'Amy.Young@water.ca.gov' <Amy.Young@water.ca.gov>; 'Montgomery, Amanda@Waterboards' <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; 'Okita, David@DWR' <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; 'Biondi, Oscar@Waterboards' <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Responsible Agency Reps – Thank you for taking the time to review Chapters 1 to 4 of the Revised Draft EIR/Supplemental Draft EIS. We are working to incorporate the comments we received.

We are diligently working on the remainder of the Admin Draft document. Chapters are coming to the Authority in "Groups" from ICF as they are completed. We expect to be able to transmit the following chapters as associated appendices on Monday, May 10 for your review. Note that I have identified the Responsible Agency review by chapter. If you would like chapters that I currently do not have identified for your review, please let me know.

Chapter 7, Fluvial Geomorphology – CDFW, SWRCB
Chapter 8, Groundwater Resources – DWR
Chapter 9, Vegetation Resources – CDFW, SWRCB
Chapter 10, Wildlife Resources – CDFW, SWRCB
Chapter 17, Energy
Chapter 18, Navigation, Transportation and Traffic
Chapter 22, Cultural Resources

Comments on these "Group 1" chapters will be due Monday, May 24.

The next batch of Chapters will be available around May 31.

Ali

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From: Alicia Forsythe
Sent: Wednesday, March 24, 2021 10:13 AM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review of Chapters 1 to 4; Due 4/21 (2 of 2 Emails)

Attached is Chapter 2. This is the same version of Chapter 2 that the Authority released to the public on February 19.

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: Wednesday, March 24, 2021 10:07 AM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir Project - Responsible Agency Review of Chapters 1 to 4; Due 4/21 (1 of 2 Emails)

Responsible Agency Reps – The Sites Authority has prepared preliminary drafts of Chapters 1, 2, 3, and 4 of the our upcoming Revised Draft EIR, which is scheduled for release in August. These chapters cover the following topics:

1 – Introduction
2 – Project Description (same as previously sent to some of you)
3 – Environmental Analysis Approach
4 – Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements

These preliminary draft chapters are attached. As an agency that may be taking a CEQA action on the Project, we welcome your review and input on these preliminary chapters. We would like to received input by April 21. Please feel free to make changes, using track changes and/or comment bubbles in the files.

These preliminary draft chapters have also been distributed by Reclamation to a number of federal agencies that are Cooperating Agencies under NEPA. And as a reminder, these preliminary chapters are not for public review and should not be distributed to the public unless required to do so by law.

We continue to work on the remainder of the document and will get you additional preliminary draft chapters as they become available.

We appreciate and look forward to your feedback. If you have any questions or concerns, please feel free to contact me. We are also happy to host a call and walk the group through these chapters if folks would find that helpful – just let me know.

(Note, this email includes Chapters 1, 3, and 4. Chapter 2 will be sent in a separate email due to file size.)

Ali

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

Sent: 5/28/2021 8:58:06 AM
To: Okita, David@DWR [David.Okita@water.ca.gov]
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

Sorry for my delayed response. That sounds good David. I

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

From: Okita, David@DWR <David.Okita@water.ca.gov>
Sent: Friday, May 28, 2021 6:23 AM
To: Alicia Forsythe <aforsythe@sitesproject.org>
Subject: Re: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

For DWR review of Administrative Draft - we are only reviewing those chapters dealing with operations and contracting issues.

Broader DWR issues such as groundwater and Oroville recreation will be reviewed at the public draft stage. We don't think these types of issues need scrutiny at this stage. DWR has a formal process for reviewing draft CEQA documents, but not Admin Drafts.

David Okita, PE
Department of Water Resources
530 902-7588

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Thursday, May 27, 2021 3:55 PM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <erin.heydinger@hdrinc.com>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

Hi all – I was just reviewing the attached file that thought it would be useful for those that are reviewing appendices. (Especially for the Chapter 11 Appendices as there are a number of them.)

Also, it occurred to me earlier today and we should have DWR look at recreation resources as we look at Oroville.

Linda, can you get recreation loaded for DWR?

Thanks all!

Ali

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From: Alicia Forsythe
Sent: Wednesday, May 26, 2021 11:05 AM
To: 'Davis-Fadtke, Kristal@Wildlife' <Kristal.Davis-Fadtke@wildlife.ca.gov>; 'Fisher, Linda' <Linda.Fisher@hdrinc.com>; 'Young, Amy@DWR' <Amy.Young@water.ca.gov>; 'Montgomery, Amanda@Waterboards' <Amanda.Montgomery@waterboards.ca.gov>; 'Okita, David@DWR' <David.Okita@water.ca.gov>; 'Kearns, Zachary@Wildlife' <Zachary.Kearns@Wildlife.ca.gov>; 'Torres, Juan@Wildlife' <Juan.Torres@wildlife.ca.gov>; 'Uttley, Paige@Wildlife' <Paige.Uttley@wildlife.ca.gov>; 'Barker, Kelley@Wildlife' <Kelley.Barker@wildlife.ca.gov>; 'Purdy, Colin@Wildlife' <Colin.Purdy@wildlife.ca.gov>; 'Huneycutt, Andrew@Wildlife' <Andrew.Huneycutt@Wildlife.ca.gov>; 'Williams, Jonathan@Wildlife' <Jonathan.Williams@wildlife.ca.gov>; 'Cooke, Robert@DWR' <Robert.Cooke@water.ca.gov>; 'Biondi, Oscar@Waterboards' <Oscar.Biondi@waterboards.ca.gov>
Cc: 'Laurie Warner Herson' <laurie.warner.herson@phenixenv.com>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>; Linda Fisher (linda.fisher@hdrinc.com) <linda.fisher@hdrinc.com>
Subject: Sites Reservoir Project - Responsible Agency Review - Group 2 Chapters - Due June 14

CEQA Responsible Agencies – Thank you for your comments on the "Group 1" Chapters. We now have Group 2 Chapters ready for your review. Below are the Group 2 Chapters along with the Responsible Agencies identified for review. Please let me know if you would like to review additional chapters not currently identified for your organization. Comments are due June 14.

6 – Surface Water Quality – CDFW, SWRCB, DWR
11 – Aquatic Resources, Some Appendices ONLY – CDFW and SWRCB
12 – Geology and Soils – DWR, would you want this one for DSOD?
13 – Minerals
14 – Land Use
16 – Recreation Resources
19 – Noise
21 – Greenhouse Gas Emissions
23 – Tribal Cultural Resources
24 – Visual Resources
25 – Population and Housing
26 – Public Services and Utilities
27 – Public Health and Environmental Hazards
29 – Indian Trust Assets
32 – Other Required Analyses

33 – Consultation and Coordination
34 – Document Distribution

We had originally envisioned getting Chapter 5, Surface Water Resources, in this group also. However, this chapter needs a little more work and is being pushed back to Group 3 (coming next week). For CDFW, SWRCB, and DWR, there are some appendices for Chapter 5 that are posted and ready for review.

Let me know if you would like any additional chapters not currently identified for your agency review. Linda can help if you have any challenges connecting to OneDrive.

We look forward to your comments.

Ali

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

From: Alicia Forsythe
Sent: Wednesday, May 12, 2021 10:35 AM
To: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Heydinger, Erin <Erin.Heydinger@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Hi Kristal – We are also struggling with the amount of work/review in the time we have. We can extend to June 18, but really no later. With trying to get the document out for public review in late August, we have just got to make sure we leave enough time for ICF and the Authority team to address comments/make changes and then final format and get into our and Reclamation's final review process. I realize this is tight and we are struggling with this with our own internal review.

I'd encourage the group to review the Group 2 chapters ASAP once you receive them to leave schedules open for that last Group 3 chapters.

I will also talk with the team to see if we can get any of the Fisheries appendices out early.

Ali

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

From: Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>
Sent: Wednesday, May 12, 2021 9:58 AM
To: Fisher, Linda <Linda.Fisher@hdrinc.com>; Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>; Uttley, Paige@Wildlife <Paige.Uttley@wildlife.ca.gov>; Kearns, Zachary@Wildlife <Zachary.Kearns@Wildlife.ca.gov>; Torres, Juan@Wildlife <Juan.Torres@wildlife.ca.gov>; Barker, Kelley@Wildlife <Kelley.Barker@wildlife.ca.gov>; Purdy, Colin@Wildlife <Colin.Purdy@wildlife.ca.gov>; Huneycutt, Andrew@Wildlife <Andrew.Huneycutt@Wildlife.ca.gov>; Williams, Jonathan@Wildlife <Jonathan.Williams@wildlife.ca.gov>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Good morning,

Thank you for the list of chapters and projected timeline – it is very helpful. I see you are requesting comments on all the remaining chapters by June 14. I anticipate the review of the aquatic and water quality resources and associated modeling will be a significant effort on our part and we are in a time of year when a lot of staff are in the field. We would like to provide meaningful input and request more time for review. Understanding that you have a schedule to meet, I propose we provide comments on the last batch of chapters by June 30.

Kristal

From: Fisher, Linda <Linda.Fisher@hdrinc.com>
Sent: Tuesday, May 11, 2021 9:26 PM
To: Young, Amy@DWR <Amy.Young@water.ca.gov>; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Davis-Fadtke, Kristal@Wildlife <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Alicia Forsythe <aforsythe@sitesproject.org>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Please find below the list of Chapters and Appendices being delivered this month. If you have any additional questions please let us know.

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May 3, 2021	
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Chapter 30, Environmental Justice and Socioeconomics	5/25/2021-6/14/2021

Chapter 32, Other Required Analyses (includes Growth Inducing, Relationship Between Short-term Uses and Long-term Productivity and Irreversible or Irretrievable Resource Commitments)	5/25/2021-6/14/2021
Chapter 33, Consultation and Coordination and List of Preparers	5/25/2021-6/14/2021
Chapter 34, EIR/EIS Document Distribution	5/25/2021-6/14/2021
Appendix 5A (formerly 6A), Surface Water Resources Modeling of Alternatives	5/25/2021-6/14/2021
Appendix 5B (formerly 6B), Water Resources System Modeling	5/25/2021-6/14/2021
Appendix 5B1 (formerly 6B1), Project Operations	5/25/2021-6/14/2021
Appendix 5B2 (formerly 6B2), River Operations	5/25/2021-6/14/2021
Appendix 5B3 (formerly 6B3), Delta Operations	5/25/2021-6/14/2021
Appendix 5B4 (formerly 6B4), Regional Deliveries	5/25/2021-6/14/2021
Appendix 5C (formerly 6C), Upper Sacramento River Daily River Flow and Operations Models	5/25/2021-6/14/2021
Appendix 6A (formerly 7A), California State Water Resources Control Board Constituents of Concern	5/25/2021-6/14/2021
Appendix 6B (formerly 7B), Sacramento-San Joaquin Delta Modeling	5/25/2021-6/14/2021
Appendix 6C (formerly 7C), River Temperature Modeling	5/25/2021-6/14/2021
Appendix 6D (formerly 7C), Sites Reservoir Discharge Temperature Modeling	5/25/2021-6/14/2021
Appendix 6E, Water Quality Data	5/25/2021-6/14/2021
Appendix 6F (new), Mercury	5/25/2021-6/14/2021
Appendix 12A, Soils Survey Map	5/25/2021-6/14/2021
Appendix 12B, Soils Plan	5/25/2021-6/14/2021
Appendix 19A, Noise Calculations	5/25/2021-6/14/2021
Appendix 24A, Aesthetics	5/25/2021-6/14/2021
Appendix 24B, Aesthetics Existing Conditions/Setting	5/25/2021-6/14/2021
Appendix 27A, Environmental Records Search	5/25/2021-6/14/2021
Appendix 30A, Regional Economics Modeling (No change from 2017 Appendix 22C)	5/25/2021-6/14/2021
Appendix 32A (formerly 34A), Growth Inducing Considerations for Municipal and Industrial Water Users	5/25/2021-6/14/2021
Appendix 33A, 2017 Draft EIR/EIS Chapter 36 Consultation and Coordination	5/25/2021-6/14/2021
May 31, 2021	
Executive Summary – text only	6/1/2021-6/14/2021

Chapter 11, Aquatic Biological Resources	6/1/2021-6/14/2021
Chapter 20, Air Quality	6/1/2021-6/14/2021
Chapter 21, Greenhouse Gases	6/1/2021-6/14/2021
Chapter 28, Climate Change	6/1/2021-6/14/2021
Chapter 31, Cumulative Impacts	6/1/2021-6/14/2021
Appendix 2C, Construction Means, Methods, and Assumptions	6/1/2021-6/14/2021
Appendix 2D, Environmental Commitments and BMPs	6/1/2021-6/14/2021
Appendix 4A, Regulatory Requirements	6/1/2021-6/14/2021
Appendix 11A (formerly 12A), Aquatic Species Life Histories	6/1/2021-6/14/2021
Appendix 11B (formerly 12B), Fisheries Impact Assessment Methodology	6/1/2021-6/14/2021
Appendix 11C (formerly 12C), Fisheries Impact Summary	6/1/2021-6/14/2021
Appendix 11D (formerly 12E), Fisheries Water Temperature Assessment Summary Table	6/1/2021-6/14/2021
Appendix 11E (formerly 12F), Reservoir Water Surface Elevation Summary Table	6/1/2021-6/14/2021
Appendix 11F, (formerly 12G), Smelt Analysis	6/1/2021-6/14/2021
Appendix 11H Salmonid Population Modeling	6/1/2021-6/14/2021
Appendix 11I (formerly 12J), Winter Run Chinook Salmon Life Cycle Modeling	6/1/2021-6/14/2021
Appendix 11J (formerly 12K), Through Delta Survival of Juvenile Salmonids	6/1/2021-6/14/2021
Appendix 11K (formerly 12L), Weighted Usable Area Analysis	6/1/2021-6/14/2021
Appendix 11L (formerly 12M), Sturgeon Analysis	6/1/2021-6/14/2021
Appendix 11M (formerly 12N), Yolo and Sutter Bypass Flow and Weir Spill Analysis	6/1/2021-6/14/2021
Appendix 11N (new), Other Flow-Related Upstream Analyses	6/1/2021-6/14/2021
Appendix 11O (new), *Anderson-Martin Models*	6/1/2021-6/14/2021
Appendix 11P (new), Riverine Flow-Survival	6/1/2021-6/14/2021
Appendix 11Q (new), Other Bay-Delta Species Analyses	6/1/2021-6/14/2021
Appendix 20A (formerly 24A), Methodology for Air Quality and GHG Emissions Calculations	6/1/2021-6/14/2021
Appendix 28A (new), Climate Change	6/1/2021-6/14/2021

Linda Fisher, M.S.
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From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Monday, May 10, 2021 5:12 PM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <amanda.montgomery@waterboards.ca.gov>; Davis-Fadtke, Kristal@Wildlife <kristal.davis-fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>; Fisher, Linda <Linda.Fisher@hdrinc.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Responsible Agency Reps – The Group 1 Chapters are posted to a SharePoint site for your review and input. You will be receiving an email from Linda Fisher shortly with access information. It would likely be best if you download the files and share in your organization and then re-post them with comments. We can give others access to SharePoint also if you would like. If you have any issues accessing the files or need access for anyone else, please contact Linda.

Just a reminder that these chapters are due by COB, Monday, May 24. We appreciate your review and input on these chapters.

Also a few folks have asked for a listing of all chapters to understand the bigger picture. We will get that out tomorrow.

Ali

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

From: Alicia Forsythe
Sent: Tuesday, May 4, 2021 4:15 PM
To: 'Amy.Young@water.ca.gov' <Amy.Young@water.ca.gov>; 'Montgomery, Amanda@Waterboards' <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; 'Okita, David@DWR' <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; 'Biondi, Oscar@Waterboards' <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir Project - Responsible Agency Review - Next Batch of Chapters

Responsible Agency Reps – Thank you for taking the time to review Chapters 1 to 4 of the Revised Draft EIR/Supplemental Draft EIS. We are working to incorporate the comments we received.

We are diligently working on the remainder of the Admin Draft document. Chapters are coming to the Authority in "Groups" from ICF as they are completed. We expect to be able to transmit the following chapters as associated appendices on Monday, May 10 for your review. Note that I have identified the Responsible Agency review by chapter. If you would like chapters that I currently do not have identified for your review, please let me know.

Chapter 7, Fluvial Geomorphology – CDFW, SWRCB
Chapter 8, Groundwater Resources – DWR
Chapter 9, Vegetation Resources – CDFW, SWRCB
Chapter 10, Wildlife Resources – CDFW, SWRCB
Chapter 17, Energy
Chapter 18, Navigation, Transportation and Traffic
Chapter 22, Cultural Resources

Comments on these "Group 1" chapters will be due Monday, May 24.

The next batch of Chapters will be available around May 31.

Ali

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

From: Alicia Forsythe
Sent: Wednesday, March 24, 2021 10:13 AM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: RE: Sites Reservoir Project - Responsible Agency Review of Chapters 1 to 4; Due 4/21 (2 of 2 Emails)

Attached is Chapter 2. This is the same version of Chapter 2 that the Authority released to the public on February 19.

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: Wednesday, March 24, 2021 10:07 AM
To: Amy.Young@water.ca.gov; Montgomery, Amanda@Waterboards <Amanda.Montgomery@waterboards.ca.gov>; Kristal Davis Fadtke (Kristal.Davis-Fadtke@wildlife.ca.gov) <Kristal.Davis-Fadtke@wildlife.ca.gov>; Okita, David@DWR <David.Okita@water.ca.gov>; Cooke, Robert@DWR <Robert.Cooke@water.ca.gov>; Biondi, Oscar@Waterboards <Oscar.Biondi@waterboards.ca.gov>
Cc: Laurie Warner Herson <laurie.warner.herson@phenixenv.com>
Subject: Sites Reservoir Project - Responsible Agency Review of Chapters 1 to 4; Due 4/21 (1 of 2 Emails)

Responsible Agency Reps – The Sites Authority has prepared preliminary drafts of Chapters 1, 2, 3, and 4 of the our upcoming Revised Draft EIR, which is scheduled for release in August. These chapters cover the following topics:

1 – Introduction
2 – Project Description (same as previously sent to some of you)
3 – Environmental Analysis Approach
4 – Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements

These preliminary draft chapters are attached. As an agency that may be taking a CEQA action on the Project, we welcome your review and input on these preliminary chapters. We would like to received input by April 21. Please feel free to make changes, using track changes and/or comment bubbles in the files.

These preliminary draft chapters have also been distributed by Reclamation to a number of federal agencies that are Cooperating Agencies under NEPA. And as a reminder, these preliminary chapters are not for public review and should not be distributed to the public unless required to do so by law.

We continue to work on the remainder of the document and will get you additional preliminary draft chapters as they become available.

We appreciate and look forward to your feedback. If you have any questions or concerns, please feel free to contact me. We are also happy to host a call and walk the group through these chapters if folks would find that helpful – just let me know.

(Note, this email includes Chapters 1, 3, and 4. Chapter 2 will be sent in a separate email due to file size.)

Ali

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

From: Oakes, Harry [Harry.Oakes@icf.com]
Sent: 5/28/2021 10:49:28 AM
To: Alicia Forsythe [aforsythe@sitesproject.org]; Spranza, John [john.spranza@hdrinc.com]; Briard, Monique [Monique.Briard@icf.com]; Arsenijevic, Jelica [Jelica.Arsenijevic@hdrinc.com]
Subject: RE: Mitigation Cost Review
Attachments: SitesReservoir_MitigationCostEstimate_05282021.xlsx

Thanks for the feedback/info, Ali & John.

Ali, I incorporated the revisions into the cost tables and provided responses to your email (in red) below. I also provided responses to Jeff's comments, further below (in red)

You may recall that the 2021 aquatic cost ($46.5M) was below the 2020 VP estimate ($56M). I revised the current aquatic mitigation cost to match the 2020 VP cost.

The changes to aquatic costs, in addition to edits/reductions to RLF and WCA, pretty much balance out (-$6M). So the total mitigation cost is still in the area of $570M

John, I'll be out of town for field work next week but can work on editing the PPT as needed. I do plan to be on next TH's ad hoc prep call

Also, just an update that we are coordinating internally to develop the mitigation costs associated with Dunnigan and Colusa Drain. Can I assume that we "will not" include those numbers in the ad hoc presentation?

Thanks!

Have a great weekend everyone!

Harry

From: Alicia Forsythe <aforsythe@sitesproject.org>
Sent: Tuesday, May 25, 2021 6:31 AM
To: John Spranza <John.Spranza@hdrinc.com>; Briard, Monique <Monique.Briard@icf.com>; Oakes, Harry <Harry.Oakes@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: RE: Mitigation Cost Review

Thanks John. I think we can explain the differences that Jeff notes below.

A few more comments:

1. On the Wildlife tab – we mention that total costs for CRLF aquatic mitigation current includes funks reservoir. We should take this text out as I thought we took this out of the cost estimate. Complete. Aquatic acreage reduced to 287 acres, cost reduced by approx. 12M

2. On the wildlife tab – I think we should double check the notes for swainsons hawk. There is costs for nesting habitat, but the note doesn't seem to correspond. Note removed

3. Under Wild-1.16 – lets delete the 1 in the acre box as I think we removed this, but this 1 just hanging out there might be a little confusing. Number removed

4. Wild-1.21 – Let change box to say – No additional costs associated with this mitigation measure. Vegetation removal costs covered under Construction phase. Note revised

5. Ag – WAC contracts rescinded – I think these costs would be covered under our land acquisition costs. We would not leave landowners with a tax bill due to the change in ownership. I feel like these can be removed, but maybe we should talk to make sure I understand what these costs are for. I concur that they could be removed. Could all of the costs on these tabs be considered land acquisition costs? If so, it would zero-out all the Ag Land costs

6. Cultural sheet – I think we should just walk though this one more time to make sure we are not missing anything that should be costed out here. OK

Thanks!

Ali

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From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Monday, May 24, 2021 1:57 PM
To: Alicia Forsythe <aforsythe@sitesproject.org>; Monique Briard (monique.briard@icf.com) <monique.briard@icf.com>; Oakes, Harry <Harry.Oakes@icf.com>; Arsenijevic, Jelica <Jelica.Arsenijevic@hdrinc.com>
Subject: FW: Mitigation Cost Review

I asked Jeff H to take a look at the mitigation sheet and he has provided a few comments. I think we have good rational behind all of the assumptions that he has hit on, but its nice to get a different perspective. Please let me know if you see any comments that we should address further.

Thanks.

John Spranza

D 916.679.8858 M 818.640.2487

From: Herrin, Jeff <jeff.herrin@aecom.com>
Sent: Monday, May 24, 2021 10:59 AM
To: Spranza, John <John.Spranza@hdrinc.com>
Cc: Luu, Henry <Henry.Luu@hdrinc.com>
Subject: FW: Mitigation Cost Review

John,

My comments are as follows:

- The cost per acre for annual grassland mitigation banking is about exactly double the cost that we used. Maybe the cost for the mitigation bank is double. Your cost may be for irrigated grassland. If we can use unirrigated rangeland, that should suffice to mitigate for the valley inundated by Sites and I believe it may be less expensive. Irrigation is a pretty big cost driver. I don't think we want to use a mitigation bank with irrigation if it can be avoided. We used 2 costs for annual grassland mitigation. $2,000/ac for rangeland (11,690 acres). The remainder was assumed to be on a mitigation bank to account for stacking of habitat credits for species. We selected 14,500 acres required which roughly equates to what would be required for Swainson's hawk upland.
- I'm not sure if the stream mitigation includes Funks and Stone Corral Creeks. We are spending a lot of money to put in pipelines and to maintain flows in the creeks prior to construction that would interrupt flow to Funks and Stone Corral Creeks. Maybe you are mitigating a different creek, but the cost seems high for these two creeks. Our stream mitigation costs assumes is assumed to be the same as the per acre cost for other wetland types. Since we aren't sure we can create stream streams or get enough LF at a bank it may need to be out-of-kind.
- The mitigation cost for blue oak woodlands/oak savannah is also a much higher per acre than we were using (about 6 times our cost). Suggest you check the cost per acre ($35,000/acre may generate some questions). Our cost assumes oak mitigation at a bank.
- Here is what we had on elderberry previously: We assumed up to 500 shrubs impacted, which admittedly is probably high. We can reduce the number of assumed shrubs affected. Total cost for the 500 shrubs is $2.75M, we could reduce that by half?

There are two elderberry shrubs located within the potential construction disturbance area for Sites Reservoir and Dams that could be completely avoided by establishing and maintaining a 100-foot-wide or wider buffer around them. Construction crews shall be briefed regarding the need to avoid these plants, and signs shall be posted during construction to avoid the buffer area. After Project construction is complete, this area would not be affected by Project operation or maintenance.

The elderberry shrub immediately adjacent to the footprint of the Delevan Pipeline Intake/Discharge Facility is located on the edge of an irrigation canal that is situated along an existing access road. Because of its proximity to the road, it would not be possible to establish a 100-foot-wide buffer. It would also not be possible to establish a 100-foot-wide buffer for the shrubs located immediately adjacent to the existing Maxwell Sites Road. Consultation with USFWS would be initiated for possible approval to encroach on the buffer. Otherwise, appropriate mitigation measures shall be implemented.

The elderberry shrubs within the footprint of Sites Reservoir, Sites Dam, and Golden Gate Dam, as well as the one shrub within the footprint of the Delevan Pipeline Intake/Discharge Facility, would not be avoided by Project construction, and therefore, shall be transplanted or replaced, depending on the likelihood of survival post-transplantation. Transplantation procedures shall comply with USFWS's 1999 Conservation Guidelines for the Elderberry Longhorn Beetle (USFWS, 1999). If transplantation is not feasible, USFWS general guidelines require replacement of elderberry plants in designated mitigation areas. Elderberry plants are typically replaced at a ratio of 2:1 for stems greater than one inch in diameter at ground level with no adult emergence holes, 3:1 for stems where emergence holes are documented in less than 50 percent of the shrubs, and 5:1 for stems greater than one inch in diameter with emergence holes.

Mitigation measures already required for the loss of riparian habitat pursuant to the mitigation for loss of wildlife habitat types described above could potentially compensate for the native planting requirement for elderberry plant mitigation.

- Red-legged Frog is a much bigger issue now than it was when the prior estimate was put together due to USFW focus. It is a pretty significant contributor to cost growth. Comment noted
- We have a pretty significant difference on Williamson Act associated costs. We had assumed that contracts could be rescinded for many acres. The current estimate did not take this approach. The delta is about $26M. Comment noted. We removed the tax costs for rescinded acres which saved approx. $7M. Per my response to Ali, could all ag land costs be removed and covered under real estate costs?
- Henry mentioned this was a 2019 cost estimate. Given the cost per acre, you may want to consider making it 2020 or 2021. Comment noted.

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From: Spranza, John <John.Spranza@hdrinc.com>
Sent: Friday, May 21, 2021 10:27 AM
To: Herrin, Jeff <jeff.herrin@aecom.com>
Subject: [EXTERNAL] Mitigation Cost Review

Hi Jeff,
Could you take a look at the attached mitigation cost estimate and get back to me with comments on items you see as potential issues? We're looking to finalize it the first week in June so if you could get those over to me by the end of next week I would appreciate it.

Let me know if you can't squeeze this in or if you have any questions.

Thanks
John

John Spranza, MS, CCN
Senior Ecologist / Regulatory Specialist

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